EVALUATION OF THE UNICEF ASSISTED SCHOOL SANITATION AND HEALTH EDUCATION PROJECT IN VIET NAM

Hanoi
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Prepared for MOET and UNICEF

by

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About the Authors

Leo Goulet is a drinking water and sanitation consultant with an academic background in geotechnical science and management and 27 years of experience in international development, including 22 years in the field of water and sanitation. He has extensive experience with the development of water and sanitation programmes that stress learning process approaches and the importance of demand based planning and management. He initiated UNICEF's support to water and sanitation activities in rural areas of Vietnam during his posting there from 1980 to 1985 and in Nepal from 1973 to 1980 where his UNICEF activities centred on gravity flow piped water systems. In February 1998 he completed a 5.5 year assignment with UNDP/UNOPS in Cambodia where he worked with the CARERE project which focuses on capacity building at the village level. He recently led a team that evaluated the 'Pumped-Piped Component of the UNICEF Assisted Water and Sanitation Programme in Vietnam'. He has travelled extensively in 65 countries on five continents. He speaks English, French and Nepali.

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Executive Summary

This evaluation of the UNICEF assisted 'School Sanitation and Health Education Project (SSHEP)' in Vietnam was carried out over the period of 16 September to 4 December 1998 at the request of UNICEF. The evaluation does not assess project outputs and outcomes against sets of pre-established indicators, as such indicators have yet to be developed and put in place, but against project descriptions and expectations as outlined in the 'Master Plan of Operations 1996-2000' and discussions with government and UNICEF personnel. This report describes the evaluation team's findings, conclusions and recommendations.

A considerable amount of information was gathered on SSHEP development and implementation to date. As a result, what is thought to be a reasonably accurate picture emerges of the existing situation at each of the 19 sites visited as well as at the overall project level. It is clear that the work that has been done in the context of this project has made a significant contribution to the advancement of rural development throughout the country in general and to improvements in the sanitation situation at primary schools in particular. It is an area of activity which merits continued and sustained support, and ongoing efforts which are being made to further improve the project's capacity to bring about change at the community level are to be encouraged and commended.

Some of the observations, conclusions and recommendations made by the evaluation team apply to all of the sites without exception and may also apply to SSHEP in its entirety. For example it is clear that project activities reach schools all over the country but that their impact varies from place to place; health education textbooks are widely available but the level of ownership ranges from 20% to near 100% depending on the geographical area concerned. End-user participation in project planning and project focus tends to be too technically focused. On the other hand some of the observations, conclusions and recommendations apply only to one specific school. For example Ky Ba is the only school visited where health related posters had been produced by the teachers and students of the school itself.

The 'Lessons Learned' section of the report describe broad observations made that may be of specific use as reference in the course of future SSHEP planning exercises.

The 'Appendixes' section includes technical reference materials that may also be of use in the course of future project development.

1 Introduction

1.1 Scope of Work

The evaluation team's scope of work was to:

- Assess the development of SSHEP with its achievements and constraints.
- Assess the appropriateness of the WATSAN technology applied in the schools.
- Assess the quality of the WATSAN facilities constructed.
- Assess the use and maintenance of the facilities.
- Assess the level of awareness of proper hygiene, including water and sanitation, on the part of school children, teachers and parents.
- Assess the availability and use of IEC material (i.e. textbooks, teaching aids, etc).
- Assess the prospects for future UNICEF assistance to SSHEP.
- Assess project monitoring and management at central and local levels.
- Assess the effectiveness of collaboration between the various agencies that support the health, education and water components of SSHEP.
- Assess the existing funding arrangements (i.e. source of funds allocated, disbursement and control of UNICEF project funds).
- Suggest possible ways to improve the use and maintenance of the WATSAN facilities.
- Suggest possible ways to improve hygiene education for behavioural change.
- Suggest a possible model to improve monitoring and management. Suggest possible improvements in project planning and management, especially in project monitoring.

1.2 The Evaluation Team

The four member evaluation team combined Vietnamese and expatriate specialists in several disciplines:

Leo Goulet	Team Leader. Management, administration and overall technical considerations. Water and sanitation consultant.
Le Van Hao	Education development, health education and social policies. Education specialist.
Nguyen Thanh Liem	Demography, economics and sociology. Social specialist.
Le Kim Dung	Project co-ordination and health education. Medical doctor and health education specialist. Secretary of the SSHEP Central Management Board.

1.3 Evaluation Methodology

The broad scope of the evaluation necessitated that the time available be carefully allocated to ensure that all main areas of interest were adequately covered. SSHEP is implemented country-wide and the evaluation needed to be geographically, socially and technically representative. The scope of the work demanded that a high proportion of the time be spent at the provincial level, while time spent in Hanoi was dedicated to assembling the evaluation team, site selection and trip preparations. Discussions were held with key contact persons at the national level, but a minimum amount of time was spent on the examination of overall programme budgets and administrative arrangements, as little written information of this nature was made available to the team. Two project review meetings were held with the SSHEP Director and his staff over a period of 1.5 days, and a similar half day meeting was held at the UNICEF office on completion of the field visit, to review findings and to clarify certain issues.

It is to be noted that, despite several requests, it was difficult to obtain project related written documentation. Copies of published material such as the health education textbooks and posters were gladly provided but the only UNICEF documentation made available was the MPO for 1996-2000 and a progress report entitled 'School Sanitation and Hygiene in Vietnam' dated July 1998. The team did not have access to UNICEF supply lists, cash lists, or project related correspondence and reports other than those already mentioned. MOET eventually provided the team with a considerable amount of valuable information, both verbally and in writing, and much of the information obtained on UNICEF funding and other aspects of UNICEF's support to SSHEP was in fact provided by MOET. It is suggested that future evaluation missions be provided, in advance, with a complete set of relevant background reference documentation. Alternatively, a list of documents could be provided with instructions on where they are to be found.

The 19 sites visited were selected according to a set of criteria developed by the team, which helped ensure that the sites were geographically and socially representative, that they represented both 'old' and 'new' installations, that both large and small schools were included, and that both semi-urban and rural schools were visited.

The evaluation team was permitted to choose sites on its own without the influence of the staff of MOET, UNICEF or any other ministry or agency . Consequently, and because of the fact that none of the core team members were familiar with any of the individual locations chosen, site selection was as objective as it could have been under the circumstances. Furthermore, once the sites were chosen no changes were made to the list: the 19 sites visited were those selected prior to the team's departure from Hanoi, as site substitution could have introduced factors which were not entirely objective. The one exception was that the site selected for a visit in Kon Tum Province had to be dropped because it was later discovered that road conditions were not as good as expected and visiting the site would have required delaying the remainder of the trip by a day. The 19 sites were visited in the order determined in Hanoi, starting with Chieng Coi in the north-western Province of Son La and ending at Tan Dinh in the Southern Province of Ca Mau.

The team covered a distance of 4,600 kms. by road and returned to Hanoi by air from HCMC. The one single drawback experienced during the course of the trip was the fact that transport arrangements for the team were not entirely satisfactory. The vehicle rented for the occasion was feeling its age and lacked certain basic safety features such as road-worthy tyres. The driver of the vehicle had a difficult and unhelpful personality which created unnecessary tension within the group, due to the fact that long hours were often spent in the vehicle over a period of three weeks. It is to be recommended that, for the benefit of future trips of this nature, more care be put into the choice of vehicle and driver.

A reference sheet of points and issues that required investigation and study, and that served as an interview guide throughout the trip was prepared; the team did not make use of prepared questionnaires. The method adopted instead for the purposes of information gathering was relatively unstructured but more flexible, being based as it was on Q&A sessions that responded to the situation at hand. This method allowed the team members to adapt to actual situations encountered, an important consideration where no two sites visited presented an identical set of issues. Consequently the information gathered differs from site to site. Because of time limitations, as only half a day was in general available, each site visit tended to focus on the areas of interest that were particular to that specific school. Some of the case studies centre on the latrine's technical considerations, while others concentrate on project planning and management at the provincial, district and commune level. In this way the overall picture that emerges when all 19 sites are viewed as a

whole is more complete than it would otherwise have been if exactly the same topics had been reviewed at each of the sites visited. A considerable amount of time was spent in discussion with the members of the Provincial Management Boards of most of the provinces visited.

Discussions were held with other interested officials at all levels, from national to commune and in-depth discussions were held with teachers, students and householders. It was made standard practice to interview individuals or small groups without the presence of other individuals who could have unduly influenced the course of the interview. For example students were interviewed without the presence of their teachers.

Most of the observations recorded in the report were made first-hand by team members and when the observation was reported by someone who was not a team member it is noted as such. All information related to population, budgets, number of schools assisted and their location, number of students, supplies and equipment used in the construction of WATSAN facilities, etc. is in general secondary data which the team was unable to verify. Observations made directly by the team members are believed to be as accurate and as representative as was possible under the circumstances and the conclusions reached are directly based on those observations.

The case study recommendations relate directly to observations made at each specific site. National level recommendations relate to issues common to all 19 sites and possibly to the overall SSHEP. It is clear, however, that no two sets of issues are exactly alike and care must be taken not to extrapolate conclusions unless it is fairly certain that they do in fact apply universally.

2 Programme Background

2.1 Country Context

Since the end of the war in 1975 Vietnam has gone through a number of phases on the road to development. The first was a period of reconstruction that lasted approximately 11 years, from 1975 to 1986, during which time stress was placed on rebuilding the country's infrastructure. Steps were then taken to liberalise the economy and the social structure in general. As a result of these measures it became possible for the government, in many cases with the assistance of external support agencies, to increase the scope of long-term development related programmes.

2.2 Programme History

UNICEF first became involved with drinking water activities in Vietnam in 1979 when supplies and equipment for the rehabilitation of the urban water supply systems of Hanoi and Haiphong towns were provided. The materials supplied included equipment for cleaning the Hanoi water mains, and high capacity centrifugal pumps to boost the distribution capacity of the networks of both towns.

UNICEF gradually moved away from rehabilitation work and began to assist the development of a drinking water and sanitation programme. A water and sanitation officer was recruited for the WATSAN programme in September 1980. At the initial stages programme responsibility was that of the New Economic Zones Department of the Ministry of Agriculture who were looking for ways to develop new areas for agricultural production in the Mekong Delta. It was not possible to settle people in many of those areas because of the lack of fresh water. The first three provinces to receive drinking water assistance for rural areas were all located in the Mekong Delta: Long An, Minh Hai and Kien Giang. In 1983 the programme was expanded to include the three Northern provinces of Ha Nam Ninh, Thanh Hoa and Nghe Tinh. In 1984 a sanitation officer was recruited to support the sanitation component of the WATSAN Programme. By 1985 there were five international and three national UNICEF staff assigned to the WATSAN programme.

Meanwhile at the national level the government was being encouraged by UNICEF to adopt specific measures proposed in the UN water decade guidelines, such as the establishment of a national action committee for water and sanitation, which in fact came to be formed in 1982. Steps were being taken to begin local production of programme related supplies, and the first "Number 6" handpumps were cast at a foundry in HCMC in 1984.

In 1986 a ministerial level workshop on hygiene education in primary schools was held and soon afterwards work began on the development of a health education curriculum and textbooks for primary schools. In 1990 a project proposal on the teaching of health education and the provision of sanitary facilities to primary schools was prepared by MOET. Implementation of the 'School Sanitation and Health Education Project' (SSHEP) began, with UNICEF support, in 1991.

3 National Level

3.1 Observations and Findings.

3.1.1 Background and Planning.

3.1.1.1 UNICEF

UNICEF assistance to the School Sanitation and Health Education Project (SSHEP) is described in the UNICEF Master Plan of Operations (MPO) for 1996-2000 as a component of the WATSAN Programme rather than as a sub-project in its own right.

The MPO's overall sectoral goal for Sanitation (MPO pages 10 and 140) is: "To promote and improve knowledge, awareness and correct practices of personal hygiene and environmental sanitation among communities and among primary school children by: 1- providing 60% of the rural population access to sanitation facilities by 2000; 2- providing 13,000 primary schools / ethnic minorities boarding schools / rural health centres drinking water and sanitation facilities by 2000 (i.e. coverage of 100% primary schools in the country)." By December 1998, it is foreseen that 3,410 schools will have been provided with WATSAN facilities with UNICEF assistance, and 2,558 without UNICEF assistance. The total number of schools assisted will then be 5,968 schools by end-1998, or 46% of the target total of 13,000 schools. The team did not see any baseline information on the number of primary schools that had proper WATSAN facilities at the beginning of the project in 1991.

There are multiple sectoral goals for Sanitation: "Programme Objectives" (MPO page 124), "General Objectives" (page 125), "Programme Component General Objectives" (MPO page 140), and "Programme Component Specific Objectives" (MPO page 141). It is difficult to determine which objectives are those of UNICEF and which are those of government for the plan period in question. Some objectives specifically address sanitation facilities' coverage; others include broader aspects of environmental sanitation such as the promotion of the use of smokeless chulas.

"Each of the poor provinces will identify four (of the) poorest districts, the mid-provinces will identify three (of the) poorest districts and the rich provinces will identify the poorest district, each to receive UNICEF assistance. All communes in each of the target districts will be served". The 142 districts of the Area Focused Programme will receive priority, and the estimated total of 3,000 schools in those districts will be covered first with the assured UNICEF fund. 1,340 (45% of the target) schools were covered during the first three years of the plan period: 290 schools in 1996, 350 schools in 1997 and 700 schools in 1998. An indicative target of 400 schools has been set for 1999. No target has yet been set for the year 2000, but assuming that it will be approximately 400, the total number of schools assisted during the plan period will be approximately 2,140 schools, equivalent to 71% of the target of 3,000. When the target number of 5,000 schools is adopted, which was indicated as a possibility if the required supplementary funding were available, the level of achievement drops from 71% to 43%.

"Only after covering these districts and based on the availability of additional supplementary funds, coverage would be expanded to 200 districts. All the communes in each selected district will be covered with UNICEF assistance". (MPO, page 19). It is indicated elsewhere, however, that Sanitation is classified under "national coverage" rather than under AFPD (MPO, page 17).

Phasing of implementation in the 142 AFPDs will be as follows: 1996 (42 existing PHC districts for consolidation and acceleration of integrated services); 1997 (25 districts); 1998 (25 districts); 1999 (25 districts) and 2000 (25 districts), (MPO, page 229). It was reported separately that by the end of 1998, 116 of the 142 AFPDs will have been covered by SSHEP (i.e. 61 AFPDs in 1996, 28 in 1997 and 27 in 1998). The proposed allocation of UNICEF funds for SSHEP for the 1996-2000 plan period is $7.4 million (MPO, page 149).

Separate reports also indicate that the government has approved a list of 1,000 poorest communes country-wide in which at least 40% of the households are classified as 'poor' 310 of those communes are located in

AFPDs (29 districts), with a total population of 1,021,730. The remaining 113 AFPDs do not have 'poorest' communes. These communes are said to have the lowest coverage of social services in the country. It was mentioned that in future UNICEF will attempt to focus its activities in areas where AFPDs and 'poor communes' converge.

Officials of one of the provinces visited were of the opinion that focusing a large amount of resources in a specific area of coverage increases the difficulty in mobilising local funds, as the community finds itself in a position where it is expected to contribute to a number of projects simultaneously.

The consolidated list of 750 schools proposed for assistance during 1998 has been modified in a number of ways since its initial development. At the central level, UNICEF is committed to assist the sanitation component of only 700 of the 750 proposed schools, with the understanding that the remaining 50 schools will be assisted if and when the required funding becomes available. On the other hand UNICEF is committed to assisting the water component of all 750 schools, through CERWASS, and the water component of 100 additional schools that were proposed in previous years and which have not yet been provided with a water facility. In summary, during 1998, 700 schools will receive UNICEF assistance for sanitation and 850 schools will receive UNICEF assistance for water.

It was reported that UNICEF is interested in principle in assisting sanitation and health education activities at lower secondary school level but it presently lacks the required funds. There appear to be no real prospects of this type of assistance being provided before the year 2000.

3.1.1.2 Government.

MOET reports that there are 12.606 primary schools (grades one through five) in Vietnam, with a total of 38,000 satellite campuses. In addition there are 294 schools where primary and secondary classes are integrated into the same school. The total of these three categories combined is, for all practical purposes, 50,900 primary schools that serve the estimated total of 11 million primary school students. MOET estimates that 2,600 (20%) of the 12,900 main campuses have adequate sanitation and that most have adequate water supply. Since 1991, 5,968 primary schools in AFPDs have been provided with SSHEP assisted latrines: 3,410 schools with, and 2,558 schools without UNICEF assistance. When only the main campuses are referred to, then UNICEF has assisted 3,410 of 12,900 schools, or 26% of the total number; when satellite schools are included, however, the proportion drops from 26% to 7% (i.e. 3,410 of 50,900 schools).

Common drinking water arrangements at schools are: 1- students carry water from home; 2- the school makes special arrangements to have water boiled and placed in classrooms, etc.; 3- treated and disinfected water is provided to the school (e.g. through mains connections).

There are three categories of primary school curricula: 1- 165 weeks; 2- 120 weeks; 3- 100 weeks. The number of weeks indicated is the length of time required to complete the entire curriculum for each respective category. The government's preference is for all students to follow the 165 week curriculum, but this is not always possible, hence the need for the other two categories. Health education is compulsory for the category one curriculum only.

From 1991 to 1995 the number of schools to be assisted, but not their names, was provided to the provinces from the central level. From 1996 onwards schools assisted are expected to be located in AFPDs. When the AFPDs were selected in 1996 there were only 53 provinces. Of those, 17 were classified as 'rich', 17 as 'medium' and 19 as 'poor'. AFPDs were allocated on the following basis: one AFPD for each rich province; three AFPDs for each medium province; and four AFPDs for each poor province. Certain other unspecified socio-economic indicators were also taken into account during the AFPD selection process.

It was reported that the MPI and UNICEF jointly consulted on the selection of AFPDs, and that the selection criteria they observed are similar. The process followed was that the PPCs proposed a list of potential AFPDs which they forwarded to MPI, who then prepared a final list, which was forwarded to UNICEF for information.

It appears that DOH and CERWASS are not directly involved in the selection of schools to be assisted and discrepancies were reported between MOET and CERWASS lists of schools assisted in any given year. Significant changes were made at the provincial level to the MOET list of schools proposed for SSHEP

assistance in 1998. The MOET list is reportedly based on initial proposals from the PPCs but there are nevertheless, in some cases, significant differences between the existing MOET and PPC lists of schools: for example the PPC sometimes increases or decreases the number of schools to be assisted, or transfers some of its allotted quota from one district to another.

SSHEP assistance targets the poorest districts but because those districts are poor they are sometimes unable to raise the required local contribution, which can result in unfinished projects and wasted supplies and materials. Some provincial authorities are concerned that funds allocated to other projects may have to be diverted to enable the completion of SSHEP installations.

Reports from commune and district indicate that UNICEF assistance is not always directed at the poorest communes—those who find it most difficult to raise project funds locally. The PDOET of one of the provinces visited said that the 10 schools selected for assistance in 1998 are located in 10 of the province's richest communes. Some provincial officials are concerned that the high cost of WATSAN installations may put the project beyond the reach of the poorest communities. Representatives of one of the communes visited stated that no SSHEP assistance has yet been received despite the fact that it is said to be among the poorest of that district's communes.

Provincial authorities develop a prioritised list of schools to be assisted and submit it to MOET. Final selection is made in Hanoi, according to the level of priority set at provincial level. The provinces apparently were not directly involved in AFPD selection and SSHEP objectives are not clear to a number of the PDOET officials interviewed.

According to MOET the Central Management Board decides how many schools are to receive SSHEP assistance in each province each year. The list of project assisted schools prepared by the provinces indicates the names of the schools by order of priority. If it is then decided at the national level that not all of the schools proposed by a particular province can be assisted during that calendar year, then only the higher priority schools will be withheld. For example, if a certain province were to forward a list of 20 schools and assistance could only be provided by UNICEF to 15 of those schools, then the first 15 schools on the provincial list would retained for project assistance. The remaining five schools would be assisted at a later date if additional UNICEF funds were to become available, or if it were possible for the government to raise the required funds on its own.

The provincial authorities are not bound to adopt the number of schools approved at the central level: for example a province for which 10 schools have been allocated may, if it wishes, implement projects at only seven of those schools. According to officials from one of the provinces, this eventuality is highly unlikely: when external assistance is offered the province is not likely to turn it down. If funds have been committed by the central level they should be used, if necessary by diverting them for use in other districts. The provincial authorities are generally not familiar with the criteria used at the central level in determining the number of schools to be assisted annually.

According to MOET, UNICEF has set the direction for SSHEP. UNICEF's current position seems to be that it encourages assistance to AFPDs, but if necessary non-AFPDs can also receive assistance. This flexibility is at least in part due to incidents such as the following: in 1995, 10 schools were approved for Dong Xuan District, Phu Yen Province, because it is an AFPD. This allocation completed the requirement for the eight communes of that district. The following year, with the encouragement of UNICEF, 10 additional schools were allocated to the district because it is an AFPD, despite the fact that coverage was already complete, a discrepancy which was later rectified.

The provinces are expected to observe the following SSHEP site selection criteria: 1- ease of access; 2- availability of space and land on which to build the facilities; 3- permanent land use authorisation for the land on which the facilities are to be built; 4- a sufficiently high level of support from local officials, including the headmaster; 5- priority given to schools with the largest number of students. It was noted, however, that individual provinces tend to have their own particular site selection criteria, which do not always match those developed at the central level.

Beginning in 1998 it is expected that henceforth all 61 provinces will receive SSHEP assistance every year. Global coverage of this nature has not always been the case, which has in the past raised questions of project equity.

The tentative plan for 1999 is to provide SSHEP assistance to 400 schools; a related central level planning meeting was to be held in November 1998. The resulting proposed list of schools will be evaluated in March 1999, but the related budget is not likely to be approved by MPI before mid-1999. There has reportedly been no provincial level planning yet for 1999. This apparently cannot be done until MOET receives an indicative planning figure from UNICEF, which they are likely to receive in January 1999. It will then be possible to more accurately estimate the number of schools that can be assisted during that year and inform the provincial authorities accordingly.

The MOET officer responsible for primary schools was of the view that MOET/UNICEF should allow the provinces to select the schools to be assisted, along with the WATSAN designs to be applied and their costing. The amount of funds provided to each school should match the respective designs: as a result some schools would be entitled to more, and some schools to less. The designs could be prepared by the District Technical Offices, with assistance from CERWASS as required. All new schools include, in theory, the installation of WATSAN facilities simultaneously with the construction of the school itself.

It is to be kept in mind that in those cases where primary and secondary schools share premises, demand for WATSAN facilities is larger than it would otherwise be.

It was noticed that the Parents' Associations are generally very active and supportive of activities at the school, including those related to SSHEP.

The SSHEP Director made the following recommendations with regard to the 2001-2006 plan period.

1- He strongly recommends continued UNICEF assistance to the project.
2- He would prefer if specific focus were not given to AFPDs, as doing so leads to certain inequities. For example, Phu Yen is in fact a poor province but it is not included on the list of poor provinces. (He noted that UNICEF's AFPD policy has recently become more flexible).
3- The central government / UNICEF should transfer funds more promptly to the provinces, and should allow the latter more time to spend and account for those funds.
4- UNICEF should resume the Provincial Management Board Monitoring Fund (funding of the National Management Board Monitoring Fund was resumed in 1998).
5- CERWASS should ensure that all project assisted schools are provided with a water source. If they are unable to do this then UNICEF should consider providing those funds for use by the PDOETs in selecting contractors for the purpose.
6- The MOH should consider / test / experiment with a variety of latrine designs and installations in order to provide an appropriate choice of designs to suit any given set of conditions.
7- UNICEF should consider resuming support to a de-worming project which it previously assisted through the supply of Mebeldazon tablets. Parents were very supportive of that project. Assistance could be provided to certain selected areas if it were not possible to support a country wide project such as this.
8- UNICEF should set aside a fund to provide free textbooks to students in particularly difficult circumstances.
9- He has heard informally that MOET is considering discontinuing in 1999 its Programme No. Eight for school maintenance and small repairs, from which the amount of D3 million / school is allocated for latrine construction. If this is the case, he recommends that the decision be reconsidered and that the programme be allowed to continue.
10- Designs for new schools include provision for WATSAN but this requirement is in practice flexible. MOET should insist that WATSAN facilities should always be put in place simultaneously with school building construction.
11- There should be regular communication and meetings between the various concerned parties, particularly between MOET, MOH and CERWASS. At the moment some of the parties may feel that there are more important issues than school WATSAN to address.
12- All accounts for UNICEF funds should be submitted by the provincial authorities to MOET on time. If even one of the 61 provincial accounts is not submitted, MOET is unable to forward all the other statements to UNICEF, in which case all MOET/UNICEF project accounts will be temporarily frozen, pending receipt of the missing accounts.
13- There should be greater commitment on the part of local governments in terms of funding and other means of project support.
14- UNICEF should resume its assistance to poster production, at least in certain special cases.

15- Frequent changes in the level of UNICEF funding for the project make it difficult for MOET to plan its activities in advance.
16- A small fund should be provided by UNICEF to enable the resumption of health education competitions of various sorts.

3.1.2 Management.

3.1.2.1 UNICEF

Sanitation project activities are grouped under 3 main sub-projects: 1- advocacy for sanitation and hygiene education; 2- construction of sanitation facilities – demonstration and expansion; 3- hygiene education in primary schools. Particular attention will be paid to link construction of latrines with: 1- income generation activities under WID; 2- tubewell construction under RWS; 3-VAC under Education. As regards loan schemes, the implementers will decide about the amount of loan and modalities of disbursement, interest, recovery and record keeping. In general, 100 families may avail of such repayment. If appropriate, interest could be nil for those who repay within six months and double for those who repay within one year. If materials or manufactured components are supplied, the same could be repaid in equivalent cash. The recovered amount would be immediately given as loans to other willing families and the process would continue, not only up to 2000 but beyond. (MPO page 144).

UNICEF supports non-formal health education through such channels as the mass media (e.g. Vietnam Television, and the Young Pioneers' Council, who organise plays and other similar activities. It was reported that although UNICEF sees non-formal education as an important means of health education, the agency has nevertheless given that area of activity a lower order of priority recently.

The central level MOET list of 3410 UNICEF assisted schools is neither entirely up to date nor accurate and it is difficult to determine whether the actual number of schools assisted is higher or lower. Modifications made to the list at the provincial level are common and it appears that those changes frequently are not subsequently reflected in the MOET list.

Beginning in 1998 UNICEF advances 100% of its contribution for health education and latrine construction to MOET, who then transfer the funds to the provinces. Previously, only 50% of the funds were initially advanced initially and the second instalment was made at a later stage. All UNICEF funds advanced must be accounted for within six months of the date on which they were handed over, and in any case not later than 13 December of every year. The view of the Project Director is that the funds should be handed over earlier in the year and that a six month accounting time frame is too short. Greater flexibility in terms of allocation and use of UNICEF assistance would allow greater adaptability to local situations and need.

MOET reported that UNICEF fund limitations are the first constraint to project development, although the contribution has recently been increased from $300 / school to $400 / school. UNICEF now stresses the AFPD approach, in areas where by definition it is relatively difficult to raise local contributions. The Management Board is of the view that UNICEF's current practice of making its contribution to the construction of latrines in cash rather than in kind, as was the case prior to 1996, is an improvement. At that time the cost of transporting the construction materials from port to province was greater than the value of the materials themselves.

Under the current arrangement construction materials that are available locally (cement, rebars, etc.) are ordered from the supplier by the provincial authorities. The materials are then handed over to CERWASS, who in turn forward the completed paperwork to UNICEF, who then pay the supplier directly. It was reported that in practice suppliers are sometimes reluctant to release the materials without first receiving payment, in which case CERWASS certifies receipt in advance; on the basis of their certification UNICEF transfers payment to the supplier, who in turn release the materials to CERWASS.

There apparently is no mechanism in place at the national level to ensure regular and systematic co-ordination and information exchange between the various WATSAN external support agencies, although continual informal contact is reported.

Officials in a number of provinces visited mentioned that improved co-operation and collaboration between the concerned SSHEP ministries and UNICEF would be desirable.

3.1.2.2 Government

The following is a brief summary of SSHEP achievements as provided by the Project Director.

Summary of Achievements and Developments: 1991-95

The objective of the project during this period was to provide latrines and a source of clean water to 50% of the total number of the primary schools in the country. Due to a shortage of both external funds and funds mobilised locally, however, it was possible to assist only 2,070 schools (16% of the total), in all 53 provinces. UNICEF and government assistance was each sufficient to cover 20% of related costs; the remaining 60% was covered by the end-user communities. The total UNICEF contribution for the period amounted to $1,595,800, the sum of $795,800 of which was allocated to project number W04 (Health Education), and the remaining $800,000 to project number E03 (Environmental Sanitation).

Five health education textbooks for grades one through five respectively, one textbook for teachers and five reference manuals for teachers were developed, published and distributed. A use and maintenance manual for WATSAN installations was produced. 14,000 posters on 40 different topics were produced and distributed, as were 7,500 magazines related to health education. Over 8,000 teachers attended teaching method refresher courses. VAC was introduced in 286 schools and at 1,770 'VAC Points'. Motorcycles were provided to the Provincial Management Boards. Health Education was adopted as one of the curriculum's nine compulsory subjects in 1995.

Summary of Achievements and Developments: 1996

At the initiative of UNICEF the project began focusing on AFPDs, with coverage of 61 districts in 42 provinces. Some health related educational materials were prepared for four ethnic minority groups: Kh'me, Bana, Cham and H'mong. Bilingual reference books on health and the environment were prepared for ethnic minority students in grade four. 100,000 bilingual health textbooks were prepared for minority group students in grades one and two and poor children in AFPDs. A Q&A book and posters were prepared for minority group students in AFPDs. Educational materials on HIV/AIDS for primary school students were prepared. 290 latrines were installed at schools, and 28 motorcycles were distributed to Provincial Management Boards.

Summary of Achievements and Developments: 1997

A survey on the status of 2,000 school WATSAN installations assisted to date by UNICEF was carried out. A health education textbook and a health exercise book for grade three, a textbook for grade three teachers and reference materials for summer courses were edited. Experimental textbooks on 'Life Skills' for grades five and eight were edited. Training courses carried out included four courses held in Hanoi for 220 teachers from all 61 provinces. 350 WATSAN installations were put in place at schools in 48 AFPDs and 26 motorcycles were provided to Provincial Management Boards.

Plan: 1998

The editing of teaching method guidelines and health education textbooks for grades four and five. Training courses include 61 health education courses at the provincial level and 27 in AFPDs and training in 'Life Skills'. The installation of latrines at 700 primary schools.

Management Related Aspects of SSHEP: 1991-98

The National Project Management Board supervises and co-ordinates the four UNICEF assisted MOET implemented projects, which include SSHEP. The Board is chaired by a Deputy Minister of MOET. Dr. Nguyen Vo Ky Anh has reportedly been officially appointed as SSHEP Project Director, while MOH and CERWASS representatives have each been appointed as Co-Deputy Directors. The Project Director reportedly has the authority to make project related decisions without prior consultation with the Management Board's Chairperson, but he does discuss such matters in advance with both MPI and UNICEF.

The level of real co-ordination between MOET, MOH and CERWASS in general appears low, and indeed CERWASS was not represented at any of the evaluation related meetings and discussions held in Hanoi. The perception of the provincial authorities tends to be that there is an insufficient degree of co-ordination among the Management Board members, both at the central and provincial levels.

Each of the 61 provinces has its own SSHEP Management Board, chaired by a Vice-Chairperson of the PPC who simultaneously serves as SSHEP Director. Co-ordination of Management Board activities at the provincial level is complicated by the fact that the Board's Chairperson, also a PPC Vice-Chairperson, is frequently reported to be too occupied with other pressing matters to be able to effectively deal with SSHEP activities. At the same time the Board's Vice-Chairperson (the PDOET Director or Vice-Director) lacks the authority required to independently co-ordinate those activities. (See letter 7133/GDTC of 2 October 1994 from the Deputy Minister of MOET to the authorities of 10 newly formed provinces).

According to MOET, if a selected district chooses not to implement the full quota of assistance to schools in that district, it can request authorisation from the central level to reduce the number of schools to be assisted. When agreement is given by the latter, then the Provincial Management Board has the authority to divert the related resources to other districts within the province, including to non-AFPDs.

The frequently expressed perception on the part of provincial officials is that they tend not to be sufficiently well informed of the amount of funds to be made available from the central level, of the number of payments to be made and of the guidelines for the use of those funds. In the view of MOET a possible explanation for this is that the central level guidelines are sent to the province's accounting department which then does not pass on the information to all interested parties. Another possible explanation is that the officials who met the evaluation team are sometimes not those who are directly involved with project management and are, consequently, not fully aware of related details.

The contribution that MOET makes to SSHEP from its own resources is fixed: in the early years of the project the amount was D2 million /school; at present the amount is D3 million /school. Those funds are transferred from the Ministry of Finance to the Provincial Department of Finance, who in turn transfer the funds to the District Finance Office, then to schools for the installation of sanitation facilities. This process normally requires a minimum of four months and sometimes much longer. In special circumstances some of the funds can be reallocated at the discretion of the PPC in response to emergencies, for example, and replenished from the PPC account at a later date. PDOET officials would prefer it if central level funds allocated to the water component were managed by the PDOET or by the schools themselves, rather than by CERWASS as is currently the case.

In 1998 MOET contributed the sum of D2.25 billion (equivalent to approximately $163,000) to SSHEP as part-funding of installations at the 700 UNICEF assisted schools, and as full funding for installations at 50 additional schools which are not assisted by UNICEF. MOET funds allocated for use by SSHEP in 1998 were transferred to the provinces on 25 July 1998.

There was widespread reporting of problems related to the mobilisation of funds locally and there typically was a high degree of expectancy for assistance either from the central government or external support agencies. In some cases the communities even expect to receive funds to assist with the cost of maintaining the installations. On the other hand, in cases where such assistance is not available provinces or communes often find a way to raise the required funds locally and complete the project on their own. It was reported separately that the PPCs have yet to include financing for the promotion and implementation of the Environmental Sanitation Project in their budgets (MPO page 122). Parents are expected to pay a specified annual amount towards the cost of school maintenance, including WATSAN installations.

Some schools do not receive SSHEP assistance because the community is unable to raise the required local contribution. For example 70% of the schools initially selected for SSHEP assistance in 1994 in one of the provinces visited reportedly chose not to participate in the project because of their perceived inability to raise the required local contribution. Relative poverty within those communes may have been the prime reason for which they were unable to benefit from SSHEP, but it was noted elsewhere that poor communities are able to raise project related funds when the potential benefits are readily perceived.

It appears that it is possible to successfully operate loan schemes at the provincial level, albeit with a high degree of effort by experienced and dedicated personnel. One such scheme, assisted by the Danish Red Cross, is reported to be performing satisfactorily in Dac Lac Province.

Initial installations, in 1991, were defined as being of an experimental nature but there does not appear to be any documentation that defines the nature of the experiment or that describes follow up monitoring of the experiment and the evaluation of its outcomes.

CERWASS has reportedly been given the responsibility of implementing the water component of SSHEP, but the end-user districts are nevertheless free to utilise the services of private contractors instead if they so wish; in one of the provinces visited, Ca Mau, CERWASS has apparently not participated in SSHEP since 1994. Funds contributed by UNICEF towards the cost of water installations are not managed by MOET: in some cases payment is made directly to local suppliers, and in other cases CERWASS is reimbursed by UNICEF for costs incurred. CERWASS have their own provincial technical teams who are able to travel throughout the province to install water points at schools.

The advantages of utilising this service are that the teams are specialised and experienced and the supplies and equipment they require are provided free of cost by UNICEF. The disadvantages are that implementation is relatively slow, as one team can only work on one installation at any given time. Also, despite the fact that materials are received at no cost, the CERWASS installation is sometimes more expensive than installations made by local contractors who must themselves procure the required supplies and equipment. The reasons for this are not clear, but it appears that some possible reasons are that CERWASS charges additional costs for non-productive wells, for wells drilled deeper than foreseen and for food for the drilling teams, while contractors cover those costs themselves.

Private contractors provide the end-users with greater scope for specifying their individual requirements, but they are sometimes limited by the fact that they must advance their own funds and claim reimbursement on completion of the installation.

It was reported that CERWASS may in some cases agree to transfer materials they received from UNICEF to private sector contractors. In those cases, however, the contractor would be responsible for paying the cost of transportation costs, which could place the project beyond the means of both the contractor and the end-user.

A survey was carried out by MOET in 1997, through the use of questionnaires filled in locally and forwarded to MOET, of the UNICEF assisted installations over the years 1991-96. Some of the findings were: 1- all installations on record were confirmed to be place; 2- the quality of construction was good; 3- there are sometimes problems with maintenance; 4- the installations are at times damaged sooner than expected; 5- some schools are unable to develop an adequate means for providing water to the students, in which case they leave it up to the students to make their own arrangements by carrying water from home or by some other means. The survey recommended: 1- that UNICEF provide a maintenance fund for installations that are more than three years old; 2- that handpumps be replaced by electric pumps; 3- that specific guidelines be issued on the subject of mobilisation of local resources.

A separate survey of WATSAN installations at all primary schools throughout the country is presently underway, also by means of questionnaires which are completed locally and forwarded to MOET. The deadline is 31 October 1998 and 41 provinces had submitted the completed questionnaires by 24 October. No summary or analysis of the questionnaires is carried out at provincial level and all the raw data collected is forwarded to Hanoi.

Facilities meant to serve two or more institutions may become the exclusive property of one of those institutions in the event that the ownership of the shared property is divided among the institutions concerned..

Some of the SSHEP related documentation made available to the team indicates progress and achievements in factual terms but there is little indication of analysis of the project and its progress, achievements and constraints.

3.1.3 Health Education.

Health education reportedly was introduced to primary schools in 1987 at government initiative, while UNICEF began assisting SSHEP in the second half of the 1991/92 school year. All schools that observe the 165 week primary school curriculum are expected to teach health education in grades one through five in

one 45 minute class / week. There is no specific health education curriculum for secondary school, but some integrated classes such as biology and civics do have certain health education components such as, for example, those related to AIDS.

The level of understanding of hygiene at the primary school level is good, but there appear to be few effective health education campaigns carried out within the community itself where the level of awareness is relatively low.

Students from ethnic minority groups up to grade six and perhaps higher appear to be limited in their ability to follow health education classes because of their lack of mastery of the Vietnamese language. Similarly, Kinh teachers may face constraints due to lack of training in communication with minority groups.

Health education textbooks were available at all of the sites visited although the degree of textbook ownership varied form place to place. Schools located in urban or semi-urban showed the highest degree of textbook ownership. In a number of cases the availability of textbooks was not sufficient to meet the demand, and there appeared to be a general shortage of reference manuals for teachers. It was pointed out that frequent text revisions could lead to a reluctance on the part of parents to buy the latest edition if one of their children already has the earlier version. It appears that the grade four and five books are generally less readily available than those for the lower grades, perhaps due to the fact that priority is being given to the reprinting of the latter.

Students at schools located in AFPDs and those from ethnic minority groups were previously entitled to free health education textbooks supplied with UNICEF assistance, but that activity was discontinued in 1996. In special circumstances the government still provides texts to children in exceptionally difficult circumstances or as a reward for outstanding students. For example, MOET reports that 100,000 students in AFPDs received free health education textbooks in 1996. Officials from several of the provinces visited apparently were not aware that textbooks were no longer being distributed free of cost to students from ethnic minority groups.

The MOET annual report for 1996 indicates that bilingual health education textbooks for both teachers and students were produced in the Kh'me, Cham, Bana and H'mong languages and Vietnamese. It is to be noted, however, that the team did not see any textbooks of that nature.

The evaluation team was unable to obtain comprehensive information on UNICEF's role in the production of health education textbooks. It was reported that a health education textbook task force was established within UNICEF to co-ordinate inputs from the various concerned sectors, but details on UNICEF's inputs in terms of funds and technical assistance to the development, production and distribution of those textbooks were not immediately available.

Various expressions of support were received for the 'new methodology' associated with 'Life Skills' training, and a number of sources mentioned that they learned the importance of hygiene and proper sanitation through the new health education curriculum. All around support for SSHEP was expressed at all levels; improvements in hygiene habits were also regularly reported although no documentation illustrating those improvements was identified.

There are three basic types of health education teaching aids such as posters: 1- those produced and distributed by the SSHEP; 2- those produced by the MOH; 3- those that are part of the set of textbooks that students are expected to buy. There is widespread shortage of such teaching aids at the school level, and various reports from school teaching staff indicate that the range of topics covered by the posters is not sufficiently broad to deal with all of the topics explained in the textbooks. Typically, available posters are kept in the library or teachers' room and there seem to be few such visual aids on hand for permanent display in classrooms. Posters frequently are stored rolled-up and unlabeled, which makes rapid identification and retrieval difficult. Good quality posters locally produced by teachers and students were seen in at least one of the schools visited.

Various types of contests, such as drawing contests among students, are held to promote sanitation and hygiene. At some schools latrine maintenance is the responsibility of the students, an activity which simultaneously helps develop hygiene awareness and habits. A project supported drawing contest was held in 1992-93 but this activity was discontinued for lack of funds; expressions of interest in resuming this activity were received.

It appears that one or more agencies other than UNICEF assist the development of hygiene education and reports indicate that those agencies may not be following common guidelines.

3.1.4 Sanitation.

MOET document no. 2859/GDTC dated 14 April 1998 addressed to the provincial authorities, but not copied to MOH or CERWASS, provides some guidelines on latrine installation at schools:

1- For schools that are on the approved list UNICEF provides $400 (approx. D5 million) and MOET provides D3 million.
2- For schools that are not on the approved list UNICEF does not provide a contribution. If the required funds can be raised locally, then MOET will contribute D3 million to the cost of the installation.
3- Where a water source is available the standard septic tank latrine should be installed. In other areas the standard dry latrine should be installed.
4- The size of the latrine will be determined by the number of users.
5- Where conditions permit water should be provided by a dug or drilled well equipped with a handpump.
6- The cost of the installation will depend on latrine size and on the cost of materials as described in standard designs.

MOET separately provided the following elaboration on guideline no. one, above: In cases where the end-user community is able to raise on its own the entire funding component not covered by the $400 UNICEF contribution, then the MOET contribution of D3 million will not be awarded to that school. That amount will instead be allocated to another school. For example, if the total cost of the installation is equivalent to $530 UNICEF will contribute the equivalent of $400 which will leave a balance to be funded of $130. If the community is able to raise $130 for the purpose then MOET will not make any contribution. In any case funds allocated by MOET must be used for SSHEP purposes and cannot be put to use elsewhere. In this way it has been possible since 1991 to assist a total of 5968 schools, 2558 of which did not receive any UNICEF assistance.

The preparation of technical standards and designs for school latrines is said to be the responsibility of the MOH and more specifically of the Thai Binh Medical College. Those designs and specifications are forwarded to the provinces, but subsequent changes are sometimes made at the local level to better adapt them to local conditions and to make them acceptable to the Department of Construction. It was reported that such designs and specifications are valid only if designed or approved by the Department of Construction, a formality which is not always observed by SSHEP.

There are three basic types of standard latrine recommended for installation at primary schools, according to technical specifications and costs finalised in January 1993: 1- a six toilet unit for 1600 to 2000 users costing D9,267,557; 2- a four toilet unit for 1000 to 1600 users costing D7,266,283; 3- a two toilet unit for fewer than 1000 users costing D4,588,841. In the early experimental years UNICEF provided the equivalent of $1000 / installation, an input that was later reduced to $300 and more recently increased to $400 / installation. Inflation has resulted in increases in the actual cost of latrine construction and it appears that initiatives are taken at the provincial level to modify technical specifications in order to reduce the cost of the installation. Modifications include the installation that are smaller and less expensive than would normally be required to meet demand. Some provinces adopt the attitude that decreasing the cost of an individual latrine will leave some funds available for the construction of latrines at other schools.

The provincial authorities tend to prefer to construct latrine installations according to local designs rather than to follow those proposed by SSHEP. Provided that certain basic standard criteria are observed, local modifications can result in useful innovations: for example the installation at one school of glass windows in each of the toilet units allows more light to enter and makes the units more attractive. The view is that standard designs are sometimes inadequate in addressing all of the requirements of a particular school. There is a locally expressed need at the provincial level for a variety of technical designs for latrines that can be built to suit a range of conditions and requirements. The view of a number of PDOETs, and particularly of those in the Central Highlands, is that the centrally recommended latrine designs, which encourage the use of septic tanks, are not always appropriate. The range of standard designs for latrines should include choices for areas where a limited amount of space is available for construction of the facilities. Special arrangements and designs are required for the installation of latrines at the district's schools, which are prone to flooding.

All of the schools visited except one had made special preparations for the visit, for example by carrying out repairs and improvements, cleaning, painting and whitewashing of the installations. As a result it was difficult to assess the actual level of regular use of the facilities. On the other hand most of the sites visited did possess the installations expected, the two exceptions being Ta Lai and Binh Tan, and available for use by those who choose to make use of the facilities. The schools visited did not have copies of the technical specifications and drawings of the WATSAN installations. The availability of such documents would have provided some insight into the structure of the latrine's underground tanks. The single latrine which had not been prepared for the visit was situated at what is now a secondary school which at the time of installation in 1991 was an integrated school; that installation was functional but it showed signs of neglect.

The standard latrine design does not indicate arrangements for the safe disposal of urine and septic tank effluent. In practice the effluent generally runs off to the surface of the ground or into bodies of water. There may be cases where the tank is not sealed, thus enabling seepage into the ground but it was not possible to verify this possibility. It was reported that oxidation ponds have been installed experimentally at some sites. it often drains to fields or fish ponds.

Some of the SSHEP assisted schools are integrated or formerly integrated schools which often share facilities, with the result that the number of potential users is in fact larger than anticipated. This situation is not adequately reflected in project statistics. Most of the schools visited do not make special provision of WATSAN facilities for teachers and staff.

There appears to be no factual information on the number of students who use school toilets for defecation on a daily basis. An estimate given by one of the Principals interviewed put the number of users at 3% of primary school students and 1% of secondary students.

The SSHEP recommended well to latrine minimum distance ranges from 10 metres in the case of dug wells, to 40 metres in the case of tubewells.

There was little indication of regular use of soap for hand washing in most of the schools and households visited, and existing arrangements for garbage disposal at most of the schools visited were inadequate.

Continuing interest was expressed in the resumption of assistance to a deworming project for primary school students.

It was reported that in the early stages of SSHEP development UNICEF provided support to a revolving fund for household latrine installation. Funds were channelled through the PPCs who in turn delegated the responsibility for project implementation to agencies such as the WU. UNICEF discontinued the funding of this activity in 1996, but the funds initially invested are still revolving within the concerned communities. It appears that the latrines built under the scheme are not expected to observe any pre-determined standards of construction that would ensure a sanitary means of excreta disposal. The "cat latrines" seen by the team do not provide that possibility. They are not sanitary, as they are uncovered and allow access to large animals, birds, rodents and insects.

There appears to be a strong economic incentive for the agricultural community to use fresh or partially composted excreta as fertiliser. Fish pond latrines appear to be the most common means of excreta disposal in large areas of the Mekong Delta.

3.1.5 Water.

UNICEF assistance to SSHEP includes a water component but the MPO description of water related activities is both brief and broad, and does not provide a clear idea of the component's scope. In practice it appears that its main purpose is to ensure a reliable supply of water for the school's latrine, and that providing a source of safe drinking water at the school is a secondary requirement. According to the SSHEP Director MOET has issued guidelines on the provision of water at school for students, but in practice the actual arrangements are left up to the province or district or school.

It was observed at a number of sites that students are encouraged by the school authorities to carry drinking water from home even when there is a reliable water source at the school. Some students buy drinks at the school or take drinking water from households neighbouring the school. Much stress is placed on the

importance of drinking boiled water only. In a few of the schools visited, water was being filtered but apparently not boiled, a process which treats but does not disinfect the water. There appears to be little information available on the quality of the water being provided to SSHEP assisted schools.

Document no. 474/TTN dated 8 September 1998 from the CERWASS Director to all Provincial CERWASS offices and copied to MOET, PDOETs, UNICEF and DOLISAs provides some information on assistance to SSHEP:

1- On 31 August 1998 in a discussion between CERWASS and UNICEF it was agreed that UNICEF would assist the installation of a water point, including materials and labour cost, by providing an average contribution of D4 million / water point. This amount does not include the cost of an electric pump. This is for the 1998 plan period only.
2- The purpose of installing a water point at a school is primarily to supply water to the latrine. If conditions permit, then a dug well or shallow drilled well should be installed to supply water for the latrine and drinking water for the students. If conditions do not permit, then surface water from ponds or rivers should be used for the latrine.
3- The choice of technology should be based on the purpose of the water point (as described in para. 2), and financial capability. It is not necessary to install a large scale water system or to treat the water.

UNICEF confirmed that, in all likelihood for 1998 only, it will contribute the equivalent of up to D4 million towards the cost of installing a water point at each school, to cover the cost of labour, materials and possibly transportation if the cost is not too high. To this end UNICEF does not provide cash advances, but rather reimburses incurred costs. The materials, except for the electrical pump, are from the UNICEF stockpile and are, therefore, being provided in kind.

The implications of central UNICEF/CERWASS limiting their contribution to funds in the amount of D4 million towards the cost of installing a water point are unclear. It appears that the cost of other essential inputs, related for example to technical assistance and community involvement, were not taken into consideration.

It was reported that recipient schools are expected to contribute a sum of up to D600,000 to CERWASS for the installation of a water point at the school. No details on the purpose of the contribution were immediately available.

Availability of piped water in the latrine requires a storage tank large enough to ensure that pumping will not be required at unduly short intervals. The diameter of the pipe used to distribute water to the latrine should not be so large that it leads to unnecessary water wastage. This issue is of particular concern during the dry season when a number of schools reported that water shortages make the use of pour flush latrines difficult.

Some of the schools visited appeared to have felt compelled to install electric pumps to provide water for the latrine in situations where making use of the existing handpump would have been an adequate alternative.

In the mountainous areas to the North of Hanoi, beyond the Red River Delta, and in the Central Highlands there is little if any evidence of rainwater harvesting. The CERWASS representative seemed unaware of the existence of the large, two cum. water jars that have recently been introduced to the central and southern provinces; he was of the opinion that storing rainwater in sufficient quantities would be prohibitively expensive. There is a belief in certain areas that rainwater can cause dengue fever and malaria.

3.2 *Conclusions.*

3.2.1 Background and Planning: UNICEF

1. The School Sanitation and Health Education Project (SSHEP) is described in the MPO as a component of the WATSAN rather than as a project in its own right. (Note: for ease of description the component is nevertheless being referred to as a 'project' throughout this report).

2. The MPO does not make clear distinctions between the Government's long term school sanitation plan and that of UNICEF. This lack of specificity and the large number of strategies, goals, strategies, objectives and activities described make it difficult to sort out and identify the project's core strategy, objectives and outputs.

3. It is expected that 45% of the five year WATSAN target for SSHEP will have been reached by end-1998, and 71% of the 3,000 school target by the end of the plan period in the year 2000. When the target of 5,000 schools is adopted, mentioned as a possibility in the MPO, coverage drops from 71% to 43%. It was not possible to determine the level of progress in the area of health education (teacher training, textbook distribution, etc.) as related statistics are apparently unavailable.

4. The MPO estimates that UNICEF funding of SSHEP will amount to $7.4 million during the plan period. Financial information was not made available to the team and it was not possible to verify the rate of disbursement to date, nor current forecasts for the remaining two years of the programme. There is no clear indication yet of the level of UNICEF assistance to SSHEP during the remaining two years of the programme.

5. AFPDs may include communes that are relatively well-off when compared with communes in non-AFPDs, and vice-versa.

6. Focusing the investment of relatively large amounts of resources in specific communes may result in 'aid fatigue' unless the end-users themselves are clearly committed in advance to supporting the project.

7. It appears that during 1998 UNICEF will assist the installation of latrines at 700 schools and water points at 850 schools.

8. The possibility of UNICEF expanding its assistance to SSHEP for lower secondary schools does not appear likely for the near future.

3.2.2 Background and Planning: Government

1. The needs of satellite schools, which in terms of SSHEP are individual schools in their own right, are not being adequately addressed. UNICEF has to date assisted 26% of primary schools' main campuses but only 7% of the total number of main campuses and satellite schools combined.

2. It appears that the SSHEP assisted water points at schools serve mainly to provide water for the latrine. In a large proportion of the schools visited students are encouraged to carry drinking water from home, even when there is a water point at the school. At other schools arrangements are made by the school to boil or filter water for the students, while at other locations students buy drinks, use surface water or obtain water from households that neighbour the school.

3. MOH and CERWASS appear not to be directly involved in planning, but rather are expected to respond to requests from MOET. The role of both MOH and CERWASS appears primarily to be that of implementer rather than that of planner and facilitator.

4. There are three categories of primary school curriculum, designed to meet the needs of students who are able to attend school full time as well as those of students who are unable to do so. Health education is a compulsory subject only in the first category, designed for full time students.

5. The MOET list of 3,410 schools assisted to date by UNICEF does not accurately reflect the actual situation in a number of ways, but it is difficult to determine whether the actual number is higher or lower than the number indicated in the list . Some provinces build smaller and less costly latrines than planned and use left over resources to build latrines at additional schools which would result in an increased total. On the other hand certain districts choose not to participate in the project, which would lead to a decreased total, if the MOET list were not amended accordingly.

6. The inability of end-user communities to raise the funds they are committed to raise could mean that the installation cannot be completed unless the provincial authorities divert, for the purpose, funds already committed to other projects in that province.

7. There is concern at the provincial level that UNICEF assistance is not sufficiently targeted at, and accessible to, the poorest communes. There is no indication that 'New Economic Zones' are given special consideration despite the difficult conditions that typically exist in those areas.

8. The provinces propose a list of schools for which they think SSHEP assistance is a priority but the final selection is made at the central level. It appears that the provinces are not directly involved in the selection of administrative areas to be assisted, such as AFPDs. A significant proportion of provincial officials met described a need on their part for more clarity in SSHEP objectives and processes.

9. It appears that the provinces are not obligated to implement SSHEP activities at all the schools that appear on the centrally approved list, but in practice it is unlikely that a province would reject an offer of funding by unilaterally decreasing the number of schools to be assisted. If MOET approves a list of 10 schools then it is likely that the province concerned will accept to implement activities at those 10 schools.

10. It appears that UNICEF encourages the implementation of activities in AFPDs only but that under special circumstances activities can also be carried out in non-AFPDs.

11. MOET has a set of SSHEP site selection criteria which it has communicated to the provinces but the latter do not always observe them to the letter, and tend to develop their own sets of criteria.

12. The SSHEP needs of individual schools are not sufficiently taken into consideration. Both the technical WATSAN requirements and the health education needs vary from site to site.

13. Parents' Associations play an important role in supporting the school in general and SSHEP in particular.

14. The SSHEP Director has made 16 important recommendations on UNICEF assistance to SSHEP during the 2001-2006 plan period (see above).

3.2.3 Management: UNICEF

1. The MPO indicates that a revolving fund for sanitation would be one of the programme's activities but the fund was discontinued in 1996.

2. Non-formal health education is also included in the MPO but it appears that the level of priority allocated to this activity has been significantly reduced.

3. Existing SSHEP monitoring mechanisms do not provide an up-to-date and accurate description of the type and level of UNICEF assistance to the project.

4. Existing funding arrangements whereby UNICEF funds are transferred to the provinces in the second half of the year and whereby the provinces must submit accounts for those funds by early December does not provide a sufficiently long time frame to address what are in reality long term development issues.

5. Current funding arrangements whereby a flat amount is allocated to each school, $400 / school in the case of latrine installations, creates the impression that an emergency situation is being addressed when

in fact the issues concerned are more closely related to long term development. It would be desirable for such funding to be provided in response to a specific need expressed by the community itself.

6. The establishment of a UNICEF supported fund at the community level would enable the commune and school leaders to procure required WATSAN supplies and equipment directly from the supplier. There would be a need for technical assistance to the community in helping determine the most appropriate technology (both water and sanitation) for the community.

7. The creation of a co-ordination mechanism for external support agencies who assist SSHEP would likely result in a strengthening of the project and a more focused approach.

8. There is a perception at the provincial level that there is an insufficient degree of co-ordination between the four main SSHEP partners: MOET, MOH, CERWASS and UNICEF.

3.2.4 Management: Government

1. Reports indicate that over the 1991-95 SSHEP period 16% of the total number of schools in the country (main campuses) were covered. UNICEF and government each covered 20% of related costs, while the remaining 60% was raised by the end-user communities. The UNICEF contribution was equivalent to $1,595,800. Health education textbooks and posters were produced, training courses were conducted, and health education was adopted as a core curriculum course in 1995. In 1996 UNICEF's focus shifted to AFPDs. Bilingual textbooks and educational aids were reportedly produced for four ethnic minority groups and 290 schools were given WATSAN coverage. In 1997 a survey of installations made to date was carried out and additional textbooks were developed and produced. Training courses for teachers were carried out and 350 WATSAN installations were put in place. In 1998 textbook development and production continues. Latrines will be installed at 700 schools and water points at 850 schools. These project related achievements since 1991 have led to considerable and significant improvements in the sanitation and hygiene situation at primary schools country wide.

2. There is a project management structure in place which goes from the national level down to the school level. The structure functions effectively, although additional decentralisation from national level to province and from Provincial Management Board Chairperson to Board Vice-Chairperson would likely make the structure more efficient. Also, increased involvement of MOH and CERWASS at the planning level would likely lead to a more uniform project plan.

3. Recently established provinces require special attention and assistance, as many of the technical and personnel resources probably remained with the better established of the provinces at the time of separation.

4. There is a perception among Provincial Management Board Members that they are generally not sufficiently well informed of project funding amounts and mechanisms, despite the fact that related information is regularly communicated to the provinces by MOET. There is potential for project related training activities at the provincial level.

5. A is a view among some Provincial Management Board members that it would be desirable for water component funds to be managed by PDOET or by the school itself rather than by CERWASS as is currently the case.

6. MOET's level of funding of SSHEP, estimated at the equivalent of $163,000 in 1998 alone, indicates the high level of commitment of MOET to the project.

7. Despite the often expressed difficulties in mobilising project funds locally and the need for increased external funding for the project, it appears that it is generally possible for communities to mobilise funds in the event that external funding is unavailable. Perceived inability to raise funds locally may be one of the reasons why certain schools selected for SSHEP assistance choose not to participate in the project.

8. Firm commitment of funds from PPC budgets to SSHEP would be desirable (it was reported that PPCs have yet to include such financing in their budgets).

9. It is possible to operate successful loan schemes but with a considerable amount of effort and commitment.

10. Further experimentation within SSHEP and documentation of the experiments' results would be desirable.

11. Private contractors who are sufficiently capable and experienced in the area of WATSAN installation are an important project resource. It may be desirable for CERWASS to take on less of an implementer's role and more of the role of a facilitator, particularly with regard to assisting the sector's private enterprise.

12. The two project related questionnaire surveys carried out by MOET are an important initiative and careful analysis of the information obtained as a result would no doubt produce findings which could lead to project improvements.

13. The dividing up of property on which WATSAN installations have been built can mean that one or more of the institutions on the property will no longer have access to the facilities.

14. Comprehensive and detailed analysis of SSHEP progress, achievements and constraints to date would be timely and useful.

3.2.5 Health Education

1. Health education was reportedly begun in primary schools in 1987 and UNICEF assistance to the activity began in 1992. There is not yet any such curriculum for secondary schools, although some courses include health related components.

2. The level of awareness of the need for proper hygiene ranges from medium to high in the schools visited, but awareness within the community in general appears to be relatively low.

3. Lack of mastery of the Vietnamese language is likely to be a constraint for most students from ethnic minority groups in health education classes, and there may also be a language barrier between those students and their teachers when the latter are Kinh.

4. Health education textbooks for students were available at all sites visited but the degree of ownership ranged from 20% in some ethnic minority areas to near 100% in some of the semi-urban centres visited. There is a tendency for grade four and five textbooks to be in short supply, as is the case for teachers' manuals and reference texts.

5. UNICEF assistance to free textbook distribution to students from ethnic minority groups was discontinued in 1996 but provincial level officials are generally unaware that this option for minority group students is no longer available.

6. The production of bilingual Minority Group Language / Vietnamese health education textbooks, posters and other educational aids is a timely and worthwhile initiative, but the team did not have the opportunity to look at any of those books and materials.

7. The production of similar materials in Vietnamese has been carried out on a large scale with UNICEF support; all primary school students in the country are expected to now have access to those materials. Unfortunately the team was unable to obtain specific information on the level of assistance to this activity in terms of technical and financial inputs.

8. Posters that demonstrate health related themes are typically in short supply. Most schools visited did have a few such posters, but they generally are not displayed in classrooms. They tend to be stored in such a way as to be difficult to identify and retrieve. In at least one school good quality posters were produced at the school itself by the teachers and students.

9. Expressions of support for SSHEP and of the 'new teaching methodology' were received from officials and teachers at all levels, and it was frequently mentioned that changes in hygiene related behaviour

have been noticed since project inception. It is to be noted, however, that those changes have not been documented.

10. A considerable amount of interest was expressed in the resumption of UNICEF support to health related contests that include, for example, health related drawings and paintings.

3.2.6 Sanitation

1. Current SSHEP guidelines encourage the installation of septic tank latrines. They also encourage communities to contribute as much as they can to the cost of the installation; limited MOET funds can then be used to support the construction of latrines at schools where it is not possible to raise funds locally. This redistribution of resources has enabled the provision of services to 2,558 schools without any assistance from UNICEF.

2. It appears that technical designs and specifications for WATSAN installations are not officially valid unless either prepared or approved by the Department of Construction.

3. It also appears that changes are commonly made at the local level to the standard latrine designs produced in Hanoi in order to adapt the design to local conditions. Such changes can be beneficial provided they observe certain basic technical considerations. For example, saving funds by building a two toilet latrine where potential demand would normally require a four toilet unit can be counter productive in the long run. It was suggested that if a roof were built over the urinal area it would make it more convenient in the rain, and that water tanks should be built higher in order to provide additional water pressure.

4. There is a requirement for the dissemination of technical information on a variety of technical choices and designs to enable the end-users to make an informed choice of the type of latrine that is best suited to the prevailing conditions in that particular area. Septic tank latrines are not appropriate for use in all situations, particularly so in areas where there are water shortages at certain times of the year. Flood prone areas require their own particular type of latrine.

5. Two (11%) of the 19 sites visited did not have latrine installations, while available lists indicated that latrines had in fact been built, or were being built, at those schools. The first, in Ta Lai, is on a 1998 list of 50 schools that will receive assistance only if the required UNICEF supplementary funding becomes available; the second, at Binh Tan was not built because the community chose not to participate in the project.

6. Septic tank latrines need to incorporate an arrangement that enables the proper disposal of urine and septic tank effluent. A water supply needs to be provided simultaneously with the construction of the latrine.

7. In cases where secondary and primary schools share premises, facilities are required by both schools. Consideration should also be given to providing facilities for teachers and staff.

8. The availability of reliable estimates of the number of students use a school toilet for defecation each day would be of use to project planners in helping them determine optimum latrine size.

9. It is not normally possible to recommend a safe minimum latrine-to-well distance without knowing the sub-surface soil conditions at the location where the latrine is to be built. Distances can vary greatly depending on soil porosity and height of water table.

10. There is a tendency to build school latrines in locations that are out of the way and out of sight, and sometimes of difficult access to small children. It is desirable to locate facilities where they are relatively central and easily accessible, provided they are kept clean and do not produce objectionable odours.

11. It appears that soap is not regularly used for hand washing in the schools and households of the communities visited by the team.

12. There is expressed interest in resuming a de-worming project for primary school students.

13. Although an existing revolving fund scheme for the promotion of household latrines was discontinued in 1996, the MPO specifically mentions this as an activity to be carried out during the plan period, and its resumption would in all likelihood be of benefit to the programme.

14. Additional information on the economic demand for fresh or semi-composted excreta used as fertiliser or for fish raising would be of interest to project planners.

3.2.7 Water

1. It appears that the main purpose of the water component of SSHEP is to provide water for the latrine rather than for drinking water.

2. Some schools discourage students from drinking water directly from the school's water point because it is not boiled, while other schools arrange to boil the water and place it in containers in the classrooms. Recent guidelines from CERWASS mention that it is not necessary to install a water treatment unit at the school's CERWASS supported water point.

3. A number of provincial CERWASS representatives mentioned that it would be preferable if UNICEF could provide project funds in advance, but it is UNICEF's current policy that it only provides reimbursement for costs once they have been incurred.

4. UNICEF's across-the-board contribution of D4 million / well installed in 1998 does not take local variation in cost into account, and does not directly respond to an expressed need from the community itself.

5. It was not possible to determine whether the reported contribution of D600,000 / well to CERWASS from the recipient community is subsequently incorporated into the overall SSHEP budget.

6. Technical designs need to include features that prevent unnecessary water use and wastage. This consideration gains in importance at those times of year when there are water shortages.

7. The decision to upgrade technical installations, for example by replacing handpumps with electric pumps, is in general best left up to the end-users themselves.

8. The promoting of rainwater harvesting would be useful in those areas where communities are largely familiar with the possibility and its related techniques.

3.3 *Recommendations.*

3.3.1 Planning: UNICEF

1- Immediately begin the planning of UNICEF assistance to SSHEP for the 2001-2005 plan period to ensure that the assistance will be more demand-responsive, more supportive of capacity building, will have better established links with other sectors and will be less directed at service delivery. The process followed in developing the plan should include the following 10 categories of activity:
- Analysis of the Sanitation component of the WATSAN sector.
- Stakeholder analysis (a "stakeholder" is any party that has a vested interest in the programme).
- Problem analysis (a "problem" is an existing negative state, not a lack of resources).
- Analysis of objectives (an "objective" is the removal of an identified problem).
- Analysis of risk and of alternative strategies.
- Programme organisation and implementation.
- Analysis of preconditions for economically sound and sustainable development.
- Summary of the programme's components in a logical framework analysis (LFA) matrix.
- Development of a programme work plan.
- Follow-up, reporting and phasing out.

2- Include the relevant aspects of each of the eight main water resources management (WRM) principles in future SSHEP plans.
Principle 1: Water resource and catchment protection are essential.
Principle 2: Water allocation needs to be agreed between stakeholders, within a national framework.
Principle 3: Efficient water use is essential and often an important water source.
Principle 4: Management needs to be taken care of at the lowest appropriate level.
Principle 5: The involvement of all stakeholders is required.
Principle 6: Gender balance is needed, as activities relate to different roles of men and women.
Principle 7: Skills development and capacity building are the key to sustainability.
Principle 8: Water has both an economic and a social value.

3- Carry out sector studies at the provincial level to obtain additional information on population distribution, water availability, levels of coverage of both water and sanitation, technological requirements, financial requirements, etc. The resulting information would serve as a more adequate basis for future SSHEP planning.

4- For the 2001-2006 plan period define SSHEP as a project in its own right, with its own specific objectives, rather than as merely a component of the broader WATSAN Programme. Ensure that to the extent possible the project avoids the 'masterplan' concept and allows more latitude for local inputs into the planning process.

5- Clarify the distinction between SSHEP and the Government's overall plan for sanitation. They are not the same, as SSHEP is in fact one of several components of the overall plan.

6- Reconsider existing SSHEP targets for the 1996-2000 plan period and revise downwards if it appears unlikely that the targets will be reached.

7- Once the targets have been revised, indicate specific budget components for the remainder of the plan period and the level of UNICEF funding that can be expected over that two year period.

8- Ensure that SSHEP activities for 1999 and beyond target the poorest communes.

9- Involve the potential recipient communes more closely at the planning stage, through PRA exercises for example, to determine more closely their level of interest in the project and their potential commitment to it.

10- Redesign UNICEF's funding mechanisms so that the 'water' and 'sanitation' components are better synchronised and co-ordinated.

11- For the next plan period, consider the possibility of expanding SSHEP to include lower secondary school.

3.3.2 Planning: Government

1. Acknowledge and address the needs of satellite schools.
2. Ensure that safe drinking water is available at school, in addition to ensure that there is a reliable source of water for the latrine.
3. Involve MOH and CERWASS more closely in the SSHEP planning process, and encourage CERWASS to take up more of a planning and facilitating role and less of a role as an implementer.
4. Introduce health related messages into the two of the three curricula which at present do not include such messages.
5. Improve SSHEP monitoring mechanisms so that they will more accurately reflect project progress and constraints.
6. Ensure that project completion does not necessitate the diversion of funds from other province-level projects.
7. If not already the case, ensure that the special needs of 'New Economic Zones' are taken into account when areas of focused assistance are being defined.
8. Ensure that concerned officials at the provincial level and below clearly understand SSHEP objectives and processes, and that they are more closely involved with the selection of areas of focused assistance.
9. Involve provincial officials more closely in determining the *number* of schools to be assisted in any given year.
10. Clarify the UNICEF policy on AFPDs and the extent to which SSHEP activities can take place in non-AFPDs.
11. Ensure that site selection criteria observed at the provincial level are compatible with the MOET set of site selection criteria.
12. Assess the requirements of schools individually and design SSHEP WATSAN assistance in such a way as to address those specific requirements.
13. Acknowledge the important role that the Parents' Associations play in support of SSHEP and encourage their continued involvement.
14. Discuss and address the 16 specific recommendations made by the SSHEP Director with regard to UNICEF assistance to SSHEP during the next plan period: 2001-2006.

3.3.3 Management: UNICEF

1. Move slightly farther away from the current UNICEF role, which has a significant operational component, towards a greater role in national capacity building for SSHEP. The result would be that the government would take on responsibility for a larger share of the cash, supply and equipment requirements of the programme, while UNICEF would concentrate more on the development of the human infrastructure.
2. Consider the possibility of reintroducing a revolving fund for sanitation, and regularised support to non-formal health education.

3. Improve existing SSHEP monitoring mechanisms so that they provide an up-to-date and accurate description of the type and level of UNICEF assistance to the project.

4. Acknowledge that SSHEP is a long term development project which is constrained by existing UNICEF funding mechanisms which only allow for periods of implementation and accounting that are shorter than six months, and make alternative arrangements which are more flexible and accommodating.

5. Provide funding which responds to a need expressed in writing by the potential target community. The current arrangement is one by which the target community responds to a fixed amount of funds made available by an external source.

6. As an experiment, establish a small fund in a few selected communes whereby the commune would be free to spend from the fund to buy supplies and equipment, or to pay costs incurred by them in the course of providing WATSAN facilities to their school. Choice of technology and materials would be made by them, based on technical assistance from the province's technical departments as required.

7. Investigate the possibility of establishing a co-ordination mechanism at the national level for external support agencies interested in SSHEP.

8. Respond to the provincial level perception that there is an insufficient degree of co-ordination between the four main SSHEP partners: MOET, MOH, CERWASS and UNICEF.

3.3.4 Management: Government

1. Continue the concerted efforts that have been made over the past seven years in the context of SSHEP. Significant achievements have been recorded and further important achievements of a similar nature can be achieved in the future.

2. Consider the possibility of providing the Provincial Management Board Vice-Chairperson with greater authority to independently manage day-to-day SSHEP affairs.

3. Provide additional and special technical support to the newly formed provinces.

4. Discuss the provincial level suggestion that in future the 'water' component of SSHEP be managed by PDOET rather than by CERWASS.

5. Make the full PPS-related accounts available for reference to all stakeholders. It should be possible for any interested stakeholder to find out how much the system cost, what construction materials were used, where the required funds, supplies and equipment came from, how much of the total PPS cost has already been paid and how much remains to be paid, how much is collected from water-use fees, how much is spent on O&M and how much is left over to cover the cost of depreciation and the provision of new services.

6. Continue to encourage the target communities to raise funds locally in support of SSHEP activities at their school.

7. Encourage PPCs to dedicate specific components of their budgets to SSHEP.

8. Develop an active experimental component within SSHEP, with clearly defined objectives and reporting of results. Learning from experience gained both within Vietnam and in other countries would be included, and the local testing of designs adopted in other countries would be both interesting and useful. A review of existing literature could be a component of the experimental project. The component could usefully study local traditions and practices related to sanitation and hygiene, and experiment with ways of *reusing* excreta instead of *disposing* of it.

9. Encourage and support the involvement of private contractors in the implementation of SSHEP WATSAN activities.

10. Discuss the analysis of the results of the two SSHEP surveys carried out by MOET, and adapt findings to future SSHEP activities as appropriate.

11. Develop a process whereby SSHEP progress, achievements and constraints are analysed and not merely recorded.

12. Discuss the implications of property rights on right of access to WATSAN installations at schools.

3.3.5 Health Education

1. In areas where health education textbook ownership is very low, investigate the reasons and take measures to increase the rate of availability and ownership.

2. Ensure that all concerned officials at the provincial level and below are aware of the fact that health education textbooks are no longer distributed free of cost to students from ethnic minority groups.

3. Study the distribution pattern and availability of bilingual health education and posters in ethnic minority areas. The evaluation team did not have the opportunity to see any of those materials.

4. Carry out an assessment of UNICEF's involvement to date in the development and production of health education textbooks, posters and other educational aids, in terms of technical and financial inputs.

5. Ensure that health related posters are more readily available at schools, and in larger quantities. Support the local production of posters and other educational aids.

6. Discuss the possibility of resuming assistance to health education related contests.

3.3.6 Sanitation

1. Clearly determine the role of Departments of Construction in designing and developing specifications for WATSAN installations at schools.

2. Ensure that local adaptations of the standard design still maintain certain basic technical considerations. Document beneficial adaptations and disseminate them to other provinces.

3. Acknowledge the fact that septic tank latrines are not necessarily the most appropriate type of installation for all locations, and leave the final choice of technology up to the end-users. Ensure that they have access to the technical assistance they may require in making that choice.

4. Ensure that urine and effluent from septic tank latrines is safely disposed of. From a health standpoint septic tank effluent is almost as dangerous as raw sewage and should on no account be discharged into surface drains, canals or streams without further treatment.

5. When secondary and primary schools share premises provide WATSAN facilities for both. Consider the possibility of providing facilities for teachers and staff.

6. To the extent possible, assess the soil and water table conditions at the site in order to determine the minimum well-to-latrine distance.

7. Locate latrines in an easily accessible place.

8. Encourage the increased use of soap for hand washing, both in schools and in households.

9. Consider the possibility of resuming assistance to a de-worming project for students, and to a revolving fund scheme for the promotion of household latrines.

10. As part of the proposed experimental component of SSHEP (see above), further assess the demand for fresh or semi-composted excreta used as fertiliser or for fish raising.

Stupid !

3.3.7 Water

1. Ensure that the SSHEP water point at schools is seen as a source of drinking water as well as a source of water for the latrine, and that water from that source is treated and disinfected as may be necessary and made available to students for drinking.

2. Provide an indication to MOET and CERWASS of potential UNICEF funding, if any, to be made available to the SSHEP 'water' component in 1999 and 2000, and during the 2001-2006 plan period.

3. Determine whether the sum of D600,000 which is reportedly paid to CERWASS by the school for the installation of a water point, is incorporated into the SSHEP budget.

4. Leave it up to the end-user school to determine whether their facilities should be upgraded, for example by replacing a handpump with an electric pump.

5. Disseminate information on rainwater harvesting in areas where the technique is not widely practised, and encourage its use.

3.4 Lessons Learned.

1. There is a real need for projects such as SSHEP and despite the significant achievements to date much remains to be done.

2. Defining SSHEP as a project in its own right, with a single clear objective, and specifically defined outputs, activities and resources would make it easier to implement and monitor. Making the project clearly distinct from the Government's sanitation activities would also help clarify its purpose.

3. Allowing greater leeway for bottom-up planning of SSHEP would make the project more responsive to locally expressed needs, and greater stress needs to be placed on meeting the needs of the poorest communes.

4. Project targets appear to have been overly ambitious.

5. A firm indication, provided well in advance, of UNICEF resources to be made available to the project would be helpful to government planners, and greater flexibility in UNICEF's accounting procedures would be helpful to the long term development aspects of the project.

6. Figures used do not adequately reflect the scope of the needs of satellite schools.

7. It must be recognised at all levels that the school's water point is meant to provide water for drinking as well as for the latrine.

8. Project monitoring needs to be more accurate and comprehensive.

9. Concerned officials at the provincial level and below need to be more closely involved with the project planning process.

10. Informal organisations such as the Parents' Association can and do play an important role in support of SSHEP.

11. The project appears to be too narrowly focused on the technical aspects of sanitation and health education at the expense of other essential components such as experimentation / R&D, revolving funds and non-formal education.

12. There appears to be room for improved co-ordination among the four main SSHEP parties, and among the external support agencies interested in the project.

13. The newly formed provinces at times do not receive an adequate level of technical support.

14. Poor communes are able to raise funds locally if they are convinced of the importance and relevance of the activity they are funding.

15. Private contractors are an important project resource.

16. A greater degree of analysis of the various aspects of SSHEP development to date would be helpful and useful.

17. Changes in property ownership can affect access to SSHEP WATSAN installations.

18. Bilingual health education materials do not appear to be widely available in ethnic minority areas despite the fact that such materials have reportedly been produced in significant quantities. Students from ethnic minority groups are often at a disadvantage because of their lack of mastery of the Vietnamese language.

19. UNICEF's role in the production and distribution of health education materials is not easily determined.

20. The availability of health education materials is not uniform across the country.

21. It may not be necessary to produce standard latrine designs for dissemination throughout the country, but it is necessary to ensure that certain basic considerations are always observed. For example all latrines must safely dispose of excreta and effluent regardless of the design used.

22. Soap does not appear to be widely used for hand washing at schools and in households and the increased use of soap for that purpose needs to be encouraged.

23. There remains a strong demand for excreta as fertiliser and for fish raising purposes, a fact which needs to be kept in mind when various sanitation alternatives are being considered.

24. There are areas of the country where rainwater harvesting could be better exploited as a source of drinking water.

4 Provincial Level Case Studies

4.1 Case Study 1: Chieng Coi School (Son La Town, Son La)

4.1.1 Observations and Findings.

Table 1: Facts on Chieng Coi School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
1	8	627*	65	low	high	Y**	Y***

* Divided among the eight campuses.
** Adequate, but should preferably be a four toilet unit. At present lacks a reliable source of water.
*** The source itself is adequate but it is at present not functioning. The pump requires immediate repair.

4.1.1.1 Background, Planning and Management.

Chieng Coi School is located five kms. S-W of Son La Town, which is 310 kms. West of Hanoi. The school was established in 1959. It is one of five schools in the province assisted by UNICEF in 1994. Some of the original classrooms are to be demolished and replaced by a two storey 15 classroom block. The school is "integrated", with half of each school day dedicated to primary and half to secondary school. The water and sanitation facilities were completed in 1994.

There are a total of 627 students, of whom 590 are from ethnic minorities. 271 students are female and 356 are male. There are 50 teachers for 30 classes in 14 classrooms.

Although the commune is poor, parents make significant contributions to the successful running of the school. Nevertheless the school is reluctant to ask the parents to contribute additional funds for maintenance purposes, which is a requirement, as external funds are unavailable for the purpose. It was reported that a high proportion of households have private dug wells for which the families were able to pay themselves at a cost of up to D 2 million / well. Some families have access to two ponds known as 'mo nuoc', one of which is used for drinking and the other for washing.

The criteria used in the province for selecting schools for UNICEF assistance are: 1- the ability of the end-users to pay; 2- the existence of a water source to which the school has access; 3- balanced geographical distribution. The PDOET works with the respective DPCs in preparing a proposed list of project schools, which is submitted to the PPC who, in turn, forward the list to the central level for final approval.

At least some of the schools initially selected for assistance declined to participate in the project because they thought they would be unable to raise the required local project funds.

At first UNCEF assistance provided through MOET towards the cost of latrine construction was in kind, mainly in the form of cement and rebars (iron reinforcing bars). Transport was provided by the province to collect the materials at Haiphong Port and approximately 50% of the supplies, particularly the cement, was damaged or lost before reaching Son La. This loss, and the cost of transportation, was recovered locally, from provincial, district and commune budgets.

Since 1996 UNICEF assistance has been in the form of cash instead of kind, transferred to the province through MOET. The cash enables the province to procure locally the supplies that are required for latrine construction, such as cement and rebars. In 1996 and 1997 payments were made in two instalments, each worth 50% of the total. In 1998 the full payment was made in one instalment.

From 1994 to 1997, when UNICEF funds were received at the provincial level, the district accountant was informed of the total amount of funds allocated to that district. One third of that total was then advanced by the province to the district (it was unclear at what stage the remaining two-thirds of the total funds was transferred). In 1998, 50% of the funds received were immediately transferred to the district. When this amount is accounted for the remaining 50% will be transferred.

The province has no mobile technical teams for the construction of latrines. Local contractors / builders need to be found by the commune, and the group that approves the chosen contractor includes the Principal and the Commune Chief.

There are no School Inspectors as such; this role is filled by provincial education officers who carry out both announced and unannounced inspection visits. Cross-district inspections (districts inspecting neighbouring districts) also take place.

A total of 15 of the province's schools were proposed for UNICEF assistance in 1998, only 10 of which were actually approved and funded.

UNICEF is the only external support agency that is involved with WATSAN for schools in the province.

Table 2: UNICEF's contribution to Son La through MOET since 1994.

Year	Cash	Cement & Rebars	# of Schools	Total ($)
1994		$300 / school	5	1,500
1995		$300 / school	8	2,400
1996	$300 / school		20	6,000
1997	$400 / school		6	2,400
1998	$400 / school		10	4,000
Total			49	16,300

4.1.1.2 Hygiene Education.

Discussions with students from different grades indicated that their level of awareness of the need for proper hygienic practices was good. They understood the importance of brushing teeth, washing with soap and of drinking clean water. Several reported having access to pour-flush latrines at home. There is one 40 minute health education class per week.

Some of the parents interviewed also were aware of the importance of hygiene, while others were not. There was an outbreak of conjunctivitis in the community at the time and those interviewed were unable to explain the cause. One parent whose son had malaria did not know its cause. There was little evidence of extensive use of soap in the community, and the general appearance of the children in the village indicated infrequent bathing and clothes washing. It was reported that no regular health education campaigns are carried out in the community.

At the provincial level textbooks are ordered on the basis of demand from schools and other education-related organisations, but the quantity ordered usually does not meet the demand, as those who place the order prefer not to risk having an excess stock of textbooks on hand. The province places orders directly with the publishing house in Hanoi, and pay 30% of the total cost in advance. Students buy the books directly from the teacher.

30% of the students in grades one to three at this school reportedly receive books free of charge from DOET, and approximately 65% of the students have health education textbooks. It was reported that the books would be unavailable to the remaining 35% of the students even if they were able to afford them. Some students said they shared their books with their friends. One health education textbook reportedly costs D 4,000, although it is to be noted that these books are included in the set of books that the student needs to buy, at a price that ranges from approximately D 15,000 to D 20,000 throughout the country. One teacher interviewed said that only two of 20 grade five students had texts. Some of the texts on hand are the earlier version, while some students have the revised edition.

Some teachers had reference textbooks, while others were using students' textbooks for reference. Some parents said they cannot buy texts because they are not available in bookstores, while some of the students said they were able to buy books locally.

No educational materials such as posters were seen on display in classrooms but there were a few in the temporary library, which did not give the appearance of being regularly used. No such materials are produced locally.

4.1.1.3 Sanitation.

The latrine block was installed in 1994 at the back of the compound of the school's main campus. The quality of construction is good but a number of essential features are lacking: urine drains to the surface through openings in the back wall, and there is no reliable water source. It is of the two-seater septic tank type, with no doors on the toilet units. The unit was clean and there was water in the tanks located in the urinal area, but it gave the impression of not being extensively used. One class was observed urinating in the open during a break from class. Some students reported not using the latrine because they did not like the smell. Students have not been given a role to play in the maintenance and upkeep of the latrine. No provision was made during construction for hand washing facilities. The cost of the latrine was D 6.3 million (D 2 million from MOET; D 2 million from the CPC; D 2.3 million from the parents).

None of the seven satellite campuses have proper water or sanitation facilities.

4.1.1.4 Water.

The water installation at the school is a dug well put in place in 1994 by CERWASS with an in-kind contribution of D 3 million. The well is located five metres from the latrine block. The level of the water in the well was approximately five metres from the surface, and it had a concrete cover. The Number Six handpump which had been installed on the well to extract water from it had been removed, reportedly in June 1998, and only the pipe remained (Instead of the Number Six pump, CERWASS recommended the use of the "HD-90" pull-push handpump, manufactured at the Mai Lam Factory in Hanoi). There is a small concrete tank nearby intended for storing well water. The well was not in use, and there was no other source of water at the school. No provision was made for rainwater harvesting. Many of the students apparently carry water from home in small plastic bottles, while others take water from the well of a teacher who lives just outside the school's compound.

It was reported that dug wells were not widely used in the commune until the well was installed at the school, but now up to 90% of the households have installed their own well. This is interpreted locally as being in response to the appropriateness of the school's well. Because of the difficult geological conditions that prevail, CERWASS takes a variety of techniques for providing water into account, but they find that they are sometimes unable to find appropriate techniques for treating the water that they provide.

CERWASS officials held the view that reservoirs capable of storing water for the duration of the six month dry season would be prohibitively expensive. They appeared unaware of the possibility of limiting the use of rainwater to drinking and using water from other sources for other household purposes, or of the availability of low cost containers, such as the two cum ferro-cement jar that is in use elsewhere in the country.

4.1.2 Conclusions.

1- It is possible to raise project related funds in poor communities when the resulting benefit is readily perceived.

2- The criteria used for selecting schools for UNICEF assistance in Son La vary from those used in other provinces.

3- Some schools do not receive UNICEF assistance because the community is unable to raise the required local contribution.

4- The provincial authorities prefer assistance in cash rather than in kind.

5- In 1998 the number of schools proposed by the province for assistance by UNICEF was 50% higher than the number for which assistance was approved.

6- The quantity of health education textbooks available does not always match the level of demand by the students and teachers.

7- There appear to be few effective health education campaigns within the community. The level of understanding of hygiene at the school is good, but within the community itself it appears relatively low. Unhygienic practices were observed throughout the community.

8- At 65% the proportion of students who have the required textbooks is relatively low, both in the absolute sense and when compared with other provinces. Not all teachers have the teachers' reference textbook.

9- The parents of students who already have an earlier version of the health text. may be reluctant to spend additional money to buy the later edition of the same textbook.

10- The quantity of teaching aids such as posters on hand is inadequate.

11- The septic tank latrine at the school will serve a diminished role until a reliable source of water for the latrine is found.

12- The quantity of teaching aids such as posters on hand is inadequate.

13- The existing well is in good condition and could easily be rehabilitated so that it once again serves as a source of water for the school, including the latrine.

14- The school well apparently served as a catalyst in encouraging the community's householders to install similar wells of their own.

15- There is little if any interest and understanding of rainwater harvesting, unlike the situation in certain other parts of the country.

4.1.3 Recommendations.

1- Repair the pump at the well so that there will once again be a source of water for the latrine, and for drinking, provided it is first disinfected.

2- Support and encourage initiatives directed at increasing the proportion of students who own health education textbooks, and of teachers who have access to health reference manuals.

3- Increase the availability of teaching aids such as posters at the school.

4- Encourage non-formal hygiene education campaigns and other activities within the community.

5- Consider solutions to the unavailability of WATSAN facilities at the satellite schools.

6- Propagate information on the usefulness of rainwater harvesting in areas where rainfall rate is sufficiently high.

7- Find ways to encourage the end-users to accept further financial responsibility for project activities.

8- Introduce a recommended set of standard criteria to guide the provinces in their school selection process.

9- As appropriate, continue providing assistance in cash, rather than in kind, in cases where the process meets both government and UNICEF accounting requirements, and where those accounting mechanisms are in place and functioning effectively.

4.2 *Case Study 2: Ta Lai School (Moc Chau District, Son La)*

4.2.1 Observations and Findings.

Table 3: Facts on Ta Lai School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
2	4	518	80	low	medium	N*	N*

* No WATSAN facilities at the school. Funding pledged but not secured. Requires firm commitment from central level.

4.2.1.1 Planning and Management.

Ta Lai School is located 50 kms. N-W of Moc Chau Town or 240 kms. West of Hanoi. Many of the residents of the community were resettled there in the early 1980s when work was progressing on the Song Da Hydroelectric Project and residents of the valley had to be moved to higher ground. Ta Lai Commune was formed in August 1998 when Na Muong Commune was divided into two. Formerly, only grade five classes were held at Ta Lai School and grades one to four were held at satellite schools. Since the new commune was established grades one to five are held at Ta Lai. A new two classroom building was completed in December 1997. The school has no proper WATSAN facilities.

The school has 518 students in four campuses, and 21 teachers.

The school's main campus consists of the original block of three classrooms and the new two classroom block. The local authorities mentioned that the quality of construction of the latter was below standard, built by a contractor selected by the Song Da Project Authorities. The school yard, which is unfenced, was being levelled by a bulldozer at the time of the team's visit. There are plans to install a latrine and a drilled well at the school. Those facilities will also be used by the teachers who board at the school. Parents contribute to the cost of school construction: for example a family with two children in school are expected to pay D 45,000 / child, and no further fee is expected.

It is one of the 50 schools nation-wide for which UNICEF funding has not been approved for 1998. MOET has pledged to try and obtain the required funds from its own resources if additional funds are not made available by UNICEF. The Principal was aware that D 5,816,00 could eventually be made available by UNICEF; these funds would be used to improve facilities at all four campuses. It appears that the school authorities and parents were not involved in the selection of the school for possible UNICEF assistance; the decision was reportedly taken at the district level. At the provincial level construction of the facilities for the 10 schools approved for 1998 began in October 1998. In Moc Chau District itself UNICEF has assisted 27 primary schools since 1994.

4.2.1.2 Hygiene Education.

The level of awareness among community residents and students of the importance of proper hygiene is assessed as intermediate. One of the residents interviewed was aware that unboiled water and unclean vegetables could cause diarrhoea but he could not explain how. He stored drinking water in a clean jar inside the house. His daughter does not drink unboiled water because her teacher forbids it. The adults interviewed did not know how insects could transmit disease, while some of the students did. The householders do not have a proper means of ridding the house of smoke from their cooking fires. The general appearance of the residents and their children indicated infrequent bathing and laundering practices.

It was reported that 80% of the students have health education textbooks and that the remainder cannot afford to buy them. Shortages of exercise books and notebooks reported for the same reason. The required

texts were said to be available at a bookstore five kms from the school. In theory the books are free for grades one, two and three, but in practice 10% of those students have to pay. The cost of a complete set of textbooks is D 32,000, and each health text costs from D 4,000 to D 5,000.

No posters or other educational aids were seen. The possibility of producing such aids locally as a means of overcoming shortages was discussed.

4.2.1.3 Sanitation.

The school authorities indicated that they intend to install a "semi-septic" (pour-flush with infiltration pit) latrine, but the site had not yet been selected. The proposed site was at the back of the old classroom block so that it would be less visible but at the same time less accessible. The MOET representative was of the opinion that the latrine should be of the septic type. As of yet no funds are, in any case, available for latrine construction.

The family of one of the householders interviewed resorted to open defecation, and there was little evidence of widespread latrine use within the community in general.

4.2.1.4 Water.

There is at present no water source at the school, but the CERWASS representative said that there are plans to install a dug well equipped with the "HD-90" handpump which can be purchased at a cost of D 270,000 / unit. The well would be approximately eight metres in depth. The agreement between CERWASS and UNICEF is that CERWASS will first install the well with its own funds and subsequently claim reimbursement. UNICEF funds for this purpose have already been approved, unlike the UNICEF/MOET arrangement for latrine construction, whereby funds are not yet available. At present, estimates are that 50% of the students carry water from home, while others obtain water from neighbouring households or from the nearby stream.

Within the community, some residents use river water while approximately 20 families have dug wells, with average depths of five metres. Well water is shared with neighbours. Some residents expressed a concern that the river water may be contaminated by human and animal use. Little if any use is made of rainwater.

4.2.2 Conclusions.

1. The school and community in general are disadvantaged, and the reasons for which the school was not selected at the central level for UNICEF assistance, though its name had in fact been proposed by the provincial authorities, are unclear.

2. The local authorities have already made considerable investments in improvements to the school, and they anticipate WATSAN assistance from UNICEF and/or MOET.

3. The reasons for which assistance was approved for only 10 schools in 1998 as opposed to the 15 schools proposed are unclear.

4. Both the students and the adult members of the community would benefit from hygiene education campaigns that would include incentives for householders to build family latrines.

5. The availability of teaching aids such as posters is inadequate. The production of such materials at the local level could perhaps help alleviate the shortage.

6. The local authorities do not have adequate access to information related to alternative latrine designs and related construction techniques.

7. Because of different funding arrangements on the part of UNICEF there is a risk that a well will be installed at the school but that funds will not be available for latrine construction.

4.2.3 Recommendations.

1. Include Ta Lai on the list of schools to receive UNICEF/MOET assistance for latrine construction in 1999.

2. Carry out an intensive hygiene education campaign, with incentives for householders to build family latrines.

3. Take measures to make educational aids such as posters available in the community, and investigate the possibility of producing such aids locally.

4. Ensure that adequate technical assistance is made available with regard to latrine site selection at the school and in selecting the type of latrine to be installed.

5. Ensure that the water and latrine facilities are installed simultaneously.

6. Provide assistance to all 15 schools as initially proposed for 1998, rather than to only 10 as is currently the case.

4.3 *Case Study 3: Huyen Tung School (Bach Thong District, Bac Can)*

4.3.1 Observations and Findings.

Table 4: Facts on Huyen Tung School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
3	1	300*	95	low	high	N**	N***

*Primary school students who share facilities with 650 secondary school students.
** There is a septic tank latrine and a dry pit latrine but both are inadequate.
*** There is no reliable water source for the school. The need requires immediate attention.

4.3.1.1 Planning and Management.

Huyen Tung School is located on the outskirts of Bac Can Town on Highway Three to Cao Bang. It is in a semi-urban area and easily accessible. It is a large school, formerly "integrated" and separated into primary and secondary units prior to the start of the 1996/97 school year. The compound is large but unfenced, thus making it difficult for the school authorities to control access to the premises. Although most of the primary school classrooms are situated at the back of the compound and the secondary school classrooms at the front, there is no physical differentiation between the two. As a result, both make use of the available WATSAN facilities.

There are 300 primary school students, of whom 180 are from ethnic minorities. 200 are male and 100 female. There are 15 teachers for 10 classes held in eight classrooms. The secondary school has 680 students, with 30 teachers, in 15 classes which share 13 classrooms. The combined total number of students and teachers and staff who require access to the facilities is approximately 1,030.

101 of the province's 122 communes are classified as highland/remote and local officials suggested that they should be given special consideration. They recommended that future transfers of funds be made earlier, and that there should be a better description of the source of the funds and guidelines for their use.

4.3.1.2 Hygiene Education.

The level of awareness of the students of the need for proper hygiene was assessed as good. Those interviewed knew that there can be organisms in water that can cause illness, and that flies and rats can transmit disease, but in general showed little concern over the need for proper rubbish disposal at the school. The local officials interviewed were aware of the importance of boiling water but they did not know how boiling makes the water safe.

The school authorities mentioned that there were four health education training courses at district level in 1998 for teachers, the last of which took place in September and was attended by the Principal and four teachers. They did not have any course related documentation. It appears that no health education campaigns have been carried out in the community and that no UNICEF funds have been allocated for the purpose. A training course on latrine use and maintenance was reportedly carried out at provincial level in 1998.

A few of the students interviewed did not have the health education textbook, but availability nevertheless appears to be near 100% for grades one through five. It was reported that the school makes special arrangements to enable the poorer students buy books. There is reported to be a shortage of teachers' reference texts for grades four and five. There are three standard sets of posters in the library, each of which

includes three posters on health. The students interviewed said that their teachers do not have visual aids to assist with teaching.

4.3.1.3 Sanitation.

The large number of students, teachers and staff at the school creates a large demand for water and sanitation facilities. To date no arrangements have been made to provide a water point and there is little evidence of CERWASS involvement in attempts to resolve the issue. Latrine installations are not entirely appropriate. A two unit septic tank latrine was completed in December 1997 but the absence of a water source makes this type of latrine unsuited to the local conditions. A single unit dry pit latrine was completed in October 1997: it appears heavily used but too small to accommodate the large number of potential users. There are two separate urinals which are poorly maintained and appear to be used only sporadically. No special arrangements are made for the disposal of rubbish, and waste paper and other types of trash are discarded in a small area that lies between the urinals and the compound's boundary.

Because there is no convenient water source it is difficult to obtain the quantity of water required to operate the pour-flush toilet units, and the septic tank latrine generally gives the impression of being unused. The physical quality of construction of the latrine unit in place is good. The two-seater dry pit latrine unit is located towards the back of the compound in an area where most of the primary school classrooms are concentrated. The latrine is regularly used, probably by primary and secondary students, teachers and staff, and it clearly is too small to meet the potential demand. Those interviewed said they prefer to use the pit latrine rather than the septic tank latrine, probably because it is easier of access and easier of use, as water is not required to flush it. No staff are hired specifically to look after the latrines or to provide water to classrooms. It was reported that classes are assigned to the task, on a weekly rotation basis, under teacher supervision. One of the parents interviewed mentioned that it is better to have a pit latrine that functions well rather than a septic tank latrine that does not function for lack of water.

The septic tank latrine is located near the front of the compound, immediately behind the school's office. To gain access students must walk around the front of the office building, as direct access is fenced off. The location clearly is a disincentive to its use, and its size—a two toilet unit—is too small to accommodate the large number of potential users. The local authorities were under the impression at the pre-construction stage that only one payment of funds would be made from the central level, rather than three which was the actual case. Three payments were in fact to be made in 1997 but the provincial authorities had been unable to participate in an earlier meeting held in Buon Ma Thuot where the procedures were explained, and they remained unaware of those arrangements. The authorities reported that they did not have a copy of the standard latrine design so they hired a local contractor to build a latrine of size and specifications that would be covered by the amount of funds available at the time. This reportedly was made necessary because little technical information was passed on to the newly formed CERWASS office of Bac Can Province when that province was established.

The staff of both the secondary and primary school clearly were concerned with the existing WATSAN situation at the school but apparently did not know how to gain access to the resources (technical assistance, materials and funds) required to resolve the problem.

In 1997 PDOET received from the central government the total sum of D 147,936,000 in three instalments of D13,320,000, D14,616,000 and D 120,000,000 respectively. These funds were received in October and had to be accounted for in December. It appears that a total of D 4 million for the construction of the dry pit latrine and D10 million for the construction of the septic tank latrine were received from UNICEF as part of the overall total of D 147,936,000. One motorbike was also received from UNICEF via MOET.

The list of schools proposed for UNICEF assistance in 1998 includes 15 schools. Letter no. 2859/GDTC of 14 April 1998 from the SSHEP Project Director to all DOEs on "Guidelines for Building Exercise Areas, Sanitation and Hygiene" indicates that Bac Can Province is to receive D 45 million from MOET to assist with the installation of latrine facilities at the 15 schools. At the time of the team's visit those funds had not yet been received by the province, and they must be spent and accounted for by November 1998.

It appears that the sum of D 51,860,000 was received separately from UNICEF for the construction of latrines at 10 schools in 1998. It was not immediately apparent whether the remaining five schools were to

be funded separately by MOET or if they would be kept pending in the expectation of receiving additional UNICEF funds at a future date.

It was reported that some householders have dry pit latrines at home and that the relatively high cost of pour-flush latrines generally makes them unaffordable.

4.3.1.4 Water.

There is at present no convenient source of water for the school. It appears that the only nearby water source for students and teachers is a dug well at the home of a retired teacher who lives across the highway from the school, and perhaps other residents of the immediate neighbourhood. The level of the water in the well is four metres from the surface. The well is of good quality construction, has a sealed concrete cover, and is equipped with a locally made handpump that consists of a concrete outer cylinder, a rubber inner cylinder and a wooden handle that cost D 70,000. Despite the well owner's commendably accommodating attitude, however, it is unrealistic to expect the entire population of the school to obtain water from that well, and the school's staff also pointed out the danger of students having to cross the busy highway to collect water.

The concern over the lack of a reliable water supply at the school was expressed by representatives of the commune and of the Parents' Association, the Principals, teachers and students. It appears that the provincial CERWASS office has not yet investigated the situation, but a letter from the CERWASS Director at the national level (letter no. 474/TTN of 8 September 1998 to all provincial CERWASS offices) indicates that expenditure amounting to a maximum of D 4 million on the installation of water facilities at the school will be reimbursed, provided the provincial authorities are able to invest their own funds initially.

Most of the commune's households reportedly have access to dug wells, which typically range from six to eight metres in depth, with the SWL at or near two metres. At some locations water installations reportedly cost up to D 20 million which is beyond the means of most householders. Little or no use is made of rainwater harvesting. There reportedly are two sources of water on the outskirts of the commune from which water could be made to flow by gravity to the commune.

4.3.2 Conclusions.

1. In cases where primary and secondary schools share the same premises, demand for WATSAN facilities can be considerably larger than would otherwise be expected. In this case, including the secondary school increases the requirement by 220%.

2. 90% of the province's communes are considered "remote", which implies a lower level of access to basic services for most of the inhabitants of the province.

3. The members of the Provincial Management Board are newly appointed to the province and are not yet familiar with the details of the projects being implemented in the province.

4. There appears to be an inadequate level of non-formal health/hygiene education at the commune level.

5. Student ownership of health education textbooks appears to be very high, but there are shortages of grade four and five reference texts for teachers.

6. The availability of visual aids, such as posters, is inadequate.

7. Despite the existence of basic latrine facilities at the school, the minimum requirement has still not been met.

8. Current garbage disposal arrangements are inadequate.

9. The perception of the provincial officials is that they were not sufficiently well informed of the amount of funds that would be made available from the central level in 1997, of the number of payments to be made, and of the guidelines for the use of those funds.

10. Provincial and school officials are concerned with the WATSAN situation at the school but appear unsure as to how to address the issue.

11. Funds received in October 1997which reportedly had to be spent and accounted for by December of the same year does not appear to allow for a time frame long enough for continuous attention to be paid to what are essentially long term development issues. It appears that the same situation may arise in the case of MOET funds yet to be transferred for the 1998 workplan.

12. It is not clear why UNICEF has apparently transferred funds sufficient for 10 schools to the province, while a list of 15 schools was proposed.

13. There is at present no convenient and reliable source of water for the school.

14. The implications of central UNICEF/CERWASS limiting their contribution to funds in the amount of D 4 million, apparently without consideration of other essential project components such as technical assistance, are unclear.

15. Little or no use is made of rainwater harvesting, neither at the school nor in the community at large.

16. Shortages of water result in pit latrines being installed more frequently than pour flush latrines at households.

4.3.3 Recommendations.

1. Where primary and secondary schools share premises, design WATSAN facilities that provide for the total student and teacher demand, and not only for the needs of the primary school.

2. Support non-formal hygiene education efforts at the community level, particularly those that encourage the installation of proper household latrines.

3. Provide a convenient and reliable water source for the school, and simultaneously investigate the possibility of improving the sanitation situation at the school (latrines and garbage disposal). If for some reason CERWASS were unable to resolve the issue other means should be sought.

4. Provide special support from the central level to newly formed provinces, where officials are perhaps less experienced than those in the better established provinces, and where procedures, methods and guidelines may require more careful explanation. At the same time, ensure that any relevant information and documentation is transferred from the "old" province to the newly established one.

5. Pay special attention to provinces where the majority of the districts are 'remote' or 'difficult'.

6. Recognise the fact that this is a long term development project, not one whose purpose is to meet an emergency need. As such, at least some of the project related activities should be continuous over the entire calendar year, implying that funding could be required at any time of the year. Consequently, funding over a three month period in each calendar year does not appear to provide sufficient leeway for adequate activity implementation.

7. Provide funding for the five schools which were on the list of schools proposed for assistance in 1998, and which have apparently not yet been funded.

8. Base the level of funding on actual technical requirements instead of on an average amount, D 4 million / school in this case, which is applied country-wide.

9. Support and propagate the use of rainwater harvesting.

4.4 Case Study 4: Phu Xuyen School (Dai Tu District, Thai Nguyen)

4.4.1 Observations and Findings.

Table 5: Facts on Phu Xuyen School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
4	4	677	60	medium	medium	Y*	Y*

* Inadequate at the three satellite campuses.

4.4.1.1 Planning and Management.

Phu Xuyen School is located 40 kms. West of Thai Nguyen Town, and is easily accessible. There are 677 students (308 female and 369 male), in four campuses, with 389 of the students at the main campus. 256 of the 677 students are mainly from the Tay ethnic minority There are 24 teachers.

The PDOET representative mentioned that it is sometimes difficult to raise the required local contribution because UNICEF projects focus on poor districts and those areas sometimes are unable to mobilise local funds. Supplies and equipment for drinking water are free of cost but the cost of labour and transportation must be covered locally. The result is that sometimes approved projects are left unfinished and materials such as cement are wasted.

The criteria used in this province in selecting schools for project assistance are:
1- The community is able to mobilise sufficient funds.
2- The school has already started teaching the health education curriculum.
3- Informal expression of support received from the local authorities: no letter of request required.
4- Ease of access.

The province was informed in advance that central level assistance could be provided to 10 schools in 1998. The province then submitted a list of 10 names, all of which subsequently were included in the central level list of schools to be assisted. The local authorities are not familiar with the criteria used at the central level in selecting the number of schools that can be assisted in a given province in any given year.

In general, local contractors who are able to advance their own funds, to be reimbursed on project completion, are hired to build the latrines and, in some cases, the water installations.

Provincial officials would like to see improved co-ordination between the project's Management Board members at both the national and provincial level, and further clarification of the role of each. MOET/PDOET are primarily interested in schools while CERWASS targets communities, so MOET and CERWASS should jointly select a list of sites that meets the requirements of both. The following example of the complicated nature of the present arrangement was given: For 1998 MOET initially requested that 10 schools be selected from Dai Tu District but later on requested that five schools be chosen from Dai Tu and five from Vo Nhai District. When it was realised that Vo Nhai is not a part of CERWASS' existing plan, MOET once again requested that all 10 schools be chosen from Dai Tu, which does fit the CERWASS plan. The list was again changed as a result, and all the schools assisted in 1998 are now in Dai Tu District.

It was also suggested that the funds allocated to water installations be managed by the respective schools instead of by CERWASS, in order to simplify fund management procedures. As end-users the schools administrators are in a better position to understand the local conditions, such as the likelihood of being able to raise project funds locally.

The potential usefulness of any future training at the provincial level related to issues such as the preparation of feasibility studies was recognised, as was the desirability of raising project funds locally to the extent possible.

4.4.1.2 Hygiene Education.

It was estimated that 60% of the students and most of the teachers own health education textbooks, but not the 1998 edition. Those students who do not have the texts are unable to afford them. Each textbook costs D 3,700. The school has five sets of posters which were very recently received from the District Education Office.

The NGO "EAST" has produced five health education books / booklets which are currently being used locally. The district officials mentioned that those books sometimes provide information which is contradictory to the contents of the UNICEF assisted health education textbooks.

The general level of awareness of the students and residents of the commune interviewed was assessed as medium. One householder interviewed was aware that dirty water could cause sickness but he was unable to explain how. He has a dry latrine but uses excreta as fertiliser and, for this reason, he was unsure whether he would build a septic tank latrine even if he could afford it. He mentioned that many rats/mice die in or around the house, which can create a health hazard.

The DOH Director said that all students need to have health education textbooks, and that they should be able to put into practice what they learn through the actual use of latrines, so facilities need to be made available. For schools that have more than one campus, more than one latrine installation is required. He prefers the use of water-seal latrines.

The CERWASS representative mentioned that although the project has been under way for a long time no health education campaigns have yet been carried out. He said that such campaigns should be undertaken to propagate health messages within the community.

4.4.1.3 Sanitation.

Latrine arrangements at the main campus are good, although such facilities at the satellite schools are reportedly lacking. There is a four toilet unit septic tank latrine located in an easily accessible area of the compound. The Principal was of the view that the latrine is large enough to meet the needs of the students. It was in excellent condition, having recently been whitewashed and painted, but the team's brief visit did not enable an accurate assessment of actual use. One possible constraint is the fact that the girls' urinal is built in such a way that those walking by can easily see in, which may be a disincentive to its use. There is a reliable source of water at a distance of 10 metres from the latrine block. No staff are hired specifically to look after latrine maintenance. This task is carried out by groups of 10 students from grades two to five, supervised by a teacher, which is rotated daily.

The latrine was built by a contractor from Dai Tu Town because contractors are required to advance their own funds and local contractors were not in a position to do so. Construction was completed in December 1997 and the contractor was paid in the same month. The total cost of the installation was D 11 million, of which D 4 million were provided by UNICEF and D 7 million by the Parents' Association and other local sources. Construction was carried out according to technical designs and specifications obtained from the DDOE.

There is a separate two unit dry pit latrine unit near the septic tank latrine block. It was reportedly built in 1995 with UNICEF funds channelled through the administrative structure down to the Commune Chief. It is now closed and it is scheduled to be demolished.

The Commune Chief reported that there is another sanitation project in the commune where UNICEF funds are channelled through the MOH to the commune clinic, which is responsible for the disbursement of the funds, for the installation of household latrines. The project began in October 1995. A total of D 32.5 million were provided for five communes. Initially the latrines were water-seal, but the community later changed to dry latrines because of lack of water for the water-seal type. The sum of D 300,000 was provided

as a loan to each interested householder, to be repaid at an annual interest rate of one %. 10 KGs. of rebars / latrine and a water-seal pan were reportedly provided free as an incentive.

The French NGO "EAST" has been supporting a latrine construction project in the province since 1995. To date 61 latrines have been built at schools, some of which are dry pit latrines and some pour flush. Technical problems were reported with the latter type, and according to local officials UNICEF has indicated that it would assist in their repair. 40% of the cost of the project is covered by EAST and 60% by the government. Two new experimental pour flush latrines, with water provided simultaneously, have been built by EAST to try and determine the most appropriate type of latrine for the schools assisted by its project.

4.4.1.4 Water.

As with the latrine, arrangements for water for the latrine at the main campus are good, although such facilities at the satellite schools are reportedly lacking. The well is located in a very accessible area of the compound, 10 metres from the septic tank latrine. It is seven metres deep and the SWL is at four metres. The quality of construction is good and the well is sealed to prevent contamination. It is equipped with a locally made handpump (described earlier) which costs approximately D 70,000/unit and which appears to be widely used throughout the northern part of the country. The well was built by the same contractor who installed the septic tank latrine. Its cost was not immediately available, but it was reported that MOET contributed D 3 million for the purpose. Water from the well is not used for drinking as it is not boiled. Students are expected to carry water from home.

As appears to be the case in most of the area that lies to the North of Hanoi, little or no use is made of rainwater harvesting in this community. It was reported that most householders use water from dug wells, some of which reach depths of 20 metres.

4.4.2 Conclusions.

1. UNICEF assistance targets the poorest districts but because they are poor they are sometimes unable to raise the required local contribution, which can result in unfinished projects and wasted supplies and materials.

2. The provincial level selection criteria for project schools are not standardised.

3. The provincial authorities are not familiar with the criteria used at the central level in determining the number of schools to be assisted annually.

4. The requirement that contractors be able to advance their own funds deprives the smaller contractors of the opportunity to participate in the project.

5. The perception of the provincial authorities is that there is an insufficient degree of co-ordination among the Management Board members, both at the central and provincial levels.

6. PDOET officials would prefer it if central level funds allocated to the water component were managed by the PDOET or the schools themselves, instead of by CERWASS as is currently the case.

7. There is potential for project related training activities at the provincial level.

8. The level of health education textbook ownership is low, and the 1998 edition was not widely available at the school.

9. There is a shortage of educational aids such as posters.

10. There may be an inadequate level of co-ordination between the various agencies that support health education activities in schools, in particular as regards curriculum content.

11. WATSAN facilities at the satellite schools are inadequate.

12. There appears to be an inadequate level of non-formal health education campaigning within the community itself.

13. Student involvement in latrine maintenance is an appropriate means of both keeping the latrine clean and increasing the students' level of hygiene awareness.

14. The Parents' Association are very supportive of the project, financially and otherwise.

15. It was not possible to determine the nature of the project from which funds were obtained to build the dry pit latrine at the school.

16. The community latrine project appears to be part of the country-wide UNICEF assisted project which was later discontinued, but as a result of which funds from the revolving fund are still "revolving" within the community.

17. Documentation of the results of the EAST experiment would be of interest to the managers of the UNICEF assisted project.

18. It is possible, but not certain, that no UNICEF/CERWASS funds were used in the installation of the school's well. It appears that the required funds were partly obtained from the UNICEF/MOET fund for latrine construction and perhaps partly from local sources.

19. Local contractors are able to independently install good quality wells at a reasonable cost.

20. Although water is available in sufficient quantity at the school, students are still expected to carry drinking water from home.

21. There is a low level of awareness of the potential of rainwater harvesting and of related developments elsewhere in the country.

4.4.3 Recommendations.

1. Discuss ways of resolving the apparent paradox whereby the target group, selected from among the poorest groups, is sometimes unable to participate because it cannot afford to.

2. Inform the provincial authorities of central level criteria used in determining the number of schools to be assisted.

3. Develop a "core group" of standard criteria to be referred to at the provincial level in selecting the schools that are to receive project assistance.

4. Discuss the implications of using contractors to carry out project activities, and whether special consideration should be given to small contractors. To the extent possible local contractors should be used in the installation of both the water point and the latrine.

5. Address the provincial concern that there is an insufficient degree of co-ordination among members of the Project Management Board at central and provincial level.

6. Investigate whether it is desirable for water component funds to be managed by the PDOET/schools as proposed, or by CERWASS as is now the case.

7. Assess the need and desirability of conducting project related training activities at the provincial level.

8. Increase the level of health education textbook ownership at the school, and make the 1998 edition available. Increase the availability of educational aids, such as posters.

9. Improve the level of co-ordination among the various project support agencies to ensure that health education messages are mutually supportive.

10. Make WATSAN facilities available at the satellite schools as well as at the main campus.

11. Continue to encourage the direct involvement of students in the maintenance and upkeep of the school's WATSAN facilities.

12. Document the EAST experiment in latrine installation.

13. Commend the Parents' Association, and any other local organisation that may be involved, for their active support of the project.

14. Continue providing support to the improvement of sanitation within the community, through educational campaigns, loans for latrine installation, technical assistance to the community, project monitoring, etc.

15. Make water from the well available to the students, if necessary by disinfecting it first, so that they will no longer need to carry drinking water from home.

16. Propagate information on rainwater harvesting and encourage and support its use as appropriate.

4.5 *Case Study 5: Trung Hoa School (Cau Giay District, Hanoi City)*

4.5.1 Observations and Findings.

Table 6: Facts on Trung Hoa School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)*	Water source adequate (Y/N)*
5	1	554	100*	M	very high	Y	Y**

* A small number of students are unable to afford books but they are helped by the school fund.
** Connected to the city mains.

4.5.1.1 Planning and Management.

Trung Hoa School is located in the western periphery of Hanoi City, formerly in Tu Liem Rural District. It has 554 students divided into 17 classes who use 14 classrooms and who study in two shifts. There are 37 teachers, all but one of whom are female.

There are 260 primary schools in Hanoi, of which 210 already have adequate WATSAN facilities. 135 of those 210 were assisted by UNICEF and 75 were received support from MOET without UNICEF funding. It is expected that the needs of the remaining 50 schools which do not yet have adequate facilities will be met by the year 2000 or so.

Parents who make their living from agriculture pay a yearly school maintenance fee of D 20,000 for each of their children in school, while all other parents pay a yearly fee of D 40,000 / child.

No external agencies other than UNICEF are involved with school sanitation projects in this ward.

4.5.1.2 Hygiene Education.

The level of awareness of the importance of proper hygiene is assessed as very high among both the students and parents.

All students and teachers at the school reportedly have the required health education textbooks. Students in grades one to three have health texts printed for the 1997-78 school year, while those in grades four and five have books printed for 1998-99. Those few students who cannot afford to buy the books are provided them free from the school fund. A full set of textbooks costs D 80,000 / year. The cost of individual books is printed on the back of each book, and typically is approximately D 4,000.

In the greater Hanoi area 90% of the primary students are reported to have the required health education text. The remaining 10% tend to live in rural areas where a smaller proportion of parents can afford to buy books.

The students at the school receive the standard 40 minutes of health tuition a week. The Principal said this is sufficient and that the curriculum is good. Posters are available but one of the teachers said that more educational aids are needed. A greater range of posters is required to cover all the topics included in the curriculum. Some of the existing posters were bought by the school, while others were provided by MOET. The school has a video on dental care which it periodically shows to the students.

4.5.1.3 Sanitation.

Latrine arrangements at the school are adequate, although certain minor modifications would be beneficial. The latrine block is located at the back of the compound, behind one of the classroom blocks, next to a four unit dry pit latrine which is scheduled to be demolished. Some of the students said they were afraid to use the latrine because they thought there were "ghosts" in the area, and a grade one student said he did not know where the latrine was. Although those students may have embellished their accounts, they do raise the issue that some students may be less interested in using an out of the way latrine than one which is more centrally located. In any case the choice of locations is sometimes limited by space restrictions within the school compound.

The UNICEF assisted latrine is of the four toilet unit septic tank type and the physical quality of its construction is good. Water is air-pumped from a tubewell at the latrine site to a one cum. tank on top of the pump house, from which it flows to the urinals and the hand washing basin, the latter of which is built too high to enable the smaller children to use it comfortably. Water from the urinals drains to ground surface through an opening at the back. The Principal was of the opinion that the urinal area is too small to accommodate the large number of students who want to use it during the short break period. She also mentioned that a roof over the urinal area would make it easier to use during the rainy season. The funds required to make those modifications to the design could likely be raised locally but in a later year. She reported that the effluent from the latrine's septic tank drains to a farmer's fishpond located outside the school compound's wall. The total cost of the latrine installation was D 25 million, of which D 3 million were provided by UNICEF and D 22 million by the Hanoi PDOET.

There is a separate latrine installation for use by teachers and staff.

One day of every week is "environmental sanitation day" at the school, when students from grades three to five are assigned to cleaning the yard. Students not involved with latrine maintenance, as there are two maintenance workers hired to look after sanitation. Two students per class are reportedly expected to check other students for general cleanliness of hands, fingernails, etc., but in general students are not extensively involved with WATSAN related activities at the school.

It was reported that most households in the commune have private latrines, 30% of which are of the pour-flush type.

The local latrine design, which costs D 35 million and was adopted by the Hanoi City area was developed by the Hanoi Construction Department and introduced in 1995. School latrines are built by the PDOET technical teams. Latrines based on the earlier design cost D 25 million. Prior to 1995 the UNICEF contribution of either $300 or $400, depending on the year, was equivalent to about 13% of the total cost. With the introduction of the new design the UNICEF contribution is now equivalent to approximately 9% of the total cost . From 1993 onwards there has been no local contribution to the cost of latrine installation, as the entire amount is provided by UNICEF and the city government. It is to be noted, however, that if later improvements are required the school or commune are expected to cover the cost.

The PDOET representative mentioned that the Thai Binh standard latrine design is not appropriate because it has not been approved by the Department of Construction.

4.5.1.4 Water.

Water for use at the school is taken from a piped connection to the city mains. The connection is metered. The school uses 20 cum of water per month for which it pays D 3,500/cum. One of the maintenance staff is responsible for boiling some of the piped water and placing it in the classrooms as drinking water for the students. The concerned staff member receives a salary of D 300,000, of which D 180,000 are paid by the school and D 120,000 by the Parents' Association. It was reported that students do not carry drinking water from home.

There is a separate air-pump equipped tubewell which provides water for the septic tank latrine. At all of the primary schools in Hanoi CERWASS is assigned the contract for well installation as and when necessary.

It was reported that imported water treatment units that annually require the equivalent of $70 in spare parts were installed at some of the city's schools. It was found that the schools cannot afford this amount, so those units are no longer used and the schools have gone back to the practice of boiling water for the students to drink.

4.5.2 Conclusions.

1. It is likely that all of the primary schools in Hanoi will have adequate WATSAN facilities by or around the year 2,000.
2. Parents are expected to pay a specified annual amount to the cost of school maintenance.
3. The level of awareness of the need for proper hygienic practices is high, and there is near total coverage of health education textbooks at this school. Coverage within the City in general is also very high.
4. The range of available posters and other educational aids may not be broad enough to cover all of the health topics included in the health education curriculum.
5. The isolated location and the "invisibility" of the school's latrine may act as a disincentive to its use.
6. Availability of piped water in the latrine requires a storage tank large enough to ensure that pumping will not be required at unduly short intervals.
7. Runoff from the urinals and the effluent from the septic tank can in certain situations create a health hazard if not properly disposed of.
8. Standard designs are sometimes inadequate in addressing all of the requirements of a particular school.
9. Students are involved with sanitation activities at the school but not with latrine maintenance and upkeep.
10. The end-users reportedly do not contribute financially to the cost of installation of WATSAN facilities at the school.
11. Water availability at the school is adequate.
12. Rainwater is not harvested in any of the city's schools.

4.5.3 Recommendations.

1. Compare the range of educational aids, such as posters, that are available to see if they adequately cover the health education curriculum.
2. Whenever space availability permits, locate the school's latrine in an area where it is visible and easily accessible.
3. Make a cost comparison of the various alternatives for providing water to a school. For example at this school it would be useful to compare the cost of using water from the mains for the latrine as well as for drinking, with the cost of installing a separate well and pump specifically for the latrine.
4. Ensure that people are not exposed to any pathogens that may be present in the effluent from the school latrine's septic tank, and that urine is properly disposed of.
5. Consider allocating available UNICEF funds to geographical areas that are neither urban nor semi-urban, as those areas appear to be relatively advanced in terms of providing WATSAN facilities and hygiene education to schools.

4.6 *Case Study 6: Thanh Phu School (Vu Thu District, Thai Binh)*

4.6.1 Observations and Findings.

Table 7: Facts on Thanh Phu School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
6	4	619	100	low	high	Y*	Y**

* Adequate at the main campus; inadequate at the three satellite campuses.
** Ditto. Also the water is only used at the latrine and not for drinking.

4.6.1.1 Planning and Management.

Thanh Phu School is located 20 kms. N-W of Thai Binh Town and is easily accessible by two wheel drive car. The primary school shares a large compound, with a pond in the middle, with the secondary school, from which it was de-integrated in 1994. It has four campuses. The primary school has 619 students, of which 354 students study at the main campus. Each family with children in school pays the sum of D30,000/year/child as a contribution to the school maintenance fund.

141 of the 287 primary schools in the province received assistance from the project between 1992 and 1997. 115 of those schools received UNICEF assistance. The remaining 26 schools received government and community support. 10 schools will receive UNICEF assistance in 1998, and 10 additional schools will be provided with WATSAN facilities with funds obtained from other sources. By the end of 1998 a total of 125 schools will have received UNICEF assistance.

UNICEF has been assisting the project in this district since the 1991/92 school year, involving 26 of 36 schools in 23 of the district's 31 communes.

From 1992 to end 1998 UNICEF has contributed a total of D 237,767,000 to the project, while the MOET and PDOET combined contribution for the same period is D 342,000,000. The UNICEF contribution for 1998 was D 51,720,000 (equivalent to $400/school at an exchange rate of D 12,930), paid in full in a single instalment. Significant contributions from the community were reportedly made but specific figures were not available.

It was reported that the schools assisted in 1998 were selected as follows. First, UNICEF selected two AFPDs: Hung Ha and Vu Thu, then the province chose a list of schools from within those districts. One of the selection criteria was that the selected schools should be able to raise the required project funds over and above those provided by UNICEF and other sources. According to provincial officials, neither the province nor MOET were involved in the selection of the AFPDs. Nevertheless, they concur that the districts selected as AFPDs are in fact the province's two poorest districts.

The provincial authorities made the following suggestions with regard to future project development:
1- UNICEF should ensure that its funds are disbursed to the province earlier in the year.
2- Transfers should be made in one instalment only.
3- MOET should increase its level of funding for each school.
4- A management fund should be provided to the Project Management Board.
5- Funding for VAC should be resumed.
6- Visits should be arranged to schools in neighbouring countries.
7- A national level meeting should be held once a year to review project accomplishments and to plan for the coming year. Rewards for outstanding achievements should be presented at the meeting.

4.6.1.2 Hygiene Education.

The three grade 2A students interviewed have a good understanding of basic hygiene. They knew that bacteria in water can cause illness, and that flies and mosquitoes can transmit disease. They do not drink rainwater if it is not boiled. They reported having latrines at home, of taking daily baths and of regularly brushing their teeth. At the school there is a "Red Star Group" of students that checks other students for cleanliness, and each class is awarded points. The number of students who carry water to school is one of the indicators used in assigning points.

Within the community the farmers interviewed apparently were not aware of the means by which pathogens can be transmitted from fresh excreta. One parent interviewed said that hygiene awareness within the community is in general low, and that campaigns carried out through the Women's Union and by other means were organised without sufficient inter-agency consultation. For example, certain activities at the school sometimes receive inadequate support from the People's Committees.

100% of the students and teachers were reported to have the revised 1998 version of the health education textbooks. The price is as indicated on the back of each book. One full set of 19 books for grade four or five costs D68,000. The cost of a full set of 18 books for grades one to three ranges from D58,000 to D62,000. The course content is thought by the teachers to be appropriate, but often the students learn about septic tank latrines and do not have access to such latrines in practice. The students receive the standard 40 minute / week health education class. It was reported that seven health education training courses for teachers at the school were held in 1998, but information on the content, duration and location of the training was not immediately available.

There were no posters on exhibit and the Principal reported that the few on hand were very recently received, and they were stored rolled up which makes identification and retrieval difficult. There were only one or two posters for each topic, and in his view the range of posters only covers 20% of the health topics included in the curriculum. He described a need for additional training manuals and other forms of educational aids.

4.6.1.3 Sanitation.

The sanitation situation at the school's main campus is assessed as good, while the three satellite campuses are without proper WATSAN facilities. There are two sets of latrines at the main campus: a block of dry pit latrines which are reportedly still being used by the teachers and staff, and the new UNICEF assisted septic tank latrine block, which has a reliable water source. The pit latrines are reportedly scheduled to be demolished. The septic tank latrine and its water source were installed simultaneously between January and March 1996 at a total cost of D 14 million, of which D 7 million were contributed by the Parents' Association and D 7 million by UNICEF. The installation was made by the PDOET's mobile construction team. The pour flush latrine is a two toilet unit, which the Principal believes is sufficient. He mentioned that the school does not have a copy of the technical design of the WATSAN installation. Although the primary and secondary schools share a compound the UNICEF assisted WATSAN facilities are not accessible to the secondary school students.

Students from grades four and five are assigned to the upkeep of the WATSAN facilities, on the basis of two days per class per week. No staff are hired specifically for the purpose. District officials assessed this school as providing a medium level of sanitation because, for example, there is no raised water tank in the latrine area—a feature that is generally present in latrines of later design. It was also suggested that certain improvements could be made locally to the standard design, for example by placing ceramic tiles in the urinals and toilets to make them easier to clean.

This is the first water seal latrine in the commune, and it has set a good example for community members. The Principal said that all the households now have dry latrines, but more and more of them are installing the pour flush type. There were various reports of farmers using excreta as fertiliser, some indicating that fresh excreta is used, and others mentioning that the excreta is buried for a number of months before being used. One person said that because people are poor they worry more about economically productive activities than about sanitation. One official suggested that attention should be paid to the sanitation situation in communities and not only in schools. Another mentioned that in this province sanitation activities have

been into the health programme, so community sanitation would be the responsibility of the DOH. There were reports that a Danish agency were planning to assist a community sanitation project in the commune.

4.6.1.4 Water.

There is a reliable source of water at the main for the latrine but that water is not used for drinking. Most students carry drinking water from home. There are no adequate water facilities at the three satellite campuses. The school has both a dug well and a tubewell equipped with an electric surface mounted suction pump, recently installed at a cost of D 320,000 to replace the "Number Six" handpump that had been installed earlier. One report indicated that the electric pump was bought in October 1997, while another person said it was put in place only a few days prior to the team's visit, and that up to that point water from the dug well was being used. The tubewell water has a high iron content and an iron removal filter is in place. The small water tank is not raised high enough to provide sufficient amount of pressure to the latrine area.

A rudimentary bamboo trough inefficiently channels water from the roof of one of the classrooms to a clean rainwater storage tank near the tubewell. The tank has a storage capacity of approximately 1.5 cum and the water must removed through the access opening as there are not taps. It was reported that water from the tank was formerly used for drinking, when the school's guard used to boil the water for the students. This practice was discontinued in 1997 as it was not possible to boil sufficient water for all the students. The school now encourages students to carry drinking water from home, and the Principal estimates that 90% of them follow that practice. Some students reported using pond water for washing and sometimes for drinking, both at home and at school. Some of the students get drinking water from the households that neighbour the school.

The Parents' Association is pleased with the project but it would like more support from the commune and parents in providing drinking water at the school so that students do not have to carry water from home. They suggested that there should be a larger rainwater storage reservoir at the school.

It was reported that up to 50% of the commune's residents use surface water for household purposes, including drinking, one of the reasons being that the iron content of the groundwater is very high which makes it unacceptable for many household uses. Those families who do use well water often employ the locally made "concrete" handpump which is widely used in the northern part of the country and which costs approximately D 55,000/unit, including the rising main. Many of the UNICEF supplied handpumps in this area reportedly are out of order. Since 1996 UNICEF has been supplying electric pumps instead of handpumps for use at schools. Rainwater harvesting is said to be a common practice throughout the province, while those in urban areas often have connections to the towns' water mains.

4.6.2 Conclusions.

1. 89% of the province's schools report having received project related assistance from UNICEF, but this figure is misleading as it does not include the satellite schools.

2. Since 1992, 41% of central level assistance to the project has reportedly come from UNICEF and 59% from MOET.

3. The perception of provincial officials is that AFA districts were selected by UNICEF without the involvement of either MOET or the provincial authorities. This perception differs from the explanation given at the central level that the choice is made as a result of consultations between MPI, MOET and UNICEF.

4. There are seven specific issues (see above) which the provincial authorities would like the Central Level Management Board and UNICEF to address.

5. The level of awareness of the need for proper hygiene at the school and among the student body is high.

6. There appears to be a strong economic incentive for the agricultural community to use fresh or partially composted excreta as fertiliser.

7. There appears to be total coverage in terms of student and teacher access to or ownership of the required health education textbooks. On the other hand the availability of educational materials such as posters is low.

8. There reportedly was no MOET funding contributed to the cost of the installation, with the cost being evenly divided between the Parents' Association and UNICEF.

9. The students and teachers maintain an active and important role in the upkeep of the WATSAN facilities.

10. There is local interest in the potential for upgrading the facilities, for example by installing ceramic tiles in the latrines or building a larger rainwater storage tank.

11. The rate of personal ownership of household latrines in the commune is reported to be high.

12. There remains a need for a source of drinking water at the school.

13. The high iron content of the groundwater throughout the province tends to make it unacceptable for most household uses.

4.6.3 Recommendations.

1. Ensure that all interested parties are familiar with the manner in which areas of special focus are defined and determined.

2. Address the seven specific project related issues (see above) raised by the provincial authorities.

3. Consider activities that UNICEF could assist to balance the importance of excreta as fertiliser with the need to avoid exposure to pathogens that might be found in the excreta.

4. The reported high level of participation of the Parents' Association, including the contribution of 50% of the required funding, is to be commended and encouraged in other target communities. The same is true for the active participation of the teachers and students in the upkeep of the facilities.

5. Clarify the responsibilities of the various parties in upgrading existing facilities. For example all parties should know who would be responsible for the cost of replacing a handpump with an electric pump, or of installing ceramic tiles in the urinals and toilets.

6. Enable the provision of drinking water for the students at the school so that they no longer need to carry water from home.

4.7 *Case Study 7: Ky Ba School (Thai Binh City, Thai Binh)*

4.7.1 Observations and Findings.

Table 8: Facts on Ky Ba School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
7	1	1173	100	medium	high	Y/N*	Y/N*

* Adequate at the second site but not at the first.

4.7.1.1 Planning and Management.

Ky Ba School is located 15 kms. S-E of Thai Binh City. In 1991, at the time when it was an integrated school, UNICEF assisted the installation of WATSAN facilities there as part of an experimental school sanitation project implemented by the Thai Binh Medical College. The school has since been de-integrated, and the primary and secondary schools no longer share a common compound. The 1991 installation is at what is now the secondary school.

In 1997 UNICEF funding contributed to the installation of WATSAN facilities at what is now the primary school, but this installation does not appear on the list of schools assisted during that year. The list in question indicates the names of five other schools. It was explained that the sum of D 16,500,000 were received from UNICEF for that year and that the provincial authorities decided to use those funds to assist six schools instead of five, with Ky Ba Primary School being school number six . As a result six WATSAN installations were put in place at those six schools in 1997, but the central level list of schools assisted was not updated to reflect that addition.

Because the provincial authorities were aware that the evaluation team was mainly interested in visiting primary schools, the team was directed to see the installation at what is now the primary school, and which was put in place in 1997. It was only on arrival there that the team discovered that UNICEF had in fact assisted two installations instead of one: the first in 1991 and the second in 1997. Consequently the team decided to visit both installations.

The primary school includes a new three storey classroom building and two older classroom blocks. The new building was put up at a cost of D1.6 billion with funds raised entirely by the commune itself through the sale of a piece of nearby property. The latrine unit is housed on the ground floor at one end of the building.

There are 1173 students, 603 of which are female and 570 male, and none of which are from ethnic minority groups. There are 40 teachers, 37 of whom are female, who teach 34 classes of students in 25 classrooms. There is only one campus.

It was reported that each student pays the approximate sum of D100,000/year to the school maintenance fund and D100,000/year towards the cost of paying the salaries of the school's maintenance workers.

4.7.1.2 Hygiene Education.

The Principal said that in her view the revised health education curriculum, with which she is satisfied, is an improvement over the original curriculum. She also expressed strong support for the new teaching

methodology, which includes more active participation on the part of the students, and which started with the introduction of the health education curriculum.

It was estimated that the school has approximately 140 educational aids, many of which are posters, which were produced locally by the teachers and students. In addition there are nine sets of posters with 10 posters per set. Each set includes two or three posters that relate specifically to health topics. Still, one of the teachers mentioned that the quantity of educational aids available was still insufficient. The school has a library where the posters are kept individually suspended on racks, and a reading room that reportedly is accessible to students.

The Principal reported that nearly 100% of the students and teachers have the required health education textbooks and exercise books which, she mentioned, match the contents of the textbooks. On the other hand there appears to be an absence of training manuals at the school, the reason for which it was not possible to determine.

4.7.1.3 Sanitation.

There is a UNICEF assisted septic tank latrine at the secondary school, a similar UNICEF assisted latrine at the primary school and a dry pit latrine that did not receive UNICEF assistance, also at the primary school.

The installation at the secondary is said to have been experimental but the team did not come across any documentation that defined the experiment or that indicated any follow up. It is a septic tank latrine with six toilet units and urinals. Water used in the latrine is pumped from a "Number Six" handpump-equipped tubewell that is housed in a small lockable pump house. Water pumped from the well flows into an iron removal filter and from there by gravity to smaller tanks in the urinal area. The quality of construction was good and the septic tanks appeared sturdy, but it was not possible to verify the means adopted to deal with the septic tank effluent. It is of interest to note that this is the only UNICEF assisted latrine that the team visited without having given several days of advance notice and no special cleaning or maintenance work had been carried out in preparation for the visit.

The tubewell and handpump were in satisfactory condition, but weeds and algae were growing in the iron removal filter, but water was still able to flow to the tanks located in the urinal area. All six toilet units appeared to be in working order, although they were not as clean as those at some of the other sites visited. Waste paper and other types of rubbish were left in the open in the area behind the latrine and the compound wall. The Principal of the secondary school was appointed several years after the latrine was built and he was unaware of its technical specifications and cost. He expressed an interest in improving the installation and felt confident that funds could be raised locally for the purpose.

The UNICEF assisted primary school latrine is housed in a small building located at the end of the new classroom block. It is a four toilet unit which, at first glance appears too small considering that there are 1,200 potential users, but in the Principal's view it is adequate. The urinal area is large. Water is pumped from a nearby, CERWASS-installed tubewell with an electric suction pump to tanks on the roof of the latrine unit. From there it flows under high pressure to the urinals and to the toilets, but no provision was made for hand washing. Valves in the toilet units and urinals enable the water to be turned on and off as required. The cost of the installation was D 40 million, of which D 32 million were contributed by the commune, and D 8 million by UNICEF and MOET. The cost of latrine maintenance is D1,000/student/month, which is sufficient to cover the salaries of the two maintenance workers who look after its upkeep, the cost of toilet paper and other related expenses. There are no separate facilities for teachers and staff.

The dry pit latrine block which is located near the two old classroom buildings is now closed and only its urinals are still in use. This installation did not receive UNICEF assistance.

Students do not have any direct involvement in the upkeep of the WATSAN installations, although they reportedly have a degree of responsibility in helping keep the yard clean.

Provincial officials reported that all new schools being built incorporate WATSAN facilities into the design itself. Also, all government employées, including teachers, are expected to have proper sanitation facilities at home. If they cannot afford the cost of the installation they are to be given access to loans by the school for

the purpose. The authorities are aware of the need for facilities for teachers and staff, but limited budgets require that priority be given to students. They indicated that the two schools visited by the team today are fairly representative of schools province-wide. They mentioned that students are more likely to be involved with latrine maintenance in rural than in urban areas. They indicated that most households in the district have pour flush latrines so most of the students are already familiar with proper usage of the school's latrine.

4.7.1.4 Water.

There is a second tubewell in the secondary school compound at a distance of 20 metres from the latrine. It originally served as a source of drinking water but it no longer has a handpump and it is left idle.

Both schools are in an area that is served by the town water mains, but neither has a piped connection to the system. At the primary school one person has the responsibility of providing drinking water to the students in their classrooms. A separate report indicated that only students from grades one to three are served in this way, while those from grades four and five must make their own arrangements. To this end she is paid the sum of D300,000/month to transport water from a household connection 500 metres from the school. The Principal estimated that 340 lpd are used at the school for drinking, but as the town supply is not metered a flat rate is paid and the quantity used is not an overriding consideration.

4.7.2 Conclusions.

1. The team saw no evidence of follow up to the experimental latrine project implemented by the Thai Binh Medical College.

2. The list of UNICEF assisted schools available at the central level does not accurately represent the actual situation in the field.

3. The local community is exceptionally supportive of the school and its activities, as illustrated by the fact that it was able to raise all of the funds required to build the new classroom block, and 80% of the funds required to install the latrine unit.

4. The yearly contributions made to the school, to the tune of D200,000/student, are exceptionally high.

5. It is possible to locally produce good quality educational aids, such as posters.

6. There appears to be a lack of training manuals at the school.

7. The installations at what is now the secondary school could relatively easily and cheaply be rehabilitated to a higher level of service.

8. The WATSAN installation at the primary school is entirely appropriate, although there is some doubt as to whether a four toilet unit is sufficiently large to meet the potential demand.

9. Students do not appear to have a major role to play in the upkeep of the WATSAN installations.

10. It would be advantageous to both schools if they were able to obtain a connection to the town's water mains.

4.7.3 Recommendations.

1. If not already done, evaluate the Thai Binh Medical College experiment and refer to the findings in developing future aspects of the project.

2. Develop a process for updating the central list of UNICEF assisted schools so that it accurately reflects the actual situation in the field.

3. Further discuss the project with commune leaders to try and identify the reasons why it appears to be so exceptionally supportive of the school and its activities. It may then be possible to encourage the development of similar attitudes in other assisted communities.

4. Support the local production of educational aids by teachers and students.

5. Identify the reasons for the apparent lack of training manuals and take steps to remedy the situation.

6. Rehabilitate the WATSAN installations at the secondary school.

7. Investigate the possibility of the two schools obtaining connections to the town's water mains.

4.8 *Case Study 8: Loc Ha School (Nam Dinh City, Nam Dinh)*

4.8.1 Observations and Findings.

Table 9: Facts on Loc Ha School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
8	2	453	high	low	high	Y*	Y*

* Adequate at the main campus. Situation at the satellite school unknown.

4.8.1.1 Planning and Management.

Loc Ha School is located in the western suburban area of Nam Dinh City and has good access to city services. It formerly was an integrated school and both the secondary and the primary school still share a large compound that has no physical division between the two schools. There are 453 students, 207 female and 246 male, none of whom are from ethnic minority groups. There are 19 teachers who teach in eight classrooms in two campuses.

A representative of the commune reported that parents pay, to the commune, a variable maintenance fee of approximately D7,000/student for each of the nine months of the school year, equivalent to approximately D63,000/student/school year. One of the parents interviewed said that he paid the sum of D 100,000 as a contribution to the maintenance fee on behalf of one of his children who is a student at the school. The school can access this fund for those purposes, and if additional funds should be required the commune will attempt to provide the additional funds from its own budget. There are three maintenance staff at the school, one who cleans the premises and two who look after water and sanitation.

15 of the 18 primary schools in the city have received project assistance from UNICEF. All 18 schools reportedly have a water supply, 12 of which are piped connections to the city mains, and six of which are UNICEF assisted tubewells equipped with pumps. The 15 assisted schools have latrines built according to the project's standard designs. At district level it is relatively easy to provide water to schools because of the ease of access to the city's water mains.

69 of the 290 primary schools in the province have to date received project assistance from UNICEF, and WATSAN installations are now complete at 59 of those sites. Facilities at the 10 schools being assisted in 1998 are all presently under construction. A total contribution of D 51 million was received from UNICEF for activities carried out in 1998, and the total amount has been transferred to the districts.

There are no UNICEF assisted AFPDs in the province although there are two very poor communes: Y Yen and Vu Ban. The provincial authorities have requested MPI for assistance to those communes but there has so far been no response.

The members of the project's Management Board reported that although they meet formally only twice a year they have regular informal contact to discuss project related issues. The Management Board made the following recommendations for follow up by the concerned ministries and UNICEF.

1- Increase the amount of UNICEF funding / school.
2- Resume Management Board funding as it was prior to 1996.
3- Provide funds for maintenance of the WATSAN facilities at schools.
4- Provide more support to hygiene education at the provincial level.
5- Increase the number of project-assisted schools in the province.

6- Select one or more AFPDs for the province, with the selection preferably left up to the provincial authorities.

4.8.1.2 Hygiene Education.

The level of awareness among the students interviewed of the importance of proper hygiene is rated as high, and the Principal said that high literacy rates amongst householders results in them being very supportive of the project.

It was reported that 100% of the students have the 1998 edition of the health education textbook. One of the parents interviewed said that he paid approximately D 85,000 for a complete set of 1998 textbooks. Posters apparently available in five sets for grade one only.

There is a high concentration of health facilities such as hospitals and clinics in the district, and this helps with the propagation of WATSAN knowledge and technology.

The commune reportedly does not receive any assistance from higher levels in terms of funds or materials required to conduct health education campaigns, but they do have access to provincial level technical assistance at no cost. A survey of WATSAN conditions at schools was reportedly carried out by the Medical Preventive Centre in collaboration with PDOET but no details of the survey were immediately available.

It was reported that health education training courses for teachers are periodically carried out at the school in collaboration with the commune's clinic. The teachers have not participated in such courses held at the district or provincial levels.

4.8.1.3 Sanitation.

The sanitation facilities at this main campus are adequate. The latrine is a two toilet unit whose design was modified so that the entrances to the urinals are on the side rather than in front, which prevents those passing by from seeing in. As was the case with most of the other sites visited the installation had been given special care just before the team's visit. There were new wooden doors on the toilets and the installation was freshly whitewashed and painted, which makes it difficult to assess the actual level of use of the latrine. Nevertheless, the quality of construction was good, and the facility is available to all who want to use it. The urinals drain to a nearby water filled canal. It was not possible to determine the manner in which the septic tank effluent is disposed of. Water for the latrine is provided by a CERWASS installed tubewell equipped with a "Number Six" handpump and iron removal filter. A member of the school's staff is responsible for ensuring that water is pumped to the latrine tanks and that the premises are kept clean. It was reported that the cost of the installation was D 16 million, of which approximately D 4 million were contributed by UNICEF and D 12 million by the commune and Parents' Association.

Householders are said to make use of fresh excreta to help raise fish but not as fertiliser. It was reported that 80% of the commune's households have latrines, most of which are of the pour flush type.

4.8.1.4 Water.

The supply of water for both drinking and for the latrine at the main campus is good. Drinking water is obtained from a piped connection to the city's mains. Water flows into a small underground reservoir with a metal cover. A special valve arrangement automatically shuts the inflow of water when the level in the reservoir reaches a predetermined height and switches on when the level drops. The cost of the piped connection was D 1.3 million, and the cost of water is a flat D 50,000 as the connection is not metered. The responsible staff member takes water from the reservoir, boils it and places it in the classrooms. It was also reported that she provides soap for hand washing to students who request it. All these costs are covered by the students' parents.

It was reported that the use of rainwater as a source of drinking water is common throughout the province. In this commune it is estimated that 30% of the households have piped connections to the mains, 40% have UNICEF wells with handpump or electric pump and 30% have dug wells.

There are reportedly 14,000 tubewells in the province, of which 8,000 were installed with UNICEF assistance and the remainder with local funds. There province has experienced private drilling teams.

4.8.2 Conclusions.

1. This school, which is located in an urban area, has better access to services and facilities than similar schools in rural areas.

2. The commune and Parents' Association are highly supportive of the project and of the school in general. Their support includes raising locally a large proportion of the funds that are required by the school.

3. Project assistance to the province has been considerable. 83% of the primary schools in the city, and 24% of the primary schools in the province have received assistance. 57% of the tubewells installed to date in the province were put in place with UNICEF assistance.

4. The provincial authorities are of the opinion that there should be a UNICEF assisted AFPD in the province.

5. The Provincial Project Management Board has a list of six issues which it would like to be addressed at the central level.

6. The availability of health education textbooks is high, while the availability of educational aids is low.

7. Arrangements for both water and sanitation at the school's main campus are adequate, although a few minor improvements could be carried out. No information was obtained on WATSAN arrangements at the satellite school.

8. Although the proportion of households that have latrines is reported to be high, additional information on the possible role of excreta as fertiliser would be of interest.

9. A variety of water supply technologies are used in the commune, and rainwater appears to be extensively used for drinking.

4.8.3 Recommendations.

1. Assess the geographical distribution of project assistance since 1991.

2. Discuss the list of six recommendations made by the Provincial Management Board, and in particular the view that the province should have an AFPD.

4.9 Case Study 9: Cam Nhuong School (Cam Xuyen District, Ha Tinh)

4.9.1 Observations and Findings.

Table 10: Facts on Cam Nhuong School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
9	1	1432*	97	low	high	N**	Y***

* 1432 primary + 720 secondary students + 75 teachers and staff = 2227 WATSAN users.
** Construction quality OK but with 4 toilet units it likely is too small to meet the potential demand.
*** May not provide sufficient water for all potential users during the dry season.

4.9.1.1 Planning and Management.

Cam Nhuong School is located in a coastal area 20 kms. S-E of Ha Tinh City. It is a very large school with 1432 primary school and 720 secondary school students. The school was de-integrated in 1991 but both schools share the existing WATSAN facilities. There are 41 teachers who teach 36 classes of primary school students in 18 classrooms. There are no students from ethnic minority groups. There is only one campus.

15 of the 33 primary schools in the district (46%), and 132 of the 309 primary schools in the province (43%) reportedly have received project assistance. Two new schools were built and equipped with WATSAN facilities with Japanese ODA.

Project assistance to the 132 schools can be broken down year-wise as follows: 92 schools from 1991 to 1996; 27 schools in 1997 (13 with UNICEF/MOET assistance and 14 with provincial funds); and 13 schools in 1998 (10 schools in three AFA districts with UNICEF/MOET assistance and three schools with provincial funds).

Facilities at eight of the 10 centrally assisted schools for 1998 are under construction and two are already complete. The sum of D 51 million for the purpose was received from UNICEF in August 1998 and transferred to the respective schools. It was mentioned that the sum of D 30 million which is expected from MOET in support of activities at those 10 schools had not yet been received.

A one day meeting was held on 12 August 1998 with officials representing the 10 schools selected for the year to inform them of the level of funds approved, accounting procedures and other related matters. Participants in the meeting included school principals, commune chiefs, PDOET/AFPD representatives and representatives of the concerned district offices. A training manual prepared by MOET/UNICEF was used for reference.

It was reported that once the list of schools to be assisted in a given year has been finalised by the PDOET it is sent to the DOH and CERWASS for their information and follow up. The DOH and CERWASS are then expected to arrange to implement those project components for which they are responsible.

The Management Board members mentioned that the project faces three main difficulties: 1- water source unavailability at schools; 2- poor handpump quality; 3- poverty. Some of the schools selected for assistance over the period of the 1991-92 school year declined to participate in the project because they were unable to raise the required local contribution. The Board assists some poorer schools by sometimes providing funds taken from the provincial construction fund, and in some cases it makes use of funds saved by the DOE from various training courses that are conducted in the province. It is difficult for schools, and the poorer ones in particular, to meet requirements for obtaining loans.

The Board members recommended that the fund previously allocated by UNICEF to assist project monitoring, which was suspended in 1996, be reinstated. They mentioned that they are unaware of the reasons why the fund was discontinued.

4.9.1.2 Hygiene Education.

The Principal estimated that 97% of the students and all the teachers have the required health education textbooks. Only nine centrally produced posters and approximately 30 health related drawings were seen. No visual aids were on display in the classrooms. The level of awareness of hygiene related issues among the students interviewed is rated as high.

4.9.1.3 Sanitation.

The quality of the latrine installation as it is good. The installation was completed in 1992; it is the first MOET/UNICEF assisted school latrine in the province. It was built with three tons of cement and 60 KGs. of rebars from UNICEF, the value of which was estimated at D 3 million.

The latrine is a four toilet unit with no distinction made for use by females or males. The general quality of construction is good. The block was freshly whitewashed, the wooden toilet doors were freshly painted and the concrete urinal drains had been newly repaired. Brushes had been placed in the toilets. An electric pump with a temporary looking electrical connection had very recently been installed on the latrine's tubewell and was connected by a hose pipe to the toilets' water tank. The tubewell is also equipped with a "Number Six" handpump. The urinals drain to a newly dug pit located in a playground immediately across the school's boundary fence. It was reported that one of the latrine's tanks is bottomless to allow infiltration but it was not possible to verify that statement. The entire area is very sandy and water infiltrates rapidly. The students interviewed reported regular use of the latrine, which is also used by the teachers and staff as they have no installation of their own. The students are not directly involved in the maintenance of the WATSAN facilities as a staff member has been given this responsibility.

There is a separate urinal in another part of the compound which is used only by males as it provides no privacy. The urine drains to the sandy surface into which it infiltrates.

The commune chief estimated that 10% of the commune's 2,300 households possess a latrine of one type or another. He mentioned that the commune's residents traditionally resort to open defecation on the beach. Separate estimates indicated that up to 50% of the households located in the immediate school area have a pour flush latrine with infiltration tank but this figure was not verified.

It was reported that a typical project assisted school latrine in the province costs approximately D 8.5 million, of which D 3.4 million are provided by MOET and D 5.1 million by UNICEF.

The commune chief reported that a consultant from a Danish agency, which he was unable to name, recently visited the commune in the company of a UNICEF WATSAN staff member. The purpose of their visit was to assess the drinking water situation, but the commune authorities took the opportunity to provide information on the sanitation situation as well. Designs for three latrine installations were subsequently prepared and submitted to the agency: one each for the school, the market and the seafood processing area. It was reported that the consultant subsequently approved the designs for the two latter locations, while the former is being redesigned as the planned capacity was thought to be too small. The agency has not yet approved or committed any funding for these projects.

4.9.1.4 Water.

There are two tubewells at the school. One of them is part of the latrine installation and provides water solely for that purpose. The second is situated at a distance of 20 metres from the latrine, between the latrine and the school. Both the latrine and the well that provides drinking water are shared by the primary and secondary schools.

The second well, which supplies drinking water, is 16 metres in depth. It is equipped with a "Number Six" handpump and it has a proper concrete platform which prevents seepage into the well along the rising main. The GI pipe is joined to the pump with strips of rubber tubing rather than with flanges. No arrangement is made for runoff from the platform. Water from the well has no iron or chloride content that is easily noticeable to the taste. The students interviewed said they do not drink water directly from the well as it is not boiled. One of the school's staff is responsible for boiling water from the well and distributing it to the students.

The provincial authorities mentioned that there is no formal requirement that CERWASS be directly involved in the provision of water to schools, though they normally are. An alternative arrangement that meets the requirements is also acceptable.

The provincial authorities reported that since 1991 each school has contributed the sum of between D 500,000 and D 600,000 for the installation of a water point at the school, and that in a recent meeting a CERWASS official said that this amount would eventually be reimbursed to the schools by CERWASS.

Various drinking water technologies are used in the commune. There are tubewell, dug wells, rainwater harvesting, and in one case a small system where water is pumped from a tubewell to a five cum. tank on the roof of the clinic, from which it is distributed by gravity flow. The type of handpump that is generally used is the "Number Six" type which is manufactured in Vinh City, but this model is reported to break easily. Some householders, and possibly some schools, install the locally made "concrete pump" but they are unsure whether this pump meets government standards for handpumps. The cost of installing a dug well is said to range from D 600,000 to D 10 million, while the cost of installing a tubewell is approximately D 300,000.

4.9.2 Conclusions.

1. Nearly one half of the primary schools in the province have to date received assistance from the project.
2. The installation of WATSAN facilities at the 10 schools planned for 1998 appears to be progressing well. The UNICEF component of the funding had been received and distributed, but the MOET contribution was still being awaited.
3. It appears that DOH and CERWASS are not directly involved in the selection of schools to be assisted.
4. Some of the schools selected for assistance decline to participate in the project because they are unable to raise the required local contribution.
5. The Management Board Members see a need for a fund for project monitoring at the provincial level.
6. The level of awareness among students interviewed of the need for proper hygiene is high, the rate of health education textbook ownership is high, but the availability of educational aids is low.
7. The present latrine installation is in all likelihood too small to accommodate the demand from 2,230 potential users, as it serves both the primary and secondary school students and their teachers.
8. Large schools such as this require particular care at the project preparation stage to ensure that the type of installation to be provided is adequate to meet the potential demand.
9. At least some of the assisted schools appear to feel compelled to install electric pumps to provide water for the latrine.
10. The proportion of households with proper latrines appears low, and open defecation on the beach is apparently a common practice.
11. The level of the local contribution to the project in this province appears to be relatively low.
12. At least two other external support agencies are reportedly involved with school WATSAN projects in the province.

13. If schools are expected to contribute a sum of up to D 600,000 to CERWASS for the installation of a water point at the school, the purpose of the contribution is not clear.

14. The provincial authorities perceive certain constraints in the choice of handpump for installation at schools, and in the quality of one brand of "Number Six" pumps.

15. Platform and urinal runoff is not a major constraint, as the runoff indiscriminately infiltrates into the sand, but the installation of a seepage pit would nevertheless be desirable.

16. A distance of 20 metres between latrine and well in sandy soil such as this may be too close.

4.9.3 Recommendations.

1. Reassess the WATSAN requirements at the school and upgrade the facilities if and as required to meet the demand.

2. Treat WATSAN activities at assisted schools as individual sub-projects that require their own technical specifications.

3. Do not specify that the latrine at every project assisted school should be equipped with an electric pump. In some cases a handpump may be more appropriate, and in other instances the school concerned may prefer to upgrade its facilities at its own pace.

4. Encourage the residents of the community to abandon open air defecation and install proper household latrines.

5. Encourage the project's end-users to increase their level of contribution to the project.

6. Clarify whether schools are expected to make cash contributions to CERWASS for the installation of a water point at the school and, if so, the purpose of the contributions.

7. Support the adoption of the "concrete handpump" and investigate the reported low quality of the Vinh-made "Number Six" handpump.

4.10 Case Study 10: Cam Tuyen School (Cam Lo District, Quang Tri)

4.10.1 Observations and Findings.

Table 11: Facts on Cam Tuyen Secondary School.*

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
10A	1	251	n/a**	n/a**	medium	yes	yes

* The facts relate to the secondary school, which is where the project assisted facilities are located
** Health education is not included in the secondary school curriculum.

Table 12: Facts on Cam Tuyen Primary School.*

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
10B	4	751	90	medium	medium	yes**	yes***

* De-integrated from the secondary school in August 1998.
** Estimated cost of the latrine installation, excluding the water supply, is D 100 million.
*** Quality of construction very good but there was some question as to water quality.

4.10.1.1 Planning and Management.

Cam Tuyen School is located in the foothills, 25 kms. West of Dong Ha Town. Project assistance was provided to the school for the 1993/94 school year when it was still an integrated school, having been de-integrated in August 1998. The project assisted WATSAN facilities are located at what is now the secondary school. The current primary school has four campuses, the main one a building recently completed with Japanese ODA, located one km. from the secondary school. The team visited both the secondary school and the primary school's main campus.

The secondary school has 251 students in six classes who study in six classrooms. The primary school has 751students, 34 of whom are from ethnic minority groups: there are 30 teachers who teach 26 classes in 14 classrooms.

Quang Tri Province was up until 1989 a part of Binh Tri Thien Province.

There are 156 primary schools in the province, including seven schools which are still integrated (primary and secondary together) and one school for disabled children. The provincial authorities estimated that 30% of the province's primary schools have more than one campus, with the maximum number being six.

The Provincial Management Board made a number of project related recommendations.

1- UNICEF should fund the entire cost of the project at very poor schools, as it is prohibitively difficult to locally mobilise funds in those communities.
2- There should be clearer guidelines from MOET and UNICEF, including a better indication of the amounts of funds to be made available.
3- The way in which central level funds are to be broken down should be more clearly specified according to the project's various components: hygiene education, sanitation and water.

4- UNICEF funds should not be distributed evenly amongst the assisted schools, because requirements vary from place to place according to the number of students at each school, geological conditions, etc.
5- The manner in which UNICEF funds are to be distributed should be left up to the Provincial Management Board, who would decide which schools would receive funds and in what amount. It was mentioned that in case the amount of funding is too small then the desired positive effect of the catalyst may not be achieved.

4.10.1.2 Hygiene Education.

The level of awareness of the importance of proper hygiene among the primary school students interviewed is not as high as it was at most of the other schools visited. Their basic knowledge of hygiene matters is somewhat vague. They know that dirty water is not safe to drink, and some of them reported having dry pit latrines at home. The Principal reported that most students do not have latrines at home and as a result they find it difficult to use the latrine at the school.

The Management Board estimates that 90% of students in the province have the required health education texts. It was reported that those who do not have texts cannot afford them, in which case special arrangements are made whenever possible, such as making it possible for the students to borrow books. The revised texts for grades four and five are in short supply. Most teachers have the required reference texts, although those teaching grades four and five have more difficulty in getting the texts than teachers in lower grades.

The agency "Plan International" recently provided 300 sets of standard textbooks to their foster children in primary school and to 40 of their foster children in secondary school. The new Japanese assisted primary school has a well organised library which prominently displays a list of available posters.

It was reported that the DOH has carried out health education campaigns with UNICEF assistance, but details of the campaigns were not immediately available.

4.10.1.3 Sanitation.

The project assisted WATSAN installations are located at the secondary school. The quality of construction of the latrine unit is good, built according to the standard design for a two toilet unit. Water is hand carried to small tanks in the urinal areas, from which water flows to the hand washing trough. The outlet taps are placed 10 cms. above the base of the tank with the result that water stops flowing out when the tank is still half full. It was not possible to verify the structure of the septic tank, but it appears that no specific arrangement was made for effluent infiltration. The soil in the area has a high clay content and it is likely that a high rate of use of the toilets would result in the rapid filling up of the septic tank with liquid. The urinals drain to the surface through openings in the latrine's back wall. It was reported that a high water table in the area during the rainy season makes drainage difficult.

The 10 teachers who board at the school obtain water from one of the two dug wells and they use the school's latrine.

The latrine at the Japanese assisted school was estimated to have cost approximately D 100 million, excluding the cost of its water supply. It consists of two separate covered and enclosed units, one each for males and females. There is a large hand washing trough at the front of the structure. Water is pumped from the main reservoir to tanks on the roof of the latrine installation, from which it flows by gravity to the toilets, urinals and hand washing trough. The septic tank and the separate infiltration tank are located at the back of the latrine block.

It was reported that 129 of the province's 156 primary schools (83%) have a proper latrine: 67 are of the septic tank type; 16 are pour flush with infiltration tank ("semi-septic"); 21 are dry pit and the remaining 25 are of unspecified other types. The 67 septic tank latrines are project assisted (52%); the number includes the installations currently under construction at the 10 schools selected for assistance in 1998.

The funds allocated by MOET from 1992 to 1997 amounted to D 2 million / school, while in 1998 the amount was increased to D 4 million / school. The funds are transferred to the district and the school

principals collect the funds from there, which is viewed locally as being the most appropriate arrangement. The UNICEF funds allocated for 1998 have already been received.

It was estimated that the average cost of installing a latrine at a school in the province is D 7 to 8 million for a two toilet unit; D 12 million for a four toilet unit and D 20 million for a six toilet unit. Prior to 1996, when UNICEF was still providing its contribution in kind rather than in cash, the cost breakdown for a two toilet unit was D 8,415,000 plus the in-kind contribution of three tons of cement and 60 KGs. of rebars from UNICEF. The cash component was reportedly broken down as follows: 27% from PDOET, 22% from DDOE and 51% from the commune and the Parents' Association.

The PDOET Director and the DDOE representative both said that there should be a variety of latrine designs on hand to allow an appropriate choice to be made based on local considerations. The choice should include a design for raising latrines in flood prone areas as the flooding of latrines is a problem in some parts of the province.

The DOH representative reported that 60% of the province's primary school students received Mebendazole tablets as part of a UNICEF supported de-worming project but that funding for the project was discontinued in 1996.

The commune authorities think that access to loans for latrine construction would be useful provided that the repayment terms were favourable and interest rates were low.

4.10.1.4 Water.

There are two project assisted dug wells at the secondary school. The first is located five metres in front of the latrine installation and the second is 20 metres away. The first well serves mainly to provide water for the latrine. Its water is clear but reports indicate that it may contain iron. Water is extracted by bucket, but the Principal mentioned that he would prefer if an electric pump were installed on the well so that water could be pumped to the latrine. The well's drainage platform is of good quality. Drinking water is taken from the second dug well which is located near the building where 10 of the school's teachers live.

At the primary school's main campus water is pumped by electric pump from a sealed dug well to a large reservoir, from which it is pumped by a second electric pump to the tanks that are located on the roof of the latrine block. The well is situated approximately 10 metres from the latrine's tanks. The well water is now being tested and will not be used for drinking until the test results have been returned. In the meantime drinking water is obtained from the wells of families who live in the neighbourhood of the school.

It was reported that the average depth of dug wells in the commune is eight metres and that some of the wells dry up during the dry season, although the wells located at the secondary school have always provided a supply of water year round.

123 of the province's 156 schools (79%) has a safe water supply that makes use of a variety of technologies: 21 installations are tubewells with handpumps, 59 are dug wells, six use rainwater harvesting, three have gravity flow systems and 34 use other techniques of unspecified nature. It was estimated that of the 123 installations, 43 are fully functional (35%), 45 are partly functional (37%) and 35 are unused (28%). It was reported that 90 of the 156 schools provide boiled water to at least some of their students: the schools concentrate on providing water to students in grades three to five as it is relatively easy for the grade one and two students to obtain water from neighbouring households.

It appears that a total of 81 (21 tubewells, 59 dug wells and one gravity flow system) (66%) of the 123 installations to date are project assisted. CERWASS installed the 59 dug wells, the 21 handpump equipped tubewells and the gravity flow system. A minimum of 300 KGs. and a maximum quantity of 600 KGs. of cement were provided to CERWASS by UNICEF for the installation of the 59 dug wells. The funds required to install water points at the remaining 42 schools were raised locally by the community and the school, and they paid the private contractors directly for the cost of the installations.

4.10.2 Conclusions.

1. The Provincial Management Board has made five recommendations for consideration by the National Management Board and UNICEF.

2. Overall health education textbook availability is high but there appear to be shortages of the required texts for teachers and students grades four and five.

3. At least two external support agencies other than UNICEF are involved with school sanitation in the province: Japanese ODA and Plan International.

4. The project assisted WATSAN installations at the secondary school are adequate.

5. It is relatively easy to hand carry water to the latrine.

6. The WATSAN installations at the primary school are on a different scale than are those assisted by the MOET/UNICEF project.

7. As a very high proportion of the province's primary schools are reported to have proper latrines (83%) and safe water (79%) it would be of interest to obtain specific technical information on the design, rate of utilisation and appropriateness of those latrines and water installations.

8. There is a locally expressed need at the provincial level for a variety of technical designs for latrines that can be built to suit a range of conditions and requirements.

9. Continuing interest was expressed in de-worming projects for primary school students.

10. 34% of the water installations at schools (42 of 123 installations) were reportedly put in place by private contractors employed directly for the purpose by the schools concerned, without CERWASS involvement.

4.10.3 Recommendations.

1. Discuss the five recommendations made by the Provincial Management Board.

2. Investigate the apparent shortage of health education textbooks for grade four and five teachers and students.

3. The school should not feel compelled to install an electric pump. In this situation it is relatively easy to hand carry water from the well to the latrine.

4. Monitor the cost-benefits of the WATSAN installations put in place with Japanese ODA, and compare the effectiveness of those installations with those assisted by the MOET/UNICEF project.

5. Carry out a more detailed technical survey of the water and sanitation installations completed to date at the province's primary schools.

6. Discuss the possibility of resuming assistance to de-worming projects for primary school students.

7. Encourage and support the further development of private contractors who are interested in the WATSAN sector.

4.11 Case Study 11: Hoa Tien School (Hoa Vang District, Da Nang City)

4.11.1 Observations and Findings.

Table 13: Facts on Hoa Tien School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
11	6	904	100	medium	high	no*	no**

* The unit in place was well built but it likely is too small for the high number of potential users. No installations at the 5 satellite schools.
** Two tubewells on campus, but one is out of order and the other is too far away for the latrine. OK for drinking. No proper water facilities at the satellite schools.

4.11.1.1 Planning and Management.

Hoa Tien School is located 25 kms. to the S-SW of Da Nang City. It consists of two classroom blocks, one of which is relatively new. The clinic next door formerly shared a compound with the school but the property has recently been divided up.

There are six campuses of which the one visited is the main one. There are 29 teachers for 904 students (450 female and 454 male); none of the students are from ethnic minority groups. 482 of the students study at the main campus.

The Management Board members requested that official guidelines or letters from the central level be provided to clearly explain which parties are to be involved in the project and the area of responsibility of each of those parties.

4.11.1.2 Hygiene Education.

It was reported that all of the students and teachers at the school have the required health education textbooks, and the level of awareness of hygiene related matters of the students interviewed was high. The school has a very good library with glass fronted bookcases and a separate area dedicated to it, but the number of health related posters on hand was low. There are pamphlets which address various health concerns, such as disease transmission via insects, or AIDS. There was a large number of posters on other topics which were kept rolled up in a box thus making them difficult to refer to.

A training course on health education and life skills education was carried out for two teachers from every school in the province, after which they were expected to pass on their newly acquired knowledge to their fellow teachers.

4.11.1.3 Sanitation.

The latrine was installed with project assistance in 1993 with D 5,631,000 were received from external sources and D 1.800,000 from the commune and parents. The Principal was uncertain as to the source of the external funds. The latrine installation is 10 metres from one of the classroom blocks, between the school and the clinic. The quality of construction is good and is according to the standard two toilet design with the entrances facing the front. Both the outer entrances and the toilet doors themselves have sturdy wooden doors.

There is a water tank on the roof of the latrine block with a capacity of approximately 0.5 cum. Water flows by gravity from the tank through recently installed PVC pipes that drain the urinals and provide water for flushing the toilets; the PVC pipe replaces the GI pipe which had been installed at the time of construction. There is no permanent water inlet for the tank, and the present arrangement is that water is periodically pumped from a tubewell equipped with a one H.P. electric pump. The well and pump are located at the opposite end of the classroom block from the latrine, with a distance of about 60 metres separating the two installations. When water is required at the latrine a hosepipe is temporarily connected to the electric pump, and removed when the latrine's tank has been filled.

There are four taps at the hand-washing trough. Urine drains into the tanks at the back via two concrete drainage channels. There is a chute in each toilet unit for used toilet paper which is stored in a compartment behind the toilet, above the septic tank: it was reported that the used paper is periodically removed and buried. The cover of the latrine's tank was removed so that its internal structure could be inspected. The tank is divided into three smaller tanks, the initial tank having a storage capacity of approximately 1.5 cum.; the two smaller adjoining tanks each have a storage capacity of about 0.7 cum. All three tanks were filled with what appeared mainly to be water. There was no indication of a layer of foam on the surface which is an indicator of a septic tank that is functioning as it is expected to. The effluent from the septic tank, which includes the runoff from the urinals, drains into a small concrete walled infiltration tank. Because of the sandy nature of the soil in the area the rate of infiltration from that tank is very high.

It was reported that it is the school's guard who is responsible for pumping water to the latrine and keeping the installation clean. The students are said not to be involved in the maintenance of the facilities.

It was reported that none of the satellite schools have latrines and the authorities requested that assistance be provided for the installation of WATSAN facilities at those schools. Separate facilities were also requested for the use of teachers and staff.

Some cases of dengue fever were reported in the community.

4.11.1.4 Water.

There are two tubewells in the school compound and one in what formerly was part of the compound. The latter was installed and equipped with a handpump, with project assistance, in 1991 in the area between the school and the clinic to provide water to both of those institutions. When the latrine was built at the school in 1993 a 32 mm HDP pipe was laid from the well to pump water to the latrine. At some later date the ownership of the property was reportedly divided up between the clinic and the school in such a way that the well was on the clinic's property. A fence now separates both compounds, and an electric pump on the well provides water to the clinic only. The school no longer has access to that well.

In order to provide a new water source for the latrine, another tubewell was subsequently installed approximately 20 metres from the latrine block by OXFAM Belgium. This well is equipped with a cast iron handpump which it was not possible to identify, but it is not a "Number Six" and it is reportedly made in HCMC. The pump's handle is at right angles to the spout on the horizontal plane. The pump was out of order but according to the Principal the tubewell remains in good condition and could once again produce water if the pump were repaired or if a new one were installed.

Water for both drinking and for the latrine is now pumped from the tubewell that is located at the opposite end of the classroom block from the latrine installation. This well appears to produce good quality water in sufficient quantity but the distance from the latrine makes it an inconvenient water source for the latrine.

Metal water filters with ceramic candles were placed outside each classroom building to provide drinking water for the students. The filters appeared new and it is possible that they were put in place only very recently. The school's security guard is responsible for ensuring that the filters are periodically filled with water. The water that is placed in the filters is reportedly not boiled. The candles are said to contain a chemical that disinfects the water as it is being filtered and that, for this reason, the candles must be replaced every two months or so after all of the chemical has been used up. The cost of the filter is D 270,000 and the required set of four candles costs D 40,000.

In addition to the well that was installed at the school, OXFAM Belgium has reportedly assisted with the installation of 85 latrines and 150 tubewells at households in the commune.

As electricity is now available throughout the commune there is a general tendency to want to replace handpumps with electric pumps.

4.11.2 Conclusions.

1. The members of the Provincial Management Board are apparently not fully aware of the number of parties that are expected to be involved with the project, and the expected role of each of those parties.

2. The quantity and type of educational aids available for health education classes at the school appears to be inadequate.

3. The quality of construction of the latrine is good, but it only has two toilet units. The size and design of the latrine's tank may prevent it from functioning as a septic tank should.

4. The latrine's current water supply is inadequate and the roof tank is too small to provide sufficient storage capacity.

5. The five satellite schools reportedly do not have adequate WATSAN facilities.

6. The dividing up of property apparently also affects water use rights.

7. The filtering of water alone does not necessarily make it safe to drink. After filtering the water must also be disinfected. The reported disinfecting role of the filters' candles is unclear.

8. OXFAM Belgium appears to be actively involved with WATSAN activities in this commune.

4.11.3 Recommendations.

1. Discuss with the Provincial Management Board the number of parties involved in the project and their respective roles in it.

2. Investigate in more detail the design of the latrine's septic tank to see if it is able to function as a septic tank should.

3. Ensure that a permanent water source is made available for the latrine.

4. Address the reported WATSAN needs at the school's five satellite campuses.

5. Assess the extent to which issues related to property rights can have a direct effect on water use rights.

6. Ensure that all concerned parties are aware of the fact that filtering water is not a substitute for treating it, and *vice versa*.

7. Study the OXFAM Belgium project to see if some of the lessons they have learned can be applied to the MOET/UNICEF project.

4.12 Case Study 12: Tinh Minh School (Son Tinh District, Quang Ngai)

4.12.1 Observations and Findings.

Table 14: Facts on Tinh Minh School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
12	1	800	75	low	medium	no*	yes**

* Quality of construction good, but only two toilet unit which is likely too small for the number of potential users.
** Source adequate but a more permanent pumping arrangement is desirable.

4.12.1.1 Planning and Management.

Tinh Minh School is located 30 kms. West of Quang Ngai Town. It was de-integrated in 1996 and it has only one campus. There are 800 students, none of whom belong to ethnic minority groups. There are 23 teachers who teach 23 classes in two shifts, in 14 classrooms.

The school gets some financial support from former residents of the commune who now live in HCMC. Strong support is also given by the Parents' Committee, who raise funds for maintenance.

The commune has 6,200 inhabitants who live in 1643 households. Funds received at the provincial level are channelled directly to the commune, which is then responsible for project implementation under the supervision of the province's Project Management Board.

All of the 26 primary schools in the district are reported to have WATSAN facilities, but it was not possible to determine the proportion of those schools that received SSHEP assistance. It was estimated by PDOET officials that the district's primary schools have an average of four campuses each.

The province has 226 primary schools, of which 127 (56%) of the schools' main campuses have received project assistance.

For the years 1997 and 1998 the project received a combined total of D 1.6 million from MOET Programme Number Eight, D 3.3 million from the District Education Office and D 3.3 million from the commune and the Parents' Association, in addition to the UNICEF contribution.

The province received a total of D 2 billion from the central level for global activities in the education sector in 1998. A decision was made at the provincial level to allocate the sum of D 90 million from this fund to the SSHEP. The proposal was developed at the provincial level and then forwarded to MOET for approval.

The list that was made available to the team at the central level includes 15 schools for which project assistance was proposed in 1998. All of those schools are located in Son Tinh District. The list of approved projects for 1998, approved on 12 March 1998, shows 16 schools, 13 of which are located in Son Tinh District and three in Mo Duc District.

The number of schools that are actually being assisted by the project in 1998 is 45 rather than 16. The reason for this is that the provincial authorities decided to divide the funds obtained from the central level, including those from UNICEF, between a larger number of schools than was initially approved. They had noticed that when the level of external assistance increases the level of end-user participation and interest tends to decrease. Their conclusion was that providing a smaller proportion of the required funding from outside the

community would encourage the end users to become more actively involved in the project. The authorities estimated that they received the equivalent of $6,000 from UNICEF for 1998, on the basis of $400/school for 15 schools. By dividing the total by 45 schools instead of by 15, each school would on average have received the approximate sum of $130, or D 1.7 million / school from UNICEF.

The WATSAN facilities at all 45 schools are reported to be complete.

The Management Board members are determined that all primary schools in the province will eventually have WATSAN facilities, and they attach a degree of urgency to achieving this goal . They mentioned that the province intends to meet its target irrespectively of whether it receives central level assistance for the purpose. They proposed that investments in WATSAN for schools include the satellite schools as well as the main campuses.

There is reportedly very good collaboration between the Board members, but it appears that both DOH and CERWASS are not directly involved in project planning and in the site selection process, and that the two latter agencies are expected to respond to project related requests made by PDOET. It was mentioned that once the list of schools to be assisted has been finalised it is forwarded to DOH and CERWASS by PDOET for appropriate action and follow up on their part.

4.12.1.2 Hygiene Education.

The level of awareness of the importance of good hygiene was assessed as medium. The students interviewed knew that mosquitoes can spread sickness but they were unable to explain in what way. They knew the importance of brushing teeth and of washing with soap. It was difficult to determine whether they had access to latrines at home.

The rate of coverage of health textbooks was estimated at 75%. It was reported that the remainder do not have texts because they cannot afford them, or because they sometimes are unavailable locally. All of the teachers are said to possess the required reference textbooks. Orders for textbooks are based on demand. Teachers do keep a supply of textbooks which students can buy, but only at those times of the year when demand is high, for example at registration time. At other times the books need to be bought at bookstores. There are bookstores at the commune and district level but availability appears to unpredictable, and at least one report indicated that the books sometimes are only available in Quang Ngai Town.

Health textbooks are said to be more readily available in coastal communes than in those located in mountainous areas. The provincial authorities are considering the introduction of a textbook loan scheme in the latter areas in order to make them more accessible to students who cannot afford to buy them.

No posters were seen at the school, but there are reportedly two complete sets of health related posters which are used by the teachers in class.

4.12.1.3 Sanitation.

The commune has three schools: a kindergarten and a secondary school, neither of which have WATSAN facilities, and the primary school which was assisted by SSHEP. The secondary school is located next door to the primary school, but each has its own compound and facilities are not shared.

The WATSAN facilities at the primary school were completed in May 1998. The latrine is used both by students and teachers, including the 10 teachers who live at the school. It was built by PDOET's mobile construction team which was required to use its own funds for the purpose and subsequently claim reimbursement when central level funds were received. The latrine is situated 30 metres behind one of the blocks of classrooms, at a level that is approximately one metre below the level of the classrooms. A raised path of packed earth leads from the classroom area to the latrine.

The latrine is a two toilet unit with side entrances to the urinals. The quality of construction is good. There is a chute in each of the toilet units for used toiled paper, which is stored in a small container at the back, and which is said to periodically be disposed of burning. Waste water from the hand washing trough runs into the urinal and from there, along with the urine, drains into small open infiltration tanks at the back. A small concrete tank was built into each of the urinals' outer walls so that water poured into it flows to the inner

tank by gravity, an arrangement that does not appear necessary as it would be relatively easy to pour water directly into the inner tank. There are metal doors on the entrances to the urinals, which are meant to be locked outside school hours. It was reported that one of the latrine's tanks was built with an open floor to allow infiltration into the soil, and that the tank has no effluent runoff pipe.

The school's guard is responsible for cleaning the latrine, while grade four and five students are charged with the cleaning of the latrine's surroundings and of the cleanliness of the school yard.

The local authorities expressed the view that the two toilet unit that is in place is too small to accommodate the rush of students who use it during break periods, or to allow for future school expansion.

The DDOE was responsible for the construction of the latrine, which was built at a cost of D 17.4 million which is broken down approximately as follows: D 6.6 million from UNICEF, D 6 million from MOET and D 5.4 million from the parents.

It was reported that the residents of this commune favour the installation of dry pit latrines at home, although it was not possible to determine the proportion of households that have in fact installed those latrines. It was estimated that 5% of the households have pour flush latrines. The proportion is said to be low because the families cannot afford the latter type, while other families fear they may pollute the environment. Interest was expressed in obtaining additional information on different types of latrine designs.

Provincial officials reported that they initially referred to the standard designs, but that they later on started making modifications to the design, for example by adding roof tanks to the latrine blocks, a change which was made in 1998.

The Board estimated that a four toilet latrine unit build according to standard specifications costs from D 12 million to D 14 million, while a two toilet unit costs D 8.5 million. Since 1993 the practice in this province has been to build two toilet units where four toilet units would normally be required in order to reduce the cost and leave funds available for the installation of latrines at additional schools.

The Board members mentioned that it is now time to pay more attention to the quality of the installations and not just to their quantity. It is said that in some urban areas funds raised locally are used to build school latrines that cost up to D 70 million / installation. They also mentioned that the province now has a fund that is used to assist with the maintenance of latrines built in the past with SSHEP inputs.

4.12.1.4 Water.

The school's water source is an eight metre deep dug well, with SWL at three metres, located near the house where 10 of the teachers live. A one inch PVC pipe connects the well to the latrine block over a distance of approximately 30 metres. It was reported that when water is required at the latrine an electric pump is placed on the well and connected to the PVC pipe, through which water is then pumped. This arrangement is inconvenient, as it necessitates the frequent installation and removal of the pump.

The students interviewed said that they do not carry water to school. The security guard reportedly extracts water from the well, boils it and places it in the classrooms as drinking water for the students. The Principal said that in the dry season the quantity of well water available is sometimes not sufficient, and students are then encouraged to carry water from home.

Dug wells are an important source of water for 20% of the residents of the commune, who traditionally have used water from the river. The quality of the well water is in general reported to be good but the water table fluctuates so that there are shortages during the dry season in the more shallow wells. An unsuccessful attempt was made to install tubewells in 1994.

The Management Board prefers to install dug wells equipped with electric pumps at project assisted schools, as most of the province's communes are now supplied with electricity.

4.12.2 Conclusions.

1. The list of schools approved for project assistance in 1998 differs from the proposed list of schools available at the central level.

2. The provincial authorities were able to expand the number of schools assisted in 1998 by 200% by spreading out the assistance received from the central level any by successfully mobilising the required additional funds locally.

3. The authorities attach a higher degree of priority than normal to SSHEP activities in the province. They are determined to carry on with the project even in the event that central level funds were no longer to be made available.

4. The Management Board members recognise the importance of paying attention to the WATSAN needs of the satellite schools as well as to those of the main campuses.

5. DOH and CERWASS do not appear to be directly involved in the project planning and site selection process.

6. The degree of coverage of health textbooks is relatively low, and more posters are required for teaching and display.

7. The quality of construction of the two toilet latrine unit is good but it may be too small to adequately accommodate the potential number of users, which exceeds 800.

8. No copy of the latrine's design was available for reference at the school. The technical design would have provided some insight into the structure of the latrine's underground tanks.

9. It appears that initiatives are taken at the provincial level to modify technical specifications, and that the size of the latrines built is frequently reduced in order to make funds available for the construction of facilities at additional schools.

10. The authorities recognise the importance of making provision for the long term maintenance of WATSAN installations.

11. The school's dug well is an adequate water source, at least during the wet season. There were reports of water shortages during the dry season.

12. A more permanent arrangement for pumping water from the well to the latrine would be desirable.

4.12.3 Recommendations.

1. Support the provincial authorities in their efforts to mobilise project funds both from the end-users themselves and from the provincial government structures.

2. Provide additional support to project activities for satellite schools.

3. Ensure that the size and capacity of the installations put in place can adequately meet the potential demand.

4. Ensure that the Principal of the school has a copy of the technical designs of the WATSAN installations at the school.

5. Support the development of long term maintenance measures for WATSAN installations at schools.

4.13 Case Study 13: Iaka School (Chupah District, Gia Lai)

4.13.1 Observations and Findings.

Table 15: Facts on Iaka School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
13	8	1,114	20%	low	low	yes*	yes*

* Adequate at the main campus but not at the 7 satellite schools.

4.13.1.1 Planning and Management.

Iaka School, still an integrated school, is located 30 kms. N-NW of Play Cu Town. The secondary school has 163 students taught by six teachers in four classes. The primary school has 1114 students, all of whom are from ethnic minority groups. There are 35 teachers, 14 of whom are from ethnic minority groups, who teach 35 classes at eight campuses. The commune also has a kindergarten where 11 classes are taught by 11 teachers. The primary school has a total of 29 classrooms, seven of which are at the main campus and 22 of which are divided among the seven satellite schools. Many of the teachers are said to have studied to grade seven or eight only, after which they were given a short teacher training course. It was reported that six new classrooms are soon to be built with World Bank assistance at a cost of D 70 million / classroom.

The commune has 7940 residents, two thirds of whom are from ethnic minorities, in 1635 households. One third of the population are Kinh who recently migrated to the area. 60% of the population reportedly have food shortages for periods up to six months a year.

At the district level there are 9460 primary school students, 5280 of whom are from ethnic minority groups, in 15 primary schools, nine of which are integrated. Each of the district schools receives a sum of D 2 million / year from the DDOE to cover the cost of small repairs and latrine maintenance. District officials said that this is one of the country's poorest districts and they believe that this fact entitles the area to special consideration.

At the provincial level, it was noted that the central level list of schools proposed for assistance in 1998 is not up to date. It shows 13 schools in Kon Chro District and two in Chu Pah District, both of which are AFA districts. It was reported that there was a famine in Kon Chro District in early 1998 and that the district authorities were as a result unable to raise the required local component of the project. For this reason, 11 of the 13 schools allocated to Kon Chro were reallocated to Chu Pah District. As a result there are now, for assistance in 1998, only two schools in Kon Chro instead of 13 and there are 13 in Chu Pah instead of two.

The selection criteria for schools to receive project assistance in this province are:
1- The commune should be in an AFPD, but able to raise funds locally.
2- Priority is given to the larger schools.
3- Priority is given to communes with a high proportion of residents from ethnic minority groups.

The PDOET Vice-Director asked whether it was UNICEF's objective to provide project coverage to all primary schools by the year 2000. He said that if external funding is insufficient to cover all schools it is then likely that only schools in urban or well off rural communities will be assisted. In such a case it is unlikely, in his view, that the poorer communities will ever get any significant project related assistance. The cost of providing WATSAN installations at schools is never below D 10 million / school, a cost which puts the project beyond the reach of the poorer communities.

He mentioned that all the easy sites have been covered and that it is now time to assist the more difficult areas. He said that in some cases the funds made available from the central level are insufficient to ensure project completion, in which case funds from one or more projects that are being implemented with assistance from the province then need to be diverted to complete the centrally funded projects.

The Project Management Board members suggested that UNICEF funds be transferred more promptly: the funds allocated for 1998 were allocated in August.

4.13.1.2 Hygiene Education.

The secondary school was in session at the time of the visit and it was not possible to talk to primary school students. The secondary school students interviewed showed a relatively low level of awareness of hygiene matters, especially since they had already completed primary school. They did have a general understanding of the subject but they found it difficult to comment on specific topics.

It was reported that only 15% of the primary school students and 50% of the teachers possess the required health education text and reference books. In some classes the teachers read from a students' textbook because the number of students who have the book are so low. No special provision is made for free text distribution to ethnic minority students. It was said that some teachers use part of their salary to buy books for disadvantaged students even when they know they may not be repaid. Parents are encouraged to indicate their need for texts at the start of the school year so that a comprehensive consolidated order can be placed, otherwise it may be necessary for them to travel as far as Play Cu to buy the books. There is at present no provision made for providing free textbooks to students from minority groups. It was suggested that free texts be provided to poor students, or to the school library, from which the books could then be borrowed. Former students are encouraged to donate their texts to poor students.

There is a high drop-out rate for students graduating from primary to secondary school because: 1- some students migrate to other areas; 2- parents are unable to pay (primary school is free, whereas a fee is required for secondary school), and primary school is thus given priority; 3- by secondary school age students often get married and must start working to support the family.

It was reported that in the areas of the province where Kinh predominate 70-80% of students possess health education textbooks. In predominantly ethnic areas only 20% of the students have the required texts because there may be shortages, or the students cannot afford to buy them or, in exceptional cases, because of lack of interest. In particular there is a shortage of health texts for grades four and five for reasons which are not known. The shortage may be due to supply constraints at the central level, or to orders that are inadequate in quantity. In general teachers are able to obtain the required reference texts, the grade four and five books being the 1998 edition and the earlier grades' being an earlier edition. There reportedly are few posters available at any of the schools.

Gia Lai Medical College has assisted with the carrying out of at least one health education training course but the DOH has apparently not yet been actively involved in such activities.

4.13.1.3 Sanitation.

The latrine superstructure was built according to the standard design for a four toilet unit, and installed in 1994. The overall quality of construction is good. There is a nearby dug well from which water is extracted and stored in a small tank from which water flows to the latrine through a seven meter long pipe, under very low pressure. Two taps provide water to the hand washing trough. It appears that the latrine's tank arrangement differs from the standard design. It was reported that there are three tanks, the deepest being eight metres. The upper part of the pit is said to be lined with brick to a depth of one metre and that the high clay content of the soil prevents the lower pit from collapsing. The two other tanks are said to be three metres deep (the standard design recommends the installation of tanks with a depth of approximately one metre). Runoff from the urinals drains into a newly dug garbage pit which also serves as an infiltration pit for runoff from the latrine and the well.

The latrine facilities are used both by students and teachers, six of whom live at the school. No staff are hired to specifically look after the WATSAN facilities; students are expected to assist with this task.

The total cost of the school's latrine is estimated at D 14,162,854, broken down as follows:

1- UNICEF: 2.3 tons of cement and 50 KGs. of rebars, equivalent to D 3 million. The supplies were collected at Da Nang Port and transported to the site at provincial government cost.
2- MOET's 'Project Number Eight for the Improvement of Schools in Mountainous Areas': D 2 million in cash.
3- CPC and the Parents' Association: D 9,162,000 (note: the community did not have a sufficient amount of cash so they gave a 300 sq.m. piece of land to the contractor who, in turn, used his own cash to cover the local component of the total cost, equal to D 9, 162,000).

It was reported that 70% of the commune's residents have dry pit latrines but this estimate was not verified. It appears that the inhabitants of the area have traditionally resorted to open defecation. One person interviewed said that even when pit latrines are deep they still produce an unpleasant smell. The authorities see the importance of supporting the installation of latrines in the community but their view is that householders are in general too poor to be able to afford such an installation. Loans to householders could be of help, but the terms would of necessity be soft, and the loan repayable in kind rather than in cash.

Of the 15 sites selected for project assistance in 1998 at the provincial level, the latrine installations at two schools are already complete. One of the two was completed without UNICEF assistance. Installations at the remaining 13 schools are now under construction and will be completed by the end of 1998.

According to local officials the Thai Binh design is not appropriate for this district because of the low permeability of the soil which prevents infiltration. They recommend that a single eight metre deep tank be adopted as the standard for use in those areas where soil conditions are similar. Provincial authorities suggested that a variety of technical designs for latrines be made available, from which the local authorities or the end-users could make a final choice. The various designs should keep the possibility of aquifer contamination in mind. Where there are water shortages a dry type of latrine should be used.

The centrally recommended design is appropriate only in Krong Pa and Ayun Pa Districts where the soil is sandy and effluent infiltration is possible. In other districts the bedrock is near the surface, which makes it impossible to dig and where other means of excreta disposal need to be considered.

The provincial authorities recommended that WATSAN installations at schools in the provinces poorest districts should be centrally funded.

4.13.1.4 Water.

The water source for the school is a dug well which was installed in the 1980's without UNICEF assistance. It is located behind what used to be the CPC office and which now serves as the office and teachers' room. It is nine metres from the latrine's tanks. The water from the well is clear and it has no objectionable taste. The top of the aquifer is reported to be at 10 metres. The well is 18 metres deep and its SWL was at eight metres at this time of year, but it drops to about 17 metres during the dry season. Originally a winch system was used to extract water from the well, but electricity became available a month ago and an electric suction pump has since been installed. The pump was placed inside the well at a point just above the current SWL. Because of the seasonal fluctuations in the water level in the well it is likely that the pump will have to be raised and lowered accordingly, or removed completely during the wet season when the water level is high and the winch system is relatively easy to use. There is a small, one cum. reservoir next to the well, raised one metre above ground level. The tank's platform, its two taps and the drainage channel were recently installed.

It was reported that well water is boiled and then provided as drinking water to the students by one of the staff who was hired for the purpose. Children do not have to carry water to school if they do not want to.

At the provincial level, varying geological and topographical conditions necessitate the use of a variety of techniques for supplying water. Dug wells typically range in depth from 15 to 30 metres. According to CERWASS, the sum of D 4 million which is currently provided by UNICEF is not a sufficient contribution to the cost of installing a dug or drilled well in the province, as the cost of such installations can easily be as high as D 20 million / well, particularly in those areas where it is necessary to drill through bedrock. The high cost results in difficulties for CERWASS, who must advance their own funds and claim partial reimbursement from UNICEF. CERWASS recommended that UNICEF funds be transferred to them in advance of construction. It was noted that the cost of a dry well is not reimbursed. Contributing to the cost of

well installation is a low priority for the residents of those districts where there are food shortages for six months of the year, and whose main priority is food security. It was suggested that if UNICEF cannot increase the amount of its contribution it should select a smaller number of schools for assistance, otherwise there is a risk that many projects will not be completed due to lack of funds.

Because electricity is now available in most communities, more and more Kinh are using electrical pumps to pump water, but according to the authorities it is advisable that the ethnic minorities continue to extract water manually until they become more familiar with mechanical methods.

The DOH representative mentioned that the use of the winch arrangement to extract water from dug wells is not suitable as it sometimes causes injuries, particularly to young children. She also pointed out that water quality tests are not normally carried out on water that is taken from wells in the province.

4.13.2 Conclusions.

1. The centrally available list of schools proposed for project assistance in 1998 does not accurately reflect the actual situation at the provincial level.

2. The project's objectives are apparently not clear to PDOET officials at the provincial level.

3. Provincial officials are concerned that the high cost of WATSAN installations may put the project beyond the reach of the poorest communities.

4. Provincial authorities are concerned that funds allocated to other projects may have to be diverted to enable the completion of SSHEP installations, which are only partially funded by the central level.

5. The level of health textbook ownership by both students and teachers is exceptionally low.

6. It would be of interest to verify the type of tanks that were built as part of the school's latrine installation. Concern was expressed that the standard type of septic tank latrine is not appropriate for installation at most of the province's schools.

7. Large fluctuations in the wells' water levels requires that the type of pump selected can be permanently installed in one position, and can function equally well at all times of the year regardless of the water level in the well.

8. Difficult digging and drilling conditions throughout much of the province are reported to result in exceptionally high well installation costs.

9. There appears to be little information available on the quality of the water being extracted from the province's wells.

4.13.3 Recommendations.

1. Address the concerns expressed at the provincial level that the project's objectives are not clear to them, that the project may be inaccessible to the poorer communes, and that it may sometimes be necessary to divert funds from other projects to ensure that SSHEPs can be completed.

2. Take steps to increase the level of health education textbook availability in the province.

3. Carry out a technical verification of the tanks installed at the project assisted schools.

4. Ensure that the type of pump provided, whether electrical or manual, can easily be adapted to fluctuating water levels in the well.

5. Introduce the testing of water provided by SSHEP assisted installations.

4.14 Case Study 14: Nguyen Hue School (Cu M'gar District, Dak Lak)

4.14.1 Observations and Findings.

Table 16: Facts on Nguyen Hue School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
14	1	541	80%*	low	high	no**	no***

* Ownership in certain classes may be as low as 50%.
** The pour-flush latrine is too small and lacks water in the dry season. The pit latrine is technically inadequate.
*** The well may dry up during the dry season. Temporary arrangement for pumping water from well to latrine.

4.14.1.1 Background, Planning and Management.

Nguyen Hue School is located 15 kms. N-W of Buon Ma Thuot City, in Ea M'nang Commune. The name of the school is listed as "Ea M'nang" rather than as Nguyen Hue on the central list of schools assisted. The latrine installation at the school was completed in 1995. It is an integrated school with only one campus. The primary school has 541 students, of whom 42 (8%) are from ethnic minority groups. There are 19 teachers who teach 15 classes in 15 classrooms. One of the classes observed consisted of 95% Kinh and 5% Thai who migrated to the commune from the north-western provinces of the country. It was reported that 97% of the students pursue secondary school studies after completing primary school.

The area is a New Economic Zone which was settled approximately 15 years ago. Approximately 80% of the residents are Kinh and the remaining 20% consist mainly of Thai and Muong who migrated from Cao Bang and Lang Son Provinces in the N-W.

It was explained that in terms of water availability and other infrastructure, the conditions that exist in Ea M'Nang Commune are fairly representative of conditions throughout the province. Demographically, however, it is not entirely representative: Ea M'Nang's population consists of 80% Kinh, while at the provincial level the Kinh make up 70% of the population.

It was reported that DANIDA is actively involved in water and sanitation activities in the commune.

The PPC Vice-Chairperson and Director of the Project's Management Board said that high levels of migration of both Kinh and ethnic minorities to the province over the past 15 years has led to an exceptionally large and rapid increase in the population of the province, and most of the migrants are poor. The need for the provision of basic services has been increasing proportionately; for example there is now a need for 1,000 new classrooms to be built every year. 30% of the province's population are estimated to be from ethnic minority groups.

There are over 300 primary schools in the province but only 35 (12%) of them now have proper latrines. All schools need proper WATSAN facilities, but the amount of assistance received is low when compared with the total number of schools. Transportation costs are relatively high throughout the province.

It was mentioned that the amount of funds that in general can be mobilised from parents is not very significant.

Loan schemes are difficult to implement successfully, but the province has at least one such schemes that works well, despite some initial setbacks. It is implemented through the Women's Union with assistance

from the Danish Red Cross. It provides loans related to sanitation in a single community that consists mainly of ethnic minorities.

15 schools received SSHEP assistance in 1998, and latrine installations are already complete at 14 of the sites. The related UNICEF funds were received in totality, but they were received late. As a result the DOE was compelled to advance the required funds to the schools from its own budget and replenish their account when the UNICEF funds were received.

It was reported that it has been difficult to manage the project since UNICEF discontinued its assistance to the Management Board Monitoring Fund.

DANIDA was reported to be supporting a WATSAN project worth D 240 million for three schools.

4.14.1.2 Hygiene Education.

The Principal reported that all teachers possess the teachers' health education reference manual and that 80% of the students have the revised health education textbooks. Inability to afford the texts or unavailability were the stated reasons why the remaining 20% of the students lacked the textbook. Three sets of posters were recently received from the district education office free of charge. The provincial authorities would like to see universal textbook availability at schools throughout the province but budgetary limitations are a constraint to this objective.

A grade four teacher interviewed moved to the commune in 1993 from a coastal province. She does not have the teachers' health education manual and uses a student text for reference. The DDOE has a shortage, and she did not know whether the manuals were available in the local market. She estimated that only 50% of grade four students have the health education text, and she said that those texts are difficult to find in the market, even in Buon Ma Thuot. In her view the revised health education course is an improvement, but she said that it is still difficult for the students to practice what they learn because, for example, they often do not have proper latrines at home. She mentioned that there is a shortage of teaching aids.

Key health education teachers are reported to periodically be selected for special training, after which they are expected to in turn train the other teachers at their school.

The level of awareness of hygiene and sanitation issues among the students interviewed, such as the usefulness of boiling drinking water and of disease transmission by insects, was assessed as high.

Local officials said that more activities related to non-formal health education are required in the commune.

4.14.1.3 Sanitation.

There are two latrines in the school compound. The first is a two toilet pour flush unit assisted by SSHEP and the second is a rudimentary single unit dry pit latrine. Both are located at the back of the compound, near the boundary fence and are separated by a distance of 10 metres. A household situated behind the pour flush latrine raises pigs and the effluent from their pen stagnates in a pool five metres from the latrine. The water source for the latrine is a dug well that is located 25 metres from the latrine block.

The SSHEP latrine was not built according to the standard design. It was explained that this installation was among the earliest school latrines installed in the province, at a time when available resources were insufficient to cover the cost of a latrine built to standard specifications. As a result modifications to the design were necessary in order to make it affordable.

The actual quality of construction is acceptable, although certain of the design criteria observed are not entirely appropriate. The urinal area is too small, as it is only large enough to accommodate two or three students at one time. The urinal drain consists of a hole in the floor which was clogged, with the result that water was stagnating on the floor. The entrances to the urinals face the front. No provision was made for hand washing. There is a one cum water storage tank in each of the two urinals, the size of which further reduces the amount of useable urinal space. It was reported that the latrine has a single pit which is 10 metres

deep, the uppermost metre depth of which is lined with brick. A request by the team to remove the pit's concrete cover so that the pit could be inspected was not met.

It was reported that this is the first latrine of the pour flush type to be installed in the commune. Its cost was not immediately available but the authorities estimated that related funding received from outside the commune amounted to approximately D 7 million. The prevailing opinion was that this is the most suitable type of latrine for areas where there is a permanent and reliable source of water, and where the electricity required to pump water from the well to the latrine is available. No staff are hired to specifically look after latrine maintenance; it was reported that this task is largely the responsibility of the secondary school students.

The depth of the dry pit latrine was not determined but it is likely to be about one metre. The surface of the excreta is 0.5 metres from the surface. The latrine's superstructure consists of a wooden plank floor with uncovered opening and low board wall with an opening that has no door. The latrine was obviously in regular use, but it was not possible to determine whether it was primarily used by teachers, students, neighbours, or all three.

The combined total number of potential users of latrine facilities at the school exceeds 1,000, including students, teachers and staff. Six of the teachers and their families live at the school.

The difficulty of access to water prevents washing and bathing as frequently as in other parts of the country. There were also reports that water shortages in the dry season prevent regular use of the pour flush latrine and that students sometimes resort to open defecation in the fields surrounding the school at that time of year.

It was reported that 129 (45%) of the province's 287 primary schools have adequate sanitary facilities. "Wet" or "dry" latrine designs are adopted, depending on local conditions.

According to the DOH representative 40% of the province's households have latrines, of which 10% meet DOH standards. He said that only 0.3% of the province's latrines do not pollute the environment. The need to improve the situation is understood but fund limitations are a constraint. Furthermore, members of ethnic minority groups feel they are entitled to receiving free services. Loans were experimented with but unsuccessfully: the poor fear borrowing money, and the province lacks experienced personnel able to deal with such schemes.

The intention of the DOH is to provide to householders a pre-cast concrete squatting slab worth D 200,000 to be used on shallow "cat pits". Such pits are intended to be covered over when full, and the concrete slab moved to a new pit at another site.

One of the families interviewed mentioned that they had no latrine but that they would build one if they could afford it. They currently resort to open air defecation. They would be interested in taking a long term loan at favourable repayment terms for the purpose if indeed such a loan were available. It was reported that none of the 26 households neighbouring the school had proper latrines but the family interviewed nevertheless mentioned that preference should be given to school sanitation, followed by sanitation in the community at large.

Some cases of dengue fever were reported in the community.

4.14.1.4 Water.

The school's water source is a dug well which was installed at local expense, without SSHEP assistance. It was said that the well was recently deepened with the use of explosives to its current depth of approximately 20 metres, but that it nevertheless nearly went dry during the 1998 dry season. An electric non-submersible pump has been installed in the well, just above the water level. As the commune does not yet have electricity, the electric pump is powered by a nearby diesel driven generator, which is cared for by the school's guard.

There was a temporary arrangement whereby water was periodically pumped from the well, through a 1" HDP pipe, to the reservoirs that are built into the latrine. It was mentioned that it would be useful if a

storage tank for water could be installed in the school's yard to enable to wash off muddy feet during the rainy season.

It appears that the school children obtain drinking water from a variety of sources: a few carry water from home, while some get water from neighbouring households and others drink from the school's well. No special arrangement is made to provide drinking water directly to the classrooms.

The Commune Chief reported that only 15 to 20% of the households in the commune have their own dug well. Separate reports indicate that each of the 26 households neighbouring the school has a dug well, but that all but five of them dried up during the 98 dry season. The depth of these wells is said to range from 10 to 20 metres. Rainwater is little used or not used at all in the area because it is not thought to be clean. One resident feared that there is a risk that surface water could be contaminated with pesticides from the coffee plantations.

The provincial authorities mentioned that 60% of the province's households have wells but that only 20% of the population have safe water, compared to 30% in other areas of the country. WATSAN is not always given top priority. The water level in dug and drilled wells fluctuates widely from dry to rainy season. There are drawbacks associated with rainwater harvesting, but it is a technology that is worth considering.

CERWASS were informed by their office in Hanoi that they could expect to receive the sum of D 4 million per well from UNICEF. According to the provincial CERWASS office this amount is largely insufficient, as the cost of wells in the province typically is much higher. The cost to CERWASS for feasibility surveys alone is up to D 2.5 million per well, which leaves a balance of only D 1.5 million for actual well installation. At times they are required to transport materials from Da Nang Port which is an additional cost. At the moment CERWASS has to advance its own funds and later claim reimbursement, which creates difficulties because CERWASS needs to borrow money to do this. CERWASS proposes that it be advanced at least 50% of the foreseen total cost prior to the start of well installation, and that it be given authorisation by UNICEF to procure electrical pumps locally.

CERWASS mentioned that supplies and equipment provided must be appropriate but that sometimes they are not. Their office was recently informed that 11 electric pumps would be provided by UNICEF but the pumps' specifications are unknown, so they cannot determine in advance whether the pumps will be suitable. They suggested that project materials should not be provided in a uniform way across the country, but should adjusted to adapt to local conditions.

Some drilling equipment was received from UNICEF and wells have been drilled in certain locations, but drilling costs in the province can be as high as D 150,000 per metre, a cost that the end-users generally cannot afford. UNICEF has also supplied 15 units of the "Vergnet VN-30" deep well handpump, but those pumps were difficult to repair and their use has not been popular. Some ferro-cement rainwater storage jars of two cum. capacity which cost D 500,000 per unit, including transportation costs, have been used.

4.14.2 Conclusions.

1. The names of the schools assisted by SSHEP do not always match when central level and provincial level lists are compared.

2. New Economic Zones may merit special consideration because of their frequent lack of adequate infrastructure and their remote location.

3. Rapid migration to the province over the past 15 years has put a high degree of strain on the provincial capacity to ensure the availability of basic services, particularly in rural areas.

4. The proportion of primary schools province-wide that have proper latrines (12%) is low.

5. At least one loan scheme, assisted by the Danish Red Cross, is performing satisfactorily.

6. Experience gained by the DANIDA project at three schools could prove useful to SSHEP.

7. It appears that it is difficult to obtain health education textbooks locally and that the teachers' reference manuals are in short supply.

8. Local authorities see the need for non-formal health education activities at the commune level.

9. The existing sanitation facilities at the school cannot adequately meet the potential demand, particularly during the dry season when it appears that students and teachers may be forced to resort to open air defecation and urination because of lack of water at the latrine.

10. Information on the effectiveness of the 10 metre deep pit that reportedly is part of the existing latrine's design would be of interest. In particular an assessment of the risk of pit collapse would be appropriate.

11. The installation of pour flush latrines in areas such as this, where there is water scarcity during the dry season, may not be appropriate.

12. The existing dry pit latrine is not sanitary, as it allows access to rodents and insects.

13. It appears that it is possible to successfully operate loan schemes in the province but with a high degree of effort by experienced and dedicated personnel.

14. Additional information on the scope and performance of the "Cat Pit Latrine with Pre-cast Concrete Slab" would be of interest. There is a risk that such latrines are unsanitary as they are likely to be uncovered.

15. It is commendable that the local authorities were able to install a deep dug well and equip it with an electrical pump, at their expense, without external assistance.

16. There appear to be widespread water shortages during the dry season.

17. There is potential for the development of rainwater harvesting at the provincial level.

18. The provincial CERWASS raised a number of issues which merit discussion at the central level.

4.14.3 Recommendations.

1. Consider the possibility of giving special SSHEP priority to New Economic Zones.

2. Study the existing loan schemes and DANIDA supported school WATSAN projects to see if any of their lessons learned can be applied to SSHEP.

3. Improve the latrine installations at the schools to make them more able to respond to potential demand and, at the same time, study the type of pit in place and assess its appropriateness and effectiveness.

4. Assess the effectiveness and appropriateness of the "Cat Pit" latrines that have received UNICEF support.

5. Investigate possible means for increasing the water supply in rural areas of the province during the dry season.

6. Consider and discuss the various issues raised by the provincial CERWASS office.

4.15 Case Study 15: Dong Nai School (Bu Dang District, Binh Phuoc)

4.15.1 Observations and Findings.

Table 17: Facts on Dong Nai School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
15	7	501	75	low	medium*	yes**	yes***

* Relatively lower among ethnic minorities than Kinh because of language difficulties.
** Reportedly inadequate at the 6 satellite schools.
*** Ditto. Also may be inadequate at the main campus during the dry season.

4.15.1.1 Background, Planning and Management.

Dong Nai School is located 50 kms. N-E of Dong Xoai Town in an area that is predominantly populated by ethnic minority groups, and where only 4% of the school's students are Kinh. The commune does not yet have electricity but it is expected to be supplied in about a year. The school has seven campuses which serve a total of 10 villages. The SSHEP installations there were completed in 1995 at the main campus. The Principal is newly appointed and he was unable to provide detailed information on the installations, but he mentioned that all six satellite schools require improved WATSAN facilities.

There are 501 students (246 female and 251 male), of whom only 60 students study at the main campus. 480 of the 501 students are from the X'Tieng minority group. Girls appear to outnumber boys, particularly in the higher grades, reportedly because the latter begin working earlier to support the family. Lack of fluency in the Vietnamese language is a constraint for the ethnic minority students, particularly for those in the lower grades. No special language classes are provided to them. Teachers reportedly receive D230,000 per month as salary and no other form of remuneration, a level that is thought to be too low.

The commune has 300 households of which 28 (9%) are occupied by Kinh. The commune has only the primary school—no secondary school—and a request has been made for the establishment of a secondary school. The closest such school at present is in Bu Dang Town, 25 kms. away. It was explained that according to education policy a number of students sufficient to constitute three classes is required before a secondary school can be established in a community, but the possibility of opening one grade six class in Dong Nai Commune in 1999 is nevertheless being considered.

A family from the Chau Ma ethnic group interviewed said that they have a son and a daughter who are studying at primary school in Bu Dang Town, where they are required to pay for tuition, room and board. 12 students from the commune are currently boarding at secondary school. It was mentioned that to date only two students from the commune have reached a level as high as grade nine. Two kindergarten classes are also being taught in the commune.

47% of the population of the district are said to be from ethnic minority groups. There are 12 primary schools in the district, 10 of which have SSHEP assisted latrine installations but only three of the schools have proper drinking water facilities.

The population of the province includes members of 27 ethnic minority groups, including Khmer. There are 115 primary schools, four of which are integrated. 20 (17%) of the schools reportedly have SSHEP assisted latrine installations, 20 schools have similar facilities installed with assistance from other government sources, and approximately 40 schools have latrines that were installed with local resources only. In summary approximately 70% of the primary schools' main campuses already have latrine installations, but the satellite schools still largely lack those facilities.

In January 1997 Song Be Province was divided into two new provinces: Binh Duong and Binh Phuoc. The newly appointed staff at the PDOET in Binh Phuoc were unaware that the 1998 list of schools proposed for SSHEP assistance included, through an oversight, two schools where facilities had been installed in 1996: those were Tho Son and Dak Nhau schools in Bu Dang District. All schools in Bu Dang, an AFA district with a high proportion of migrants, had by 1997 already been covered. As a result two replacement schools were included for assistance in Dong Phu District in 1998. The total number of project schools for the province in 1998 consequently remains at 10.

The installations at two of the 10 schools are already complete and eight are under construction. The sum of approximately D 54 million in project funds were received from UNICEF in September 1998. No funds had yet been received from MOET, but the sum of D 3 million/school was being expected. Additional UNICEF funding was requested for future schools and a suggestion was made that external funds should be received earlier in the year.

4.15.1.2 Hygiene Education.

The level of awareness of hygiene related matters was good and, as was the case in most of the schools previously visited, there was an understanding, for example, that insects can transmit disease and that it is important to drink clean water. It is possible, however, that the difficulty ethnic minority students have in communicating in Vietnamese may result in a lower level of awareness among those students.

It was reported that 75% of all students in the school have the required health text books but that grade five teachers lack the related reference manual. The primary curriculum at the school formerly was 120 weeks, where health education is not a compulsory subject, but it has since then adopted the 165 week curriculum which does include health education. There are shortages of health texts for grade four and five students.

100% textbook distribution was reported for 1997, but budgetary constraints prevented full provision of texts in 1998. This year only math and Vietnamese texts were distributed to all students. The sum of D 100 million were allocated to the province for the purpose, while D 900 million would have been required to ensure total coverage.

PDOET reported that Kinh students must buy textbooks, while ethnic minority students are entitled to receiving the books texts, but those texts were in fact not distributed free of cost because of budgetary constraints. It is to be noted that information from the central level indicates that the practice of free textbook distribution to ethnic minority students was discontinued in 1997. Some extra copies of health education textbooks which are said to be lent out to students in need were being kept in the library.

The school has only a few posters, which were received very recently.

4.15.1.3 Sanitation.

There are two separate latrine units in the school compound, both of which are of the twin dry pit type. The newest was installed with SSHEP assistance in 1995 but it was unclear whether the second installation had received any UNICEF support, although the pre-cast concrete squatting slab was of the same type observed separately on household latrines installed as part of a UNICEF assisted project.

The SSHEP assisted latrine consists of two dry pit toilets flanked on either side by urinals with openings towards the front. It was completed around mid 1996, although the cement and rebars were received in 1995. The quality of construction is not up to the standard observed at other sites: the concrete urinal floors were already badly worn and there were cracks in the walls. The toilet squat plates have circular holes with wooden plug type covers equipped with wooden handles. It was not possible to determine pit depth. Recent modifications had been made, such as the digging of a trench around the outside of the latrine, and the placing of water jars at the front of the latrine block. Urine runs off to the surface via openings at the back. The structure did not give the appearance of being heavily used.

The second latrine unit is located 10 metres from the SSHEP assisted unit. It is in use but it was not possible to determine whether by students, teachers, neighbours or a combination of all three. It consists of two unlined pits of undetermined depth, covered with pre-fabricated concrete squatting slabs similar to slabs seen elsewhere on UNICEF assisted community latrines. The superstructure is made of wood. The earth in front

of the latrine had subsided and caved in, and the team recommended that the installation be condemned, as there is a risk that the squatting plates will collapse into the pits while the latrine is being used.

Two families visited in the commune's small market area had "Cat Latrines" in the cashew nut grove behind their house. Both latrines were of the shallow pit type covered with a pre-cast concrete squatting slab of the type seen earlier at the school. The latrines are not particularly sanitary, as the contents are close to the surface and exposed to easy access by animals, birds, rodents and insects. The ground around one of the latrines had subsided, and the squatting plate was tilted at a 30 degree angle. It was reported locally that the slabs are manufactured in Bu Dang Town and transported to the commune as part of a UNICEF supported revolving fund scheme implemented through the MOH/DOH. It was reported separately by UNICEF that funds for the scheme were sometimes channelled from the MOH to the Women's Union, who were responsible for project implementation. According to UNICEF this project was discontinued in 1996 but the funds lent out prior to that are still revolving within the respective communities.

It was reported that there tend to be widespread water shortages throughout the province during the dry season, and some concern was expressed by the provincial authorities as to whether pour flush latrines are an appropriate choice of technology for the area because of the water shortage constraint.

4.15.1.4 Water.

The source of water for the school is a dug well, completed in 1996, that provides water for drinking and for use at the pour flush latrine, which is located 20 metres down slope from the well. The well is 17 metres deep and its SWL, which reportedly drops to 15 metres during the dry season, was at approximately eight metres. The well has a wooden cover with an opening for the winch rope that is used to extract water, and a 1.5 cum. water storage tank at ground level nearby, which does not have an outlet on its side. The well's drainage platform, from which water drains into a newly installed garbage / seepage pit nearby, is of good quality construction.

The students interviewed reported obtaining drinking water from households near the school, while others said they go home to drink. The headmaster reported that well water is boiled for drinking by the students.

At the commune level, there are few dug wells but they are shared amongst a number of families, so water is sufficient, except in the dry season when some of the wells dry up.

The provincial authorities reported that at some of the province's schools the handpumps installed there are not used because they are out of order or because the water they provide is thought not to be of good quality.

4.15.2 Conclusions.

1. The school is located in an area where infrastructure is poor (no electricity and poor roads).

2. Lack of fluency in the Vietnamese language can be a learning constraint for students from ethnic minority groups.

3. The absence of a secondary school in the community is a limitation on the continuation of students' studies after they leave primary school.

4. Reports indicate that a high proportion of the SSHEP assisted schools in the district still lack a proper water supply, and that most of the province's satellite schools lack both water and sanitation facilities.

5. The separation of Song Be Province into two new provinces in January 1997 resulted in some confusion over the list of schools to be assisted in 1998.

6. Some implementation difficulties were being experienced because UNICEF funds for SSHEP for 1998 were received late and the expected MOET contribution had not yet been received.

7. Shortages of health texts for grades four and five, and of teachers' manuals are a constraint to health education activities at the school.

8. There are differences in perception at the central and commune levels as to whether ethnic minority students can still expect to receive free textbooks.

9. Some improvements would be in order, but the SSHEP assisted dry pit latrine at the school may be the most appropriate choice of technology for areas such as this where there are water shortages at certain times of the year.

10. Students do not appear to make frequent use of the existing latrine installation.

11. The second dry pit latrine unit is unsafe for further use. It is possible that the squat plates for this latrine were provided with UNICEF assistance, but it was not possible to verify that possibility.

12. Community latrines, as is the case with institution based installations, need to be built according to technical specifications that ensure that they will provide a sanitary means of excreta disposal. The "cat latrines" seen by the team do not provide that possibility.

13. It was not possible to accurately determine the level of student use of water from the school's well, but it appears that other sources of water are commonly used.

4.15.3 Recommendations.

1. Ensure that primary schools that have poor infrastructure, where students have language difficulties and where there are no secondary schools are given SSHEP assistance priority .

2. Ensure that all schools that are provided with SSHEP assisted latrines simultaneously receive a reliable water source.

3. Ensure that the policy on free textbook distribution is clear to all interested parties.

4. Take measures to encourage students to make more frequent and regular use of the school's WATSAN installations.

5. Ensure that all SSHEP and UNICEF assisted latrine installations, at schools and households, are both sanitary and safe to use.

4.16 Case Study 16: Tan Thoi Hiep School (Hoc Mon District, HCMC)

4.16.1 Observations and Findings.

Table 18: Facts on Tan Thoi Hiep School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)*	Water source adequate (Y/N)
16	3	2055*	100	low	high	yes**	yes***

* Approximately 300 of the students study at the SSHEP assisted satellite school.
** The toilet units are adequate but there are no urinals.
*** It appears that water from the well at the satellite school is used for the latrine but not for drinking.

4.16.1.1 Background, Planning and Management.

Tan Thoi Hiep School, which appears as "Thoi Hiep" School on the MOET list for 1996, is located 20 kms. N-W of downtown HCMC. It consists of the main campus and two satellite schools, one of which was assisted by SSHEP. There are 2055 students (962 female and 1093 male), more than 300 of which study at the SSHEP assisted satellite campus. The parents' association provides maintenance funds for use by the school.

There are 22 primary schools in the district, two of which are integrated. 12 (55%) of the schools have reportedly received SSHEP assistance and the remaining 10 schools also have some form of latrine facilities. Six (27%) of the 22 schools reportedly have drinking water arrangements for the students.

The district, commune and school authorities made the following recommendations:
1- Give more priority to satellite schools.
2- Make more posters and manuals available, and visual aids such as video cartoons.
3- Provide upgrading training to health education teachers.
4- Provide a special fund for the maintenance and upgrading of facilities.
5- Make special education facilities available for students with learning disabilities.
6- Provide local maintenance workers with access to technical assistance, as required, from higher levels.

Neither DOH nor CERWASS were represented at the team's meeting with the Project Management Board in HCMC, but a CERWASS representative was present at a round-up meeting held at the UNICEF sub-office a few days later.

It was reported that 80% of rural and 90% of urban schools throughout the province have adequate sanitation facilities, while the proportion that have adequate water supply is lower. The province has 436 primary schools, 19 of which are integrated, and approximately 600 satellite schools. 25 (6%) of the schools have received SSHEP assistance (15 schools in 1997 and 10 schools in 1998). The installation of the facilities at all 25 schools has been completed without major constraints.

The average cost of the project assisted sanitation facilities for 1998 was approximately D 15 million per school, of which the sum of D 5 million were received from UNICEF and D 10 million from the District People's Committee. UNICEF funds totalling approximately D 50 million (D 5 million/school x 10 schools) were received in full in August 1998. Because of the late receipt of the UNICEF funds, the People's Committees first advance their own funds and replenish their accounts when the UNICEF funds are received.

The Management Board members reported not having seen the financial guidelines issued to the PPC by MOET, and they were unaware ahead of time of the amount of funds that was to be transferred and their

specific purpose. One possible reason given was that the guidelines may have been sent to the PPC's Chief Accountant who may then have neglected to pass on the information to the Project Management Board.

There are two categories of primary school in the province: 1- the students receive a total of 165 weeks of instruction during their 5 year primary school course. Attendance is on a full time basis during daytime hours; 2- Alternative Basic Education (ABE): the students receive a total of 100 weeks of instruction during their primary school course which normally covers a calendar period of less than five years. Classes conducted in the late afternoon / early evening for students who must work during the daytime, or who for other reasons are unable to attend daytime classes. This second category includes only three compulsory subjects: math, Vietnamese language, and nature and social affairs.

In HCMC the two main site selection are: 1- the project has been assessed as feasible; 2- the end-users and local officials have been assessed as having the capacity to provide the required support, including the local funds component. The PDOET collects information on the project site, and the DPC is requested to write a letter expressing commitment to the project and willingness to help raise funds locally.

The process followed in HCMC in finalising a list of schools for project assistance is: 1- The province is informed by MOET of the number of schools that can be assisted and the name of the AFPD in which the school is to be located; 2- the PDOET prepares a list of schools for project assistance during that year; 3- provincial officials visit the concerned districts. The PPC then summarises information received on all potential sites, proposes a list of schools suitable for project assistance and forwards the list to MPI/MOET who will then discuss the proposal with UNICEF. It was reported that UNICEF then informs MPI/MOET of the number of schools on the list for which it can provide assistance.

The Provincial Management Board made two recommendations:
1- Instead of dividing its resources between many different schools, UNICEF should concentrate on the full funding of two or three schools, which could then serve as examples for others.
2- The Board requires guidelines on fund use. Can they themselves redistribute the funds allocated to them from the central level?.

4.16.1.2 Hygiene Education.

The level of awareness of the importance of hygiene matters among the students interviewed was assessed as being relatively high. 100% of the students are reported to be in possession of the required health texts: grade one to three students have the 1997 version, while those from grades four and five have the 1998 edition. The headmaster reported that the latest version of the health texts is an improvement, but that they could perhaps be more practically oriented with, for example, more provision made for Q&A. He mentioned that there is an insufficient quantity of health exercise books based on the new teaching methodology. Teachers are reported to possess the required reference texts, which the school's library provides to them free of cost.

Posters were not on display in the classrooms, but the headmaster said that each teacher has five or six such teaching aids for their use. He reported that the posters do not closely match the curriculum's content. The posters that are provided along with the standard textbook set are only available for grades one to three, perhaps due to the fact that the grade four and five textbook sets have not yet been fully revised.

4.16.1.3 Sanitation.

All three campuses are reported to have adequate WATSAN facilities. The team saw the facilities at both the main campus and the nearest satellite school.

The satellite school is located 150 metres from the main campus. Its compound is small and the space available for latrine installation is very limited. The latrine was build at the left-front corner of the compound, near the street. The latrine block consists of four pour flush toilet units, all with wooden doors, that face towards the yard. The quality of the construction is good. There was no toilet paper and no indication of a means of disposal of such paper when it is available. There is no urinal area. There is a one cum water storage tank at ground level immediately in front of the latrine block, but drainage from the tank is poor. Water is hand-carried to this tank from the tubewell 25 metres away. Because the back of the latrine block abuts on a building in the next compound, thus limiting the amount of available space, it was reported that the latrine tanks were installed in front of the latrine unit. It was not possible to determine whether those

tanks are septic or of the infiltration type, but it was mentioned that the tank is divided into three smaller tanks. The installation is estimated to have cost approximately D 7 million; no breakdown of sources of funds was available.

The main campus accommodates approximately 1,500 students. Its latrine unit was built in the centre of the compound with funds from the CPC and no assistance from SSHEP. Despite the drawback that there is no girls' urinal the quality of the actual construction is good. Water is pumped electrically from a nearby tubewell. There is a separate latrine unit for use by teachers and staff. The Parents' Association representative mentioned that they were considering moving the latrine to a less central location.

It was reported that 99% of the commune's households have pour-flush infiltration latrines.

At the district level it was reported that the authorities do not strictly adhere to the standard MOET designs for latrine installation. Instead, they hire experienced local contractors who build according to their own standards, which the authorities think are generally more appropriate.

The provincial authorities reported that water and sanitation facilities are, in principle, now provided simultaneously at HCMC schools, but there are indications that at the practical level there the installations are put in place according to different time schedules.

4.16.1.4 Water.

A handpump equipped tubewell in the school yard provides water for the latrine but apparently not for drinking. It was reported that drinking water is hand carried from a tubewell at the main campus. It was not possible to establish the reasons for this preference. The well was installed in 1996 by a Bien Hoa drilling team with funds from the PPC and without SSHEP assistance. The well installation itself is good but drainage arrangements are poor. The pump needed to be primed (i.e. by pouring water into the cylinder from a container) which indicates that one or more pump parts do not provide a proper seal and require replacement. Students reported either buying drinks at the school or carrying water from home. There was a small candle type water filter at the school which was reported to be newly installed, but some of the students interviewed said they were not sure if the water available at the school was clean.

Drilled wells are reported to be the main source of water at the commune level. There are very few, if any, dug wells in the commune and little use is made of rainwater, as the supply of groundwater seems to be plentiful. There are few, if any, piped connections to the city mains.

The provincial CERWASS representative reported that his office uses UNICEF funds to locally procure supplies and equipment for drinking water installations which it then supplies to the end-users. He was unsure as to whether UNICEF funds are received in advance for this purpose, or whether CERWASS must advance its own funds for later reimbursement by UNICEF. CERWASS also reported that they carry out independent investigations of the water situation at schools, and arrange to provide facilities at schools that lack them. It was not immediately clear, however, in what way those activities are funded.

4.16.2 Conclusions.

1. The six recommendations made by the local authorities and two recommendations made by the Management Board require follow-up discussion.

2. The involvement of DOH and CERWASS at project planning stage appears limited.

3. The reported proportion of the province's primary schools that have received SSHEP assistance (6%) is relatively low.

4. The members of the Project Management Board did not have a clear understanding of SSHEP funding arrangements and procedures.

5. The availability of health education textbooks appears adequate but there seems to be a lack of health exercise books based on the new teaching methodology.

6. The reason why posters are not included with the sets of textbooks for grades four and five needs to be looked into.

7. A few improvements at the SSHEP assisted latrine installation, such as the provision of urinals and a means of disposal of used toilet paper, are possible.

8. Largely as a result of sustained support from the CPC and the Parents' Association it was possible to install proper latrine facilities at the main campus without external assistance.

9. There is a tendency to locate latrine installations in out of the way places where they are out of sight but less easily accessible.

10. The provincial authorities prefer to construct latrine installations according to local designs rather than designs proposed by SSHEP.

11. The water supply for the latrine is adequate but for drinking, students show a clear preference for drinks they buy at the school: water, soft drinks, etc.

12. The manner in which UNICEF funds for water installations are channelled to CERWASS, and the manner in which the latter makes use of those funds in providing the installations, is not clear.

4.16.3 Recommendations.

1. Discuss the six recommendations made by the local authorities and two recommendations by the Management Board.

2. Install urinals and make provision for used toilet paper disposal at the SSHEP assisted school.

3. Acknowledge the important and sustained support given to school WATSAN by the CPC and the Parents' Association.

4. Encourage the installation of latrines at central, easily accessible locations.

5. Support the tendency to adapt local designs to the installation of SSHEP assisted facilities, provided those designs observe certain key specifications.

6. Investigate ways in which drinking water could be provided to the school, to reduce the need for students to buy drinks at school.

7. Clarify to all concerned parties the mechanism by which UNICEF funds are channelled to CERWASS, and from CERWASS to the end-user community.

4.17 Case Study 17: Binh Tan School (Thanh Binh District, Dong Thap)

4.17.1 Observations and Findings.

Table 19: Facts on Binh Tan School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
17	6	973	70	low	medium	no*	no*

* No WATSAN installations at the school.

4.17.1.1 Background, Planning and Management.

Binh Tan School is located 30 kms. (20 kms. by car and 10 kms. by boat) N-E of Cao Lanh Town, in a small market area, on the bank of the canal. It was de-integrated in 1994. There are 973 students, none of whom are from ethnic minority groups. There are 29 teachers who teach 29 classes of students. The school is divided into six campuses. 95% of the primary school students are reported to take up secondary school studies, but on the other hand relatively few students eventually graduate from secondary school. The main campus of the primary school accommodates one secondary level class (grade nine).

The school has not yet received SSHEP assistance. The central level list of SSHEP schools indicates that a total of 10 schools were approved for assistance in four districts of Dong Thap Province in 1994. Changes were subsequently made to the list at the provincial level, but those adjustments were not subsequently made at the central level. Three of the four districts selected for assistance, with a combined total of seven schools, chose not to participate in the project. Consequently, seven additional schools were selected from Sa Dec District, one of the four initially proposed districts, bringing the total for that district alone to 10 schools.

Binh Tan was selected at random from the central-level list as one of the schools to be visited by the evaluation team. It was only discovered later that the school, in fact, chose not to participate in the project. The team decided to visit the school regardless of the fact that it was not a project participant. The reason for the visit was that it would provide an opportunity to study a school where no UNICEF WATSAN facilities have yet been installed, and where the school's reasons for not participating could be looked into.

It appears that the main reason for which the commune chose not to participate was that they felt unable to raise the required local contribution. The CPC representative said that even now participation would not be possible even if the sum of D 5 million were still available from UNICEF. He estimated that proper latrine facilities for the school would cost D 17 million. He said that if 50% of the required funds were made available from external sources the commune would try and mobilise the remainder. In any case this would not be possible in 1998, as priority this year goes to the construction of new classrooms.

The commune has one secondary school and one primary school that is divided into six campuses that teach a total of 31 primary school classes. There are no students from ethnic minority groups.

According to the PDOET this commune is within the poorest 25% of the district's 12 communes and one town. Families are large, with an average of four to seven children. There are 32 primary schools in the district. It was reported that no UNICEF assistance for WATSAN has yet been received at the district level, although UNICEF did assist with the construction of classrooms at three schools in 1977 and 1978.

There are 293 primary schools and 225,000 primary school students, approximately 1000 of which are from the Khmer ethnic minority, in the province. None of the schools are integrated. Some have up to 10 satellite schools, with the result that the total number of primary schools (i.e. main campuses plus satellite schools)

exceeds 1000. A total of 38 (13%) of the province's primary schools' main campuses, including those on the 1998 list, have been assisted by SSHEP.

According to PDOET the province joined SSHEP in 1994 when UNICEF assistance was still provided in kind. Some of the schools scheduled for project assistance during that year found they were unable to participate because they could not raise the required local contribution. The province was in the process of being divided at the time, and provincial priority was being given to classroom improvement and construction.

10 schools were approved for assistance in 1998, for which the sum of D 51 million, the equivalent of $400/school, were received from UNICEF in August 1998 and then transferred to the district level. Construction has not yet started because of the high water table at this time of year. The department expects to receive the sum of D 3 million/school for 1998. According to MOET funding guidelines have been issued but it appears that provincial officials are still unclear as to the source of the funds and their purpose. The PDOET can expect to receive the sum of D 30 million, equivalent to the sum of D 3 million for each of the 10 schools to be assisted. It is up to the PDOET to take the initiative to approach the provincial authorities to obtain those funds from the PPC.

The PDOET representative mentioned that the 10 schools selected for assistance in 1998 are located in 10 of the province's richest communes--- those that are able to mobilise funds locally.

The CERWASS representative said that his agency has installed water points at 106 schools throughout the province since 1990, more recently with concentration on AFPDs. He mentioned that the list of project schools they receive from CERWASS at the central level frequently does not correspond exactly with the list communicated by MOET.

The PDOET representative made the following recommendations:

1- UNICEF should recognise that situations change from place to place and from province to province, and the level of UNICEF assistance should be set accordingly. The equivalent of $400/school may be adequate in more urban areas but not in certain rural areas where fund raising is more difficult.
2- UNICEF should support educational campaigns to communicate health education messages throughout the community at large.
3- Provincial level meetings of the Project Management Board should be held more regularly.
4- Community representatives should take the initiative to prepare and submit project proposals that include technical specifications for any WATSAN installations that may be included in the project proposal.

4.17.1.2 Hygiene Education.

The level of awareness of the importance of proper hygiene among the students interviewed was assessed as being good. They knew that canal water is not safe to drink, that mosquitoes can cause malaria, etc. Some grade three students had difficulty imagining what a latrine is, as they do not have access to the actual use of latrines themselves.

The Principal estimates that not more than 70% of students have the required health education textbooks. In the view of one of the teachers the relatively low rate of parent literacy in the community may result in them being less concerned with buying textbooks for their children, or for paying secondary school fees, which is not a concern for primary school students as there are no school fees. 66% of the students in a grade two class visited owned the health texts. Books are available in the commune at times of peak demand, but at other times it is necessary to travel at least as far as Thanh Binh Town nine kms. away.

Some newly received health education posters were on display on the classroom walls and it is said that a total of 20 sets of posters are available for use by the six campuses.

The PDOET representative mentioned that schools near urban centres have a higher rate of textbook availability than schools in the more remote communes. He estimated that 85% of the students district wide have health education texts.

The "Medical Prevention Centre" is said to have participated in a health education training course organised by the PDOET and DOH.

4.17.1.3 Sanitation.

There is no latrine at the school, as is reported to be the case for all six campuses. Open defecation is the only available choice, except in those instances where there are "fish pond latrines". One of the teachers interviewed said that she has no access to proper WATSAN facilities. The CPC representative said that there are no plans to build latrines at the commune's schools because the cost of latrines in these flood-prone areas is very high and the commune does not have the required funds. Latrines would need to be raised three metres above ground level to avoid flood waters. He reported having a septic tank latrine at his home, installed in 1994, which in his view has the advantage of not polluting the environment.

It was reported that 12 of the 32 primary schools in the district have proper latrines: 10 (31%) of those installations were assisted by SSHEP and two by the World Bank, which also funded classroom construction. Each World Bank supported latrine installation reportedly cost D 80 million.

The PDOET representative estimated that the cost of proper WATSAN installations at a typical school in this district would be D 32 million, broken down as follows: 1- cost of the latrine: D 17 million; 2- cost of a well: D 4 million; 3- cost of a pump: D 1 million; 4- cost of a reservoir: D 10 million. It was proposed that treated canal water be used, thus eliminating the need for a well. It is expected that the sum of D 4 million would be made available by MOET, which would leave a local funding requirement of D 24 million, in those instances where canal water is used and a well is not required.

He was of the view that the centrally approved latrine designs, which encourage the use of the septic tank latrine, are not appropriate for Dong Thap Province. One of the reasons given was that those latrines cost approximately D 18 million per unit, of which only approximately D 5 million can be expected from UNICEF. The remaining funds would need to be raised locally.

It was estimated that 40% of the province's primary schools have sanitation facilities. No estimate was available on the level of adequacy of those installations.

4.17.1.4 Water.

There is no source of safe water at the school, and this situation is likely to apply to all six campuses. Students carry water from home, buy drinks at school or, on occasion, drink water from the canal without prior treatment or disinfection, as was mentioned by some of the students interviewed. Students are encouraged to carry drinking water from home and it was estimated that 15% of them do so. The Principal mentioned that a UNICEF well was installed in the school yard circa 1990, but the well was abandoned circa 1995 because the water that was being pumped at the time contained sand. The CPC representative said that providing clean water to the school remains a key priority for the commune's administration.

It was estimated that 10% of the commune's households have handpump equipped tubewells, which cost up to D 1.8 million per installation. Groundwater typically contains iron. A significant proportion of the residents still prefer the use of canal water during the dry season and of rainwater during the wet season. Water used from the canal is sometimes boiled, sometimes it is treated with alum and at other times it is used without any form of treatment or disinfection.

The CERWASS representative reported that two of the 10 schools selected for SSHEP assistance in 1998 already have water facilities. Consequently, their office will be responsible for providing water the remaining eight schools.

The PDOET representative requested that CERWASS ensure that schools are included in their plans for community water supply.

4.17.2 Conclusions.

1. None of the school's six campuses have adequate WATSAN facilities.

2. Modifications made at the provincial level to the list of schools assisted by SSHEP in 1994 are not reflected in the MOET list of assisted schools.

3. 70% of the schools initially selected for SSHEP assistance in 1994 reportedly chose not to participate in the project because of their perceived inability to raise the required local contribution to the cost of the project. Relative poverty within these communes may have been the prime reason for which they were unable to benefit from SSHEP.

4. The assertion that no SSHEP assistance has yet been received by the commune despite the fact that it is said to be among the poorest of the district's communes requires discussion.

5. The proportion of the province's primary schools that have received SSHEP assistance (13%) is low.

6. The provincial authorities are unclear on the level of SSHEP funding and its disbursement mechanisms.

7. The PDOET assertion that the 10 schools selected for assistance in 1998 are in 10 of the province's richest communes requires to be discussed.

8. Reported discrepancies between MOET and CERWASS lists of schools to be assisted in any given year need to be clarified.

9. The four specific recommendations made by the PDOET need to be discussed and followed up.

10. Special arrangements and designs are required for the installation of latrines at the district's schools, which are prone to flooding.

11. The World Bank latrine installation project may provide information useful to SSHEP.

12. Canal water is seen by the local authorities as a viable source of water for the district's schools.

13. The view of the PDOET is that the centrally recommended latrine designs, which encourage the use of septic tank latrines, are not appropriate for this province.

4.17.3 Recommendations.

1. Determine a mechanism which would enable schools such as Binh Tan to participate in SSHEP despite the fact that the community finds it difficult to make financial contributions to the project.

2. Ensure that changes made at the provincial level are reflected in SSHEP records at the central level, and that lists produced by MOET and CERWASS are mutually compatible.

3. Compare the level of SSHEP assistance to this province (i.e. to 13% of primary schools) with that of other provinces, and make any required adjustments.

4. Discuss the assertion that the 10 schools selected for assistance in 1998 are located in some of the province's richest communes and rectify if necessary.

5. Discuss the four recommendations made by PDOET.

6. Develop designs for latrines suitable for installation in flood prone areas.

7. Discuss World Bank project developments with that agency, and apply any relevant findings to SSHEP.

8. Investigate the possible use of canal water as a potential alternative for wells.

4.18 Case Study 18: Tri Phai School (Thoi Binh District, Ca Mau)

4.18.1 Observations and Findings.

Table 20: Facts on Tri Phai School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
18	5	1420	85-100%*	low	high	yes**	yes***

* 100% for grades 1-3 and 85% for grades 4-5.
** Adequate at the main campus but the means of disposal of urinal and septic tank effluent needs improvement. Inadequate at the 4 satellite schools.
*** Adequate for the main campus latrine, but drinking water arrangements require improvement. Inadequate at the 4 satellite schools.

4.18.1.1 Background, Planning and Management.

Tri Phai School is located 40 kms. North of Ca Mau Town and is most easily accessible by boat via river and canal. There are 1420 primary school students, none of which are from ethnic minority groups, in 37 classes and 20 classrooms. There are 757 students at the main campus and the remainder are divided up among the four satellite schools. There are 38 teachers, of which 18 are at the main campus, and 7 staff. In addition to the primary school the commune has one kindergarten and one lower secondary school.

The commune is a newly developed area with 2826 households and 10,575 residents, none of whom are from ethnic minority groups.

4.18.1.2 Hygiene Education.

The level of hygiene awareness of the students interviewed is assessed as good. They know, for example, the causes of dengue fever, the importance of using soap and of drinking clean water. The staff of the school recognised that having a latrine at the school provides the students with an opportunity to put theory into practice.

All students in grades one to three are reported to have the required health education textbook, most of which were printed in 1994-95. 85% of students from grades four and five have the texts, some of which were printed in 1998.

Some health related posters were on display in the teachers' room, but these apparently were received very recently.

One teacher interviewed moved here from Nam Dinh, near Hanoi, in 1978. She teaches one 40 minute health education class / week, using a 1998 student health education text as reference; she does not have her own copy of the teachers' health education manual, which she has not yet received from the District Education Office. She said that only one or two of her 50 students do not have the health text. She said that there are a few posters in the library that can be borrowed for teaching, but that she generally refers to pictures from the textbooks in her classes. She recently attended a health education training course.

4.18.1.3 Sanitation.

The school's latrine unit was installed in 1994 with SSHEP assistance. It is located behind one of the classroom blocks and uses water from a nearby tubewell that is equipped with both a handpump and an electrical pump. The quality of construction is good.

The latrine block has four toilets and a six tap hand-washing trough. The urinal areas are large and well protected by high walls. The toilets have 0.5 m. sq. glass windows at the back of each unit, a useful innovation which provides additional light and makes the unit more attractive. Water flows from the well's water tank, through a PVC pipe to the latrine, where it fills the tanks located in the urinal areas, flushes water into the urinal troughs, and provides water to the hand-washing area. Urine and the effluent from the septic tank drain directly into a small pond behind the latrine, through two separate 4" PVC pipes. The effluent from a nearby latrine that belongs to the clinic also drains into the same pond, which also serves as a disposal area for paper and other rubbish. The school's guard has the responsibility for maintaining the latrine. Only the main campus has a proper latrine; the four satellite schools do not yet have sanitation facilities.

Some improvements could be made to the latrine design: 1- The water tank could be raised higher to provide more pressure head; 2- The existing PVC pipe could be replaced by a smaller diameter pipe that would reduce water wastage; 3- A garbage pit could be dug for disposal of used toilet paper and other waste material; 4- Arrangements for the infiltration of urine and tank effluent could be made in order to prevent runoff to the surface, as is the current case.

The combined cost of latrine and well was D 35 million, of which UNICEF contributed the equivalent of D 6 million (17%) in the form of cement and rebars, and PDOET contributed approximately D 29 million. It was not possible to determine whether the latter amount included a MOET component.

The CPC representative said that up to 95% of the commune's households resort to the use of fish-pond latrines, and that most of the residents of the market/school area have septic tank latrines.

It was reported that approximately 1% of the commune's children had malaria or dengue fever in 1997.

4.18.1.4 Water.

The school's water source is a 100 metre deep tubewell that was installed in 1994 with SSHEP assistance. It is located between one of the classroom blocks and the latrine, at a distance of eight metres from the latrine's septic tank. The water is palatable and gives no indication of either iron or chloride content to the taste. The tubewell and "Number Six" handpump mounted on it are housed in a small lockable pump house. A recently installed one HP electrical pump, housed in a separate lockable concrete box, is also connected to the pump. Water can be pumped with either the handpump or the electrical pump to a nearby two cum concrete tank that is raised one metre above ground level, from which water flows by gravity to the latrine.

It was reported that the school's guard is responsible for taking water from the well and placing it in the classroom candle-type filter, of which there appears to be only one, and from which students can take water for drinking. The water is apparently not boiled. Some of the students interviewed said that they carry drinking water from home or take water from households that neighbour the school, while others may drink water from the canal.

There seems to be a preference among householders for tubewell water although rainwater is also extensively used. One estimate indicated that 20% of the commune's residents boil their drinking water, except in the market area where the proportion is reported to be much higher.

4.18.2 Conclusions.

1. The level of ownership of health education textbooks by students is high, while there appears to be a shortage of reference manuals for teachers.

2. The four satellite schools are said to lack both water and sanitation facilities.

3. At the main campus there is sufficient water available for use at the latrine and the well / pump arrangement is good. The initiative shown in installing an electrical pump in addition to the handpump is commendable, but it is likely that the handpump would be capable of meeting the requirements on its own.

4. If the water tank were raised higher it would provide a more adequate amount of pressure in the water flowing to the latrine and hand washing trough.

5. Arrangements for providing drinking water to the students in a regular manner require some improvement. It appears that existing facilities give priority to supplying water to the latrine.

6. The latrine's construction is of good quality. The installation of glass windows in each of the toilet units is a useful innovation as it allows more light to enter and makes the units more attractive.

7. A more appropriate means of disposing of the urine, septic tank effluent and garbage needs to be put in place.

8. Fish pond latrines appear to be the most common means of excreta disposal in the commune.

4.18.3 Recommendations.

1. Discuss possible measures for providing WATSAN facilities to the four satellite schools.

2. Do not compel schools to install electrical pumps, as handpumps are still adequate at some sites. The school should be left to upgrade its facilities at its own pace.

3. Develop a means for providing drinking water to the students on a more regular basis. Because of the well's proximity to the latrine the water from the well should be boiled. The filtering of the well water may not be necessary

4. Encourage the local development of appropriate latrine design modifications, such as the installation of glass windows in the toilet units at this school, and include such innovations in the standard designs that are recommended for use at other schools.

5. Dig a garbage pit and put in place a more appropriate means of urine and septic tank effluent disposal.

4.19 Case Study 19:Tan Dinh School (Ca Mau Town, Ca Mau)

4.19.1 Observations and Findings.

Table 21: Facts on Tan Dinh School.

School #	Total campuses (#)	Total students (#)	Health text ownership (%)	Visual aids on hand (H/M/L)	Awareness (H/M/L)	Latrine(s) adequate (Y/N)	Water source adequate (Y/N)
19	4	702	50%	medium*	high	no**	yes***

* Medium at the main campus, low at the 3 satellite schools.
** Under construction, but likely too small. Inadequate provision for effluent runoff. No latrines at the satellite schools.
*** Adequate at the main campus. No facilities at the satellite schools.

4.19.1.1 Planning and Management.

Tan Dinh School is located 25 kms. N-E of the Ca Mau Town urban area. The school is accessible by car over a distance of 20 kms. and by boat over a distance of five kms. It is one of the schools that is receiving SSHEP assistance in 1998. There are 702 students (382 female and 320 male); only two of the students are from an ethnic minority group (Khmer). The school has four campuses. The main campus has 250 students for each of two daily teaching shifts. There are 24 teachers, 10 of whom teach five classes in five classrooms at the main campus. The four campuses combined teach 24 classes of students in 14 classrooms. There are nine non-teaching staff. There is one lower secondary school in the commune and a total of three primary schools. It was reported that a high proportion of students who complete primary school continue on to secondary school.

The CPC representative mentioned that many of the commune's 2,100 households were affected by last year's typhoon, with the result that 527 households are now classified as "poor and hungry" and 272 households are classified as "hungry".

The MOET list of schools proposed for SSHEP assistance in 1998 includes 15 schools in Thi Xa Ca Mau, while the list that was presented by PDOET includes 10 schools in the same district. Seven of the MOET list schools were removed and two new names were added which, according to the PDOET list, leaves 10 schools for SSHEP assistance in 1998. Two of those 10 schools will simultaneously be provided with latrines and water points.

The district has 30 primary schools, four of which are integrated. There is a total of 84 campuses (30 main campuses plus 54 satellite schools). There are approximately 28,000 students, only 70 of which are from an ethnic minority group (Khmer). Estimates indicate that up to 98% of the district's primary school students continue on to secondary school. Since 1994, 18 (60%) of the district's 30 primary school main campuses have received SSHEP assistance.

DDOE made the following recommendations: 1- UNICEF should cover the total cost of the WATSAN installations at the primary schools it assists; 2- priority should henceforth be given to satellite schools; 3- there should be better co-operation between CERWASS and DDOE.

Minh Hai Province was divided into the two new provinces of Bac Lieu and Ca Mau in 1997. Ca Mau Province has 221 primary schools and a total of more than 2,000 campuses (main campuses plus satellite schools). 36 (10%) of the 221 primary schools have received SSHEP assistance to date. Nearly all of the main campuses are said to have tubewells and it is estimated that 60% of the main campuses have proper latrines.

The UNICEF project contribution for 1998 was received in September and transferred to the district soon afterwards. The facilities at all 10 schools are presently under construction and are likely to be complete by November 1998.

The PDOET Deputy Director mentioned that project co-ordination is sometimes complicated by the fact that the PPC Vice-Chairperson, who is also the Chairperson of the SSHEP Management Board, does not have sufficient time to deal with project related issues. The Vice-Chairperson of the Management Board does not have the authority to make decisions on specific issues nor to co-ordinate the activities of the other two members of the Board: DOH and CERWASS.

The PDOET representative made the following recommendations:
1- It should be left up to the end-user commune to select the type of service it wants.
2- UNICEF's contribution serves as a good catalyst within the community and should be continued.
3- There should be a single responsible agency for project management. The DOE now plans to assume that role, and involve the DOH and CERWASS only when specifically necessary.

4.19.1.2 Hygiene Education.

The level of awareness of the importance of proper hygiene among the seven students interviewed, from grades one, two and five, was high. They knew, for example, the importance of drinking clean water and of hand washing, and they knew that insects can transmit disease.

Only 50% of the students have the required health education textbooks. Only 33% of the students in a grade one class visited had the required texts. Books are not kept for sale at the school and they must be bought either in the Ca Mau Town urban area or in Tat Kan Town. Most parents need to periodically travel to those urban areas on business and can buy the books while there. The Principal mentioned that if the school had sufficient funds it would arrange to buy books for the poorer students.

According to the Principal all of the teachers have the required health education reference manual: the grade one manual was printed in 1993; the manual for grades two and three was printed in 1997 and the one for grades four and five was printed in 1998. One of the teachers mentioned that he borrows the teachers' manual from the library and returns it to the school at year end.

The main campus has approximately 10 sets of posters that include health related components, but none of the satellite schools do. A need was expressed for additional posters and other teaching aids. District officials reported that primary schools receive posters free of cost from the district office.

4.19.1.3 Sanitation.

There are at present no sanitation facilities at the school, and open defecation is used. The new SSHEP assisted latrine which is presently under construction will help improve the situation. Because the school had no available land on which the new latrine could be built the CPC bought a small piece of land, at the rear of the school, for the purpose. No provision has yet been made for the construction of latrines at any of the three satellite schools.

The latrine unit was designed by the Ca Mau Office for Construction and the Principal is not familiar with the details of the design. The latrine building contractor and his workers were at the site. The contractor is a former employee of the Office for Construction, who has been working as an entrepreneur for seven years. He reported having previously installed household latrines but that this is the first latrine he has built at an institution.

The technical drawings of the latrine show an effluent pipe that leads from the three chamber septic tank towards the classroom block. It was reported that the designer did in fact carry out a site assessment which, apparently, was not sufficiently detailed. The contractor realised this arrangement was unworkable and modified the design to add a fourth chamber and to locate the pipe so that it exits from the back; he was unable to clearly explain why a fourth chamber had been added. The contractor stated that his technical responsibility in terms of this contract is limited to the construction of the latrine block itself; he says that he

has no responsibility for the supply of water to the latrine nor for dealing with the drainage problem in the immediate area.

The latrine is a two toilet unit with urinals and entrances towards the front. No provision is made for hand washing. Urine drains out the back through holes in the wall. In an apparent effort to save space the septic tanks are located directly under the latrine and the effluent from the tanks will drain through a pipe at the back. No provision is made for the infiltration of urine or tank effluent. One wall of the latrine abuts against the back wall of the classroom building. The area behind the latrine and the school is low-lying which enables water to stagnate in the space between the latrine and the classroom block. There will be small water tanks in the urinal areas but no provision is being made for additional water storage.

The contractor mentioned that the estimated cost of the latrine is D 13 million, of which he was paid the sum of D 4.3 million in advance. He will receive the balance payment of D 8.7 million once construction has been completed and approved.

It was reported that 250 (12%) of the commune's 2100 households have sanitary latrines and that the remaining 88% of households use fish-pond latrines.

PDOET officials estimate that by end 1998 all of the main campuses of the district's 30 primary schools will have a latrine of one type or another.

The average cost of the latrines installed with SSHEP assistance at the province's primary schools in 1997 was D 11 million / latrine, and the equivalent cost in 1998 is expected to be D 12 million / latrine. The UNICEF input in each case is approximately D 5.1 million / latrine. The remainder of approximately D 7 million / installation is raised by the district, mainly from parents' contributions. District officials were unaware of any contributions they might expect to receive from MOET in 1998.

By the end of 1998 there will be 36 SSHEP assisted installations in the province, the total cost of which is D850 million. The total includes the sum of D180,554,000 which was received from UNICEF in cash. Additional UNICEF contributions in the form of cement, rebars and pre-cast concrete squatting plates were also received. The UNICEF cash contribution includes funds to cover construction and maintenance training costs, as well as a drinking water component in some cases. No assistance has yet been received from CERWASS.

4.19.1.4 Water.

The school's existing water source is a handpump equipped tubewell located at the opposite end of the classroom block, 30 metres from the latrine. There are plans to install a second tubewell at a distance of 10 metres from the latrine. There reportedly are no proper water facilities at the three satellite schools.

There were a number of new, plastic, candle type water filters in each of the classrooms but the water placed in the filters from the tubewell is apparently not boiled.

It was reported that many of the commune's households have installed tubewells at their own expense, at an average cost of approximately D1.8 million / installation. Many households, including those with tubewells, use rainwater; some of those households have tanks large enough to store rainwater throughout the dry season.

All 30 of the district's primary schools reportedly have made arrangements for providing drinking water to the schools, the cost of which is partly covered by the contribution of D700 / student / month that parents make towards the cost of school maintenance.

It was estimated that only 50% of the district's schools have a water source other than river or canal.

The PDOET representative mentioned that CERWASS and PDOET worked together on SSHEP in 1994 but not since. The schools find that CERWASS installations are more expensive and the arrangements more complicated than is the case when the services of open market contractors are retained. When private contractors are employed the school can specify its requirements, while this is apparently not the case installations are put in place by CERWASS. In addition, CERWASS reportedly requires an advance of

D1,350,000 / installation from PDOET and provision for food for their drilling team for a period of two days.

4.19.2 Conclusions.

1. Significant changes were made at the provincial level to the MOET list of schools proposed for SSHEP assistance in 1998. The MOET list is reportedly based on a list that is initiated at the provincial level, and it was not possible to determine why such significant changes were subsequently made by the provincial authorities.

2. PDOET and DDOE each made three SSHEP related recommendations which require discussion at higher levels.

3. 10% of the province's primary school main campuses have received SSHEP assistance to date, but the proportion drops to 2% when the satellite schools are included in the total.

4. Co-ordination of Management Board activities at the provincial level is complicated by the fact that the Board's Chairperson is frequently too occupied with other matters to be able to effectively deal with SSHEP activities, while the Board's Vice-Chairperson lacks the authority to independently co-ordinate those activities.

5. The level of textbook ownership among the school's students is exceptionally low.

6. The new latrine at the main campus will help improve the sanitation situation there, although it appears that the installation may have certain drawbacks: it may prove too small to meet demand, it makes no provision for hand washing nor for proper effluent disposal, and drainage around the installation is poor. All three satellite schools still lack adequate WATSAN facilities.

7. The technical design for the latrine does not exactly match the site requirements, and the contractor was having difficulty in following the technical drawings.

8. It appeared that district level officials had not been informed of the contribution they could expect to receive from MOET in 1998.

9. It appears that CERWASS has not directly participated in SSHEP activities at the provincial level since 1994. The end-users prefer using the services of private contractors.

4.19.3 Recommendations.

1. Determine the reasons for which significant changes were made to the provincial list of SSHEP schools for 1998, and why those changes were not reflected in the MOET list of schools.

2. Discuss the recommendations made by PDOET and DDOE.

3. Establish a means for increasing the level of WATSAN service at the province's satellite schools.

4. Discuss the possibility of redefining the administrative structure of the Provincial Management Board so that the Board's Vice-Chairperson has greater authority to make decisions related to the day-to-day management of the project.

5. Increase the proportion of students at the school who own health education textbooks.

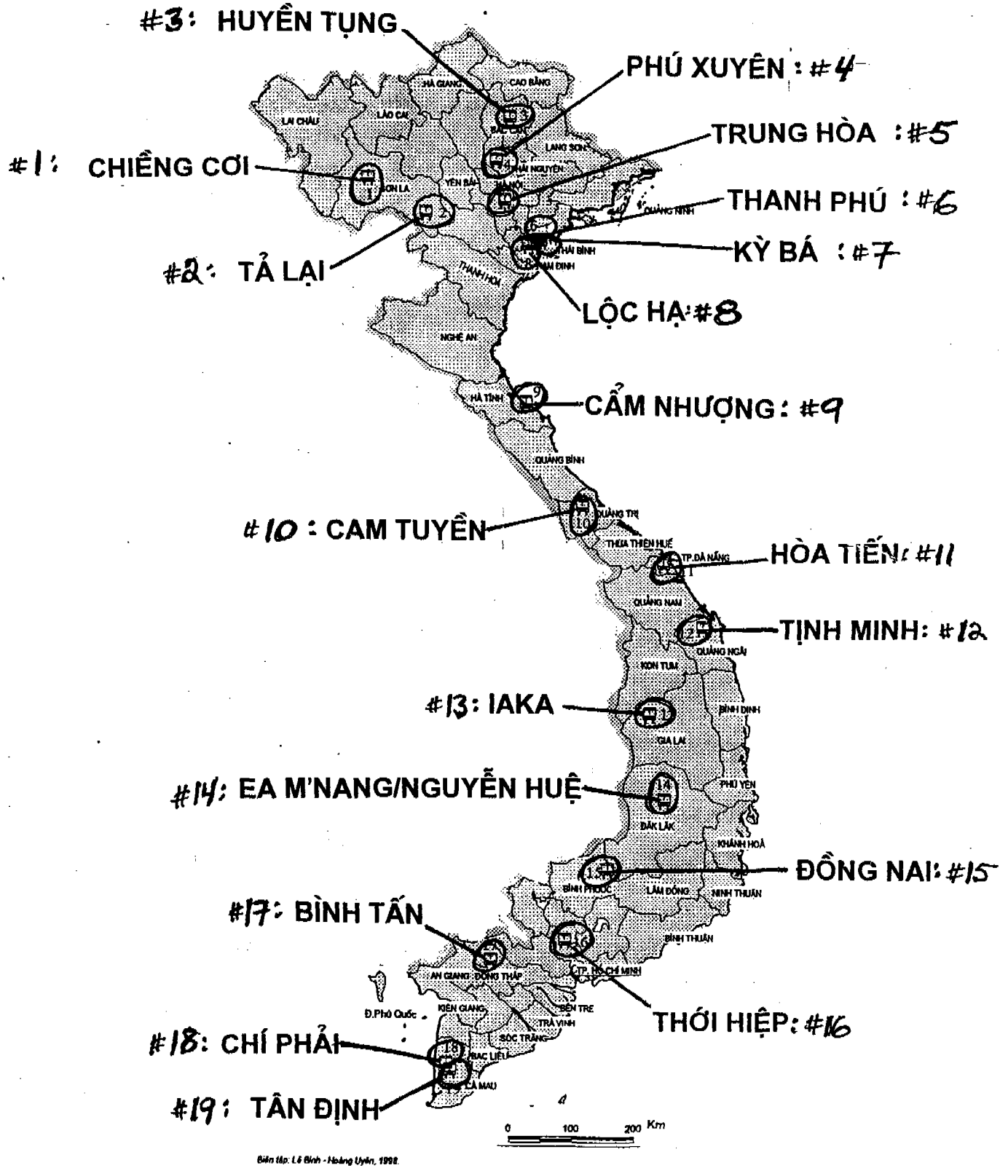
6. Verify the latrine installation and make any modifications that may be required to ensure that it meets the school's basic sanitary requirements.

7. Ensure that all interested parties are aware of the project's funding arrangements, amounts and disbursement mechanisms.

8. Support the possibility that the end-users can choose what they consider to be the most suitable contractor from a list of several qualified contractors. CERWASS could be among those potential contractors if it so wishes.

5 Appendixes.

SITES VISITED



Biên tập: Lê Bình - Hoàng Uyên, 1998.

APPENDIX 2
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Abbreviations and Acronyms.

AFPD	Area Focused Programme District
CARERE	Cambodian Area Rehabilitation and Regeneration Project.
CERWASS	Centre for Rural Water Supply and Environmental Sanitation.
CPC	Commune People's Committee.
cum	cubic metre
DANIDA	Danish Aid Agency
DDOE	District Department of Education
DOH	Department of Health.
DOLISA	Department of Labour, Invalids and Social Affairs
DPC	District People's Committee.
HCMC	Ho Chi Minh City
IEC	Information, Education and Communication.
LFA	Logical Framework Approach.
lps	litres per second.
lpd	litres per day
MOET	Ministry of Education and Training.
MOH	Ministry of Health.
MPI	Ministry of Planning and Investment
MPO	Master Plan of Operations
NGO	Non Governmental Organisation.
ODA	Official Development Assistance
PDOET	Provincial Department of Education and Training
PPC	Provincial People's Committee.
PVC	Polyvinyl Chloride
SSHEP	School Sanitation and Health Education Project
SWL	Static Water Level.
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund.
UNOPS	United Nations Office for Project Services
WATSAN	Water and Sanitation.
WID	Women in Development
WRM	Water Resources Management.

EVALUATION OF UNICEF ASSISTED SCHOOL SANITATION AND HEALTH EDUCATION PROJECT

WORK AND TRAVEL SCHEDULE

16 SEPTEMBER – 4 DECEMBER 1998

Site #	Date	Description
	We 16.09	**Hanoi.** Team Leader arrives from Bangkok.
	Th 17.09	**Hanoi.** Evaluation Team briefing and meeting at UNICEF.
	Fr 18.09	**Hanoi.** Development of criteria for the selection and select sites to be visited.
	Sa 19.09 to Mo 21.09	**Hanoi.** Selection of the sites to be visited (continued). Preparation of an itinerary for the 20 sites to be visited and discussion of the mission's main areas of study.
	Tu 22.09	**Hanoi to Son La Town** (Son La Province).
1	We 23.09	**Son La Town to Chieng Coi School** (Son La District, Son La Province)
2	Th 24.09	**Son La Town to Ta Lai School** (Moc Chau District, Son La Province).
	Th 24.09	**Ta Lai School to Hanoi.**
	Fr 25.09	**Hanoi to Bac Can Town** (Bac Can Province).
3	Fr 25.09	**Bac Can Town to Huyen Tung School** (Bach Thong District, Bac Can Province).
4	Sa 26.09	**Bac Can Town to Phu Xuyen School** (Dai Tu District, Thai Nguyen Province).
	Sa 26.09	**Phu Xuyen School to Hanoi.**
	Su 27.09	**Hanoi.** No scheduled activities.
5	Mo 28.09	**Hanoi to Trung Hoa School** (Tu Liem District, Hanoi Province).
	Mo 28.09	**Trung Hoa School to Thai Binh Town** (Thai Binh Province).
6	Tu 29.09	**Thai Binh Town to Thanh Phu School** (Vu Thu District, Thai Binh Province).
7	Tu 29.09	**Thanh Phu School to Ky Ba School** (Thai Binh Town).
8	We 30.09	**Thai Binh Town to Loc Ha School** (Nam Dinh Province).
	We 30.09	**Loc Ha School to Thanh Hoa Town** (Thanh Hoa Province).
	Th 01.10	**Thanh Hoa Town.** Team review.
	Th 01.10	**Thanh Hoa Town to Ha Tinh Town** (Ha Tinh Province).
9	Fr 02.10	**Ha Tinh Town to Cam Nhuong School** (Cam Xuyen District, Ha Tinh Province).
	Fr 02.10	**Cam Nhuong School to Dong Hoi Town** (Quang Binh Province).
10	Sa 03.10	**Dong Hoi Town to Cam Tuyen School** (Cam Lo District, Quang Tri Province).
	Sa 03.10	**Cam Tuyen School to Hue.**
	Su 04.10	**Hue.** No scheduled activities.
11	Mo 05.10	**Hue to Hoa Tien School** (Hoa Vang District, Da Nang City).
	Mo 05.10	**Hoa Tien School to Quang Ngai Town** (Quang Ngai Province).
12	Tu 06.10	**Quang Ngai Town to Tinh Minh School** (Son Tinh District, Quang Ngai Province).
	Tu 06.10	**Tinh Minh School to Quy Nhon Town** (Binh Dinh Province).
	We 07.10	**Quy Nhon Town to Playcu Town** (Gia Lai Province).
13	Th 08.10	**Play Cu Town to Iaka School** (Chupah District, Gia Lai Province).
	Th 08.10	**Iaka School to Buon Ma Thuot Town** (Dak Lak Province).
14	Fr 09.10	**Buon Ma Thuot Town to Ea M'nang School** (Cu M'gar District, Dak Lak Province).
	Sa 10.10	**Buon Ma Thuot Town to Ho Chi Minh City**
	Su 11.10	**Ho Chi Minh City.** No planned activities.
15	Mo 12.10	**Ho Chi Minh City to Dong Nai School** (Bu Dang District, Binh Phuoc Province).
	Mo 12.10	**Dong Nai School to HCMC.**
16	Tu 13.10	**Ho Chi Minh City to Thoi Hiep School** (Hoc Mon District, HCMC).
	Tu 13.10	**Thoi Hiep School to Cao Lanh Town** (Dong Thap Province).
17	We 14.10	**Cao Lanh Town to Binh Tan School** (Thanh Binh District, Dong Thap Province).
	We 14.10	**Binh Tan School to Can Tho City** (Can Tho Province).
18	Th 15.10	**Can Tho City to Chi Phai School** (Thoi Binh District, Ca Mau Province).
	Th 15.10	**Chi Phai School to Ca Mau Town.**
19	Fr 16.10	**Ca Mau Town to Tan Dinh School** (Ca Mau Town).
	Fr 16.10	**Ca Mau Town to Can Tho City** (Can Tho Province).
	Sa 17.10	**Can Tho to HCMC.**
	Sa 17.10	**HCMC.** Team review.
	Su 18.10	**HCMC.** No planned activities.
	Mo 19.10	**HCMC.** Team review and report writing.
	Tu 20.10	**HCMC.** UNICEF office. Presentation of findings.
	Tu 20.10	**HCMC to Hanoi** by plane.
	We 21.10	**Hanoi.** Project discussion with MOET, MOH and CERWASS Directors.
	We 21.10	**Hanoi.** Project discussion with UNICEF Rep., Sr. Prog. Officer & WATSAN staff.
	Th 22.10	**Hanoi.** Joint presentation of findings to government and UNICEF staff.
	Fr 23.10	**Hanoi.** Report writing. (Fr 23.10 to Th 03·12)
	TH 03·12	**Submission of the final report.**

LIST OF PERSONS WITH WHOM DISCUSSIONS WERE HELD

1.	Prof. Dr.Nguyen Vo Ky Anh	Director, National Management Board
2.	Dr. Le Kim Dung	Secretary, National Management Board
3.	Dr. Doan Thi My	MOET Specialist, National Management Board
4.	Ms. Nguyen Thi Son	Project Accountant, National Management Board
5.	Ms. Nguyen Lan Anh	MOET Officer, National Management Board
6.	Mr. Gvido Borghese	Senior Health Project Officer, UNICEF Hanoi
7.	Mr. Waldemar Pickardt	WATSAN Project Officer, UNICEF Hanoi
8.	Mr. Mohammad Omar	WATSAN Section Chief Officer, UNICEF Hanoi
9.	Mr. Nguyen Quang Quynh	Sanitation Project Officer, UNICEF Hanoi
10.	Mr. Le Quang Vinh	WATSAN Poject Officer, UNICEF Hanoi
11.	Mr. Nguyen Duy Hoa	WATSAN Project Officer, UNICEF Hanoi
12.	Mr. Nguyen Trong Quang	WATSAN Project Officer, UNICEF HCMC
13.	Ms. Can Thi Kieu	Vice Director, POET, Deputy Director of the Project, Son La Province
14.	Mr. Do Trong Thanh	Secretary of the Project, POET, Son La Province
15.	Mr. Tran Van Hai	CERWASS, Secretary of the Project, Son La Province
16.	Ms. Dang Bich Ngoc	Headmaster, Chieng Coi Primary School, Son La Town, Son La Province
17.	Ms. Tran Thi Oanh	Teacher, Chieng Coi Primary School, Son La Town, Son La Province
18.	Ms. Ha Hoa Ban	Teacher, Chieng Coi Primary School, Son La Town, Son La Province
19.	Mr. Lu Van Vinh	Chief, Chieng Coi Commune, Son La Town, Son La Province
20.	Mr. Pham Duc Sach	Chair of the Education Council, Chieng Coi CPC, Son La Province
21.	Mr. Lo Van Thai	Vice Director, DOET of Son La Town, Son La Province
22.	Ms. Pham Thi Phuong	Deputy Headmaster, Chieng Coi Primary School, Son La Town, Son La Prov.
23.	Mr. Nguyen Van Huong	Head of the Prim. and Sec. Education Dept., POET, Son La Province
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25.	Mr. Nguyen Quoc Tuan	DOET of Son La Town, Son La Province
26.	Mr. Dinh Van Danh	Chief, Ta Lai Commune, Moc Chau District, Son La Province
27.	Mr. Pham Van Trech	Headmaster, Ta Lai Primary School, Moc Chau District, Son La Province
28.	Mr. Ngo Xuan Vinh	Key person for school's contruction, DOETof Moc Chau, Son La Province
29.	Mr. Hoang Cao Nguyen	Deputy Secr. of the Communist Party, Ta Lai commune, Moc Chau Town
30.	Mr. Mui Van Bich	Deputy Director, Commune People Council, Moc Chau Dist., Son La Province
31.	Mr. Ha Si Hung	Secretary of the Project , POET, Bac Can Province
32.	Mr. Nguyen Thanh Binh	Headmaster, Huyen Tung Secondary School, Bac Can Town, Bac Can Province
33.	Ms. Dinh Thi Sam	Headmaster, Huyen Tung Primary School, Bac Can Town, Bac Can Province
34.	Mr. Nong Van Co	Officer, Huyen Tung CPC, Bac Can Town, Bac Can Province
35.	Mr. Vi Van Dao	Deputy Director, POET, Bac Can Province
36.	Mr. Nguyen Chu Thai	Primary and Secondary Education Dept., POET, Bac Can Province
37.	Ms. Trieu Lan	Head, Primary and Secondary Education Dept., POET Bac Can Province
38.	Mr. Lam Quang Hop	Vice Director, Provincial Office of Health, Bac Can Province
39.	Mr. Le Duy Vi	Director, POET, Thai Nguyen Province
40.	Mr. Hoang Quoc Cuong	Director, CERWASS, Thai Nguyen Province
41.	Mr. Vuong Van Thanh	Deputy Head of the Planning Dept., CERWASS, Thai Nguyen Province
42.	Mr. Tran Ngoc Thinh	Secretary of the Project, POET, Thai Nguyen Province
43.	Mr. Luong The Cuong	Headmaster, Phu Xuyen Primary School, Dai Tu Dist. Thai Nguyen Province
44.	Ms. Nguyen Thi Tam	Deputy Headmaster, Phu Xuyen Prim. School, Dai Tu Dist. Thai Nguyen Prov.
45.	Mr. Ha Trong Phong	Director, DOET of Dai Tu, Thai Nguyen Province
46.	Mr. Nguyen Dinh Hoi	Official, DOET of Dai Tu, Thai Nguyen Province
47.	Mr. Nguyen Van Duc	Chief, Phu Xuyen CPC, Dai Tu Dist. Thai Nguyen Province
48.	Mr. Nguyen Van Quat	Deputy Chief, Phu Xuyen CPC, Dai Tu Dist. Thai Nguyen Province
49.	Mr. Le Quang Giao	Official, Hanoi POET, Hanoi City
50.	Mr. Nguyen Cong Cuong	Official, Cau Giay DOET, Hanoi City
51.	Ms. Nguyen Thi Ky	Representative, Trung Hoa CPC, Cau Giay Dist. Hanoi City
52.	Ms. Pham Thi Ha	Rep., Parent's Association, Trung Hoa Pri. School, Cau Giay Dist., Hanoi City
53.	Ms. Nguyen Thi Can	Headmaster, Trung Hoa Primary School, Cau Giay Dist. Hanoi City
54.	Mr. Tran Thanh Lang	Deputy Headmaster, Trung Hoa Primary School, Cau Giay Dist. Hanoi City
55.	Mr. Bui The Hien	Vice Director, Thai Binh Medical Preventive Center, Thai Binh Province.
56.	Mr. Nguyen Thanh Cam	Vice Director, POET, Thai Binh Province
57.	Mr. Pham Dang Tan	Director, CERWASS, Thai Binh Province
58.	Mr. Tran Ngoc Bien	Medical Preventive Center, Secretary of the Project, Thai Binh Province
59.	Mr. Dang Van Cao	Secretary of the Project, POET, Thai Binh Province

60. Mr. Pham Ngoc Dang	Director, POET, Thai Binh Province
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63. Mr. Tran Xuan De	Official, Dept. oi Primary Education, Vu Thu DOET, Thai Binh Province
64. Mr. Pham Vu Khanh	Headmaster, Thanh Phu Primary School, Vu Thu Dist. Thai Binh Province
65. Mr. Pham Thanh Luong	Representative, Parent's Association, Vu Thu Dist. Thai Binh Province
66. Ms. Ta Thi Nga	Deputy Headmaster, Thanh Phu Primary School, Vu Thu Dist. Thai Binh Prov.
67. Ms. Le Thi Thoa	Headmaster, Ky Ba Primary School, Thai Binh Town, Thai Binh Province
68. Mr. Nguyen Van Dan	Chair, Thai Binh Town People's Committee, Thai Binh Province
69. Ms. Le Thi Thao	Deputy Headmaster, Ky Ba Primary School,Thai Binh Town, Thai Binh Prov.
70. Ms. Nguyen Xuan My	Director, Thai Binh Town DOET,Thai Binh Province
71. Ms.Nguyen Thi Thanh	Head, Dept. of Primary Education, DOET, Thai Binh Province
72. Mr. Nguyen Van Vuong	Secretary of the Communist Party, Thai Binh Town, Thai Binh Province
73. Mr. Nguyen Xuan Sac	Director, POET, Nam Dinh Province
74. Mr. Duong Quang Hung	Secretary of the Project, POET, Nam Dinh Province
75. Mr. Nguyen Duc Long	Doctor of Medicine, Nam Dinh Health Department, Nam Dinh Province
76. Mr.Tran Ngoc De	Doctor of Medicine, Medical Preventive Center, Nam Dinh Province
77. Mr. Tran Trung Nung	Director, DOET of Nam Dinh City, Nam Dinh Province
78. Mr. Tran Ngoc Hieu	Vice Director, CERWASS, Nam Dinh Province
79. Mr.Tran Duc Thuat	Deputy Headmaster, Loc Ha Secondary School, Nam Dinh Province
80. Mr.Tran Xuan Giang	Chair, Loc Ha CPC, Nam Dinh City, Nam Dinh Province
81. Mr. Tran Cong Quang	Member of Communist Party, Loc Ha Com., Nam Dinh City, Nam Dinh Prov.
82. Mr. Tran Quoc An	Headmaster, Loc Ha Primary School, Nam Dinh City, Nam Dinh Province
83. Ms. Mai Thi Nhung	Headmaster, Loc Ha Secondary School, Nam Dinh City, Nam Dinh Province
84. Mr. Tran Duc Phuong	Chair, Parent's Ass., Loc Ha Sec. School, Nam Dinh City, Nam Dinh Province
85. Mr Nguyen Tuan	POET, Nam Dinh City, Nam Dinh Province
86. Mr. Tran Duc Thuat	Deputy Headmaster, Loc Ha Pri. School, Nam Dinh City, Nam Dinh Province
87. Mr. Vu Duc Hanh	Nam Dinh DOET, Nam Dinh City, Nam Dinh Province
88. Mr. Le Duc Quy	Vice Director, POET, Ha Tinh Province
89. Mr. Nguyen Van Nam	Secretary of the Project, POET, Ha Tinh Province
90. Mr. Nguyen Dac Hoan	Official, DOET, Cam Xuyen Dist., Ha Tinh Province
91. Mr. Luong Quoc Thuoc	Headmaster, Cam Nhuong Primary School, Cam Xuyen Dist., Ha Tinh Prov.
92. Mr. Truong Van Tri	Chair, Cam Xuyen CPC, Cam Xuyen Dist., Ha Tinh Province
93. Mr.Ho Trong Mai	Head, Dept. of Administration, POET, Ha Tinh Province
94. Mr. Ho Si Nguyen	Director, POET, Quang Tri Province
95. Ms Nguyen Thi Dam	Head, Dept. of Administration, Secretary of the Project, Quang Tri Province
96. Mr. Bui Quang Hung	Dept. of Primary Education, POET, Quang Tri Province
97. Mr. Phan Huu Buu	CERWASS , Quang Tri Province
98. Mr. Nguyen Duc Tinh	Department of Health of Quang Tri, Quang Tri Province
99. Mr. Tran Song	Headmaster, Cam Tuyen Primary School, Cam Lo Dist., Quang Tri Province
100.Mr. Nguyen Huynh	Vice Director, Cam Lo DOET, Quang Tri Province
101.Mr. Tran Van Phuc	Deputy Headmaster, Cam Tuyen Pr. School, Cam Lo Dist., Quang Tri Prov.
102.Ms. Nhung	Secretary of the Project, POET, Da Nang City
103.Mr. Nhat	Medical Preventive Center, Da Nang City
104.Mr. Nguyen Dinh Hung	Headmaster, Hoa Tien Primary School, Hoa Vang Dist., Da Nang City
105.Mr. Phuoc	Vice Director, DOET, Hoa Vang Dist., Da Nang City
106.Mr. Nguyen Van Tang	Chair, Hoa Vang CPC, Hoa Vang Dist., Da Nang City
107.Mr.Le Van Huyen	Chair, Parent's Ass., Hoa Tien Commune, Hoa Vang Dist., Da Nang City
108.Mr. Vu Van Dung	Vice Director, POET, Quang Ngai Provice
109.Mr. Nguyen Van De	Chair, Parents' Ass., Tinh Minh Com., Son Tinh Dist. Quang Ngai Prov.
110.Mr. Huynh Hau	Secretary of the Project, POET, Quang Ngai Provice
111.Mr. Le Lai	Headmaster, Tinh Minh Prim. School, Son Tinh Dist. Quang Ngai Province.
112.Mr. Nguyen Tien Dung	Chair, Tinh Minh CPC, Son Tinh Dist. Quang Ngai Province.
113.Mr. Bui Trung	Vice Director, Son Tinh DOET, Quang Ngai Province
114.Mr. Nguyen Nam Hao	Official, Son Tinh DOET, Quang Ngai Province
115.Mr. Luong Huy Nom	Vice Director, POET, Gia Lai Province
116.Ms. Hue	Vice Director, Medical Preventive Center, Gia Lai Province
117.Mr. Thai Trong An	Official, Chu Pah DOET, Gia Lai Province
118.Mr. Ro Chum Kra	Chair, Iaka CPC, Chu Pah Dist., Gia Lai Province
119.Mr. Dang Quang Vinh	Director, Chu Pah DOET, Gia Lai Province
120.Ms. Vu Thi Phuong Thuy	Headmaster, Iaka Prim. and Sec. School, Chu Pah Dist., Gia Lai Prov.
121.Mr. Hoang Phuong Dong	Dept. of Primary Education, POET, Gia Lai Province
122.Ms. Ro Mah Plo	Chair, Iaka People's Council, Chu Pah Dist., Gia Lai Province
123.Mr. Pham Thi Cach	Deputy Headmaster, Iaka Prim. and Sec. School, Chu Pah Dist., Gia Lai Prov.

124.Mr.Bui Van Tam	Vice Director, CERWASS, Gia Lai Province
125.Mr. Tran Ngoc Sang	Deputy Headmaster, Iaka Prim. and Sec. School, Chu Pah Dist., Gia Lai Prov.
126.Mr. Rmah Blo	Chair, Iaka CPC, Chu Pah Dist., Gia Lai Province
127.Ms. Huynh Thi Xuan	Vice Chairwoman, Dak Lak People's Committee, Dak Lak Province
128.Mr. Thai Van Khoa	Vice Director, POET, Dak Lak Province
129.Mr. Khuc Dinh Dung	Vice Director, CERWASS, Dak Lak Province
130.Mr. Trinh Chu Du	Head, Dept. of Sanitation, Medical Preventive Center, Dak Lak Province
131 Mr. Bui Quang Loc	Director, Medical Preventive Center, Dak Lak Province
132.Mr. Hoang Trong Hieu	Secretary of the Project, POET, Dak Lak Province
133.Mr. Tran Dinh Thanh	Deputy Director, Cu Mgar DOET, Dak Lak Province
134.Mr. Nguyen An Binh	Headmaster, Nguyen Hue Prim. and Sec. School, Cu M'ga Dist. Dak Lak Prov.
135.Mr. Le Van Ba	Chair, Ea Mnang CPC, Dak Lak Province
136.Mr. Tran Trong Quyen	Vice Chair, Ea Mnang People's Council, Cu M'ga Dist. Dak Lak Province
137.Mr. Nguyen Minh Hoa	Ea Mnang CPC, Cu M'ga Dist., Dak Lak Province
138.Mr. Nguyen Cong Duong	Vice Secretary of the Communist Party, Ea Mnang Comm., Dak Lak Province
139.Mr. Vo Do Cuong	Headmaster, Dong Nai Primary School, Bu Dang Dist. Binh Phuoc Province
140.Mr. Thu	Bu Dang DOET, Binh Phuoc Province
141.Mr. Roi	Vice-Chair, Dong Nai CPC, Bu Dang Dist. Binh Phuoc Province
142.Mr. Ngo The Trong	Vice Director, POET, HCMC
143.Mr. Lam Van Dua	Dept. of Primary Education, POET, HCMC
144.Mr. Nguyen Tai Dung	Official, POET, HCMC
145.Ms. Nguyen Kim Oanh	Secretary of the Project, POET, HCMC
146.Mr. Nguyen Trung Tinh	Headmaster, Tan Thoi Hiep Prim. and Sec. School, Hoc Mon Dist., HCMC
147.Mr. Nguyen Van Bich	Chair, Parent's Association, Tan Thoi Hiep Com., Hoc Mon Dist., HCMC
148.Mr. Nguyen Trung Hieu	Vice Director, POET, Dong Thap Province
149.Mr. Huynh Van Tang	Medical Preventive Center
150.Mr. Le Van Tu	Director, CERWASS, Dong Thap Province
151.Ms. Tran Thi Hoang Anh	Secretary of the Project, POET, Dong Thap Province
152.Mr.Le Hoang Khoanh	Official, POET, Dong Thap Province
153.Mr. Nguyen Thien Thanh	Vice Chairman, Binh Tan CPC, Thanh Binh Dist Dong Thap Province
154.Mr. Tran Phuc Nghia	Deputy Headmaster, Binh Tan Pr. School, Thanh Binh Dist., Dong Thap Prov.
155.Mr. Vo Van Gap	Director, Thanh Binh DOET, Thanh Binh Dist., Dong Thap Prov
156.Mr. Nguyen Van Duoc	Headmaster, Binh Tan Pr. School, Thanh Binh Dist., Dong Thap Province
157.Mr. Doan Duc Chi	Ca Mau POET, Ca Mau Province
158.Mr. Huynh Si Nguyen	Vice Director, DOET, Ca Mau Province
159.Mr. Nguyen Van Tam	Dept. of Primary Education, POET, Ca Mau Province
160.Mr. Nguyen Truong Ton	Headmaster, Tri Phai Primary School, Thoi Binh Dist., Ca Mau Province
161.Ms. Nhung	Deputy Headmaster, Tri Phai Prim. School, Thoi Binh Dist., Ca Mau Province
162.Mr. Nguyen Vu	Representative, Tri Phai CPC, Thoi Binh Dist., Ca Mau Province
163.Mr. Dang Huu Hien	Vice Chair, Ca Mau Town PC, Ca Mau Province
164.Mr. Ho Dai Quang	Headmaster, Tan Dinh Primary School, Ca Mau Town, Ca Mau Province
165.Mr. Duong	Constructor of the Tan Dinh's Latrine Installation, Ca Mau Town, Ca Mau Prov.
166.Mr. Tran Khanh Nam	Deputy-Director, Camau Town DOET, Ca Mau Province

EVALUATION OF THE UNICEF SCHOOL SANITATION AND HEALTH EDUCATION PROJECT

AREAS OF STUDY

#	Main Areas of Study	Specific Areas of Study	Responsible Person
1	**Level of Awareness.** Awareness of students, teachers and parents with regard to hygiene, water and sanitation.	**Observations:** • cleanliness / tidiness of home, latrine and yard. • personal cleanliness (hair, skin, fingernails and clothing). • availability of soap. • tooth care. • food hygiene. • water drainage. • water storage in the home. • cleanliness of the water source. • garbage disposal. • distance from latrine to water source. **Questions:** • do you have a latrine at home? • do you have a clean water source? • how can dirty water make you sick? • is proper faeces disposal important? Why? • is proper garbage disposal important? Why? • how can housefiles spread disease? •	HAO
2	**IEC Materials.** Availability and use of IEC materials.	• compare IEC materials actually available with those on the list (see checklist) • indicate IEC materials available that do not appear on the list. • how are IEC materials used? (i.e. for display, home study, etc.). • how many hours / week are IEC related classes given? • estimated proportion of students who own health education textbooks. • do students pay for textbooks? how much? • was there an expressed need for additional IEC materials?	LIEM
3	**Monitoring & Management** Assessment of M&M at central and local levels.	• degree of contact / communication between interested parties: govt / govt and govt / UNICEF. • planning capacity. • mechanisms in place, and their accuracy. • effectiveness of reporting / monitoring mechanisms in place. • participatory monitoring. • end-user involvement at the planning stage. • quality of project plans and project agreements.	LIEM
4	**Technical Appropriateness** Appropriateness of the WATSAN technology used in schools.	• choice of technology. • availability of spare parts and tools. • users' ability to maintain the facilities. • per-capita cost.	LEO
5	**Technical Quality** Quality of the WATSAN facilities constructed.	• quality of construction. • quality of supplies and equipment used. • quality of technical design and specifications. • contractor competence.	LEO
6	**Use and Maintenance** Assessment of the level of use and maintenance of the facilities.	• are the facilities being used? • are the facilities being regularly and satisfactorily maintained? • has specific responsibility for maintenance been assigned? • are spare parts and tools readily available? • is there a reliable source of maintenance funds?	LIEM
7	**Inter-Agency Collaboration** Assessment of the effectiveness of collaboration between support agencies for the project.	• key players. • extent to which the key players observe common strategies.	HAO
8	**Funding Arrangements** Assessment of existing UNICEF funding arrangements: source, disbursement and control.	• general resources and special funding. • disbursement channels and mechanisms. • acccunting. • accountability.	HAO

Summary of Differences between Blueprint and Learning Process Approaches

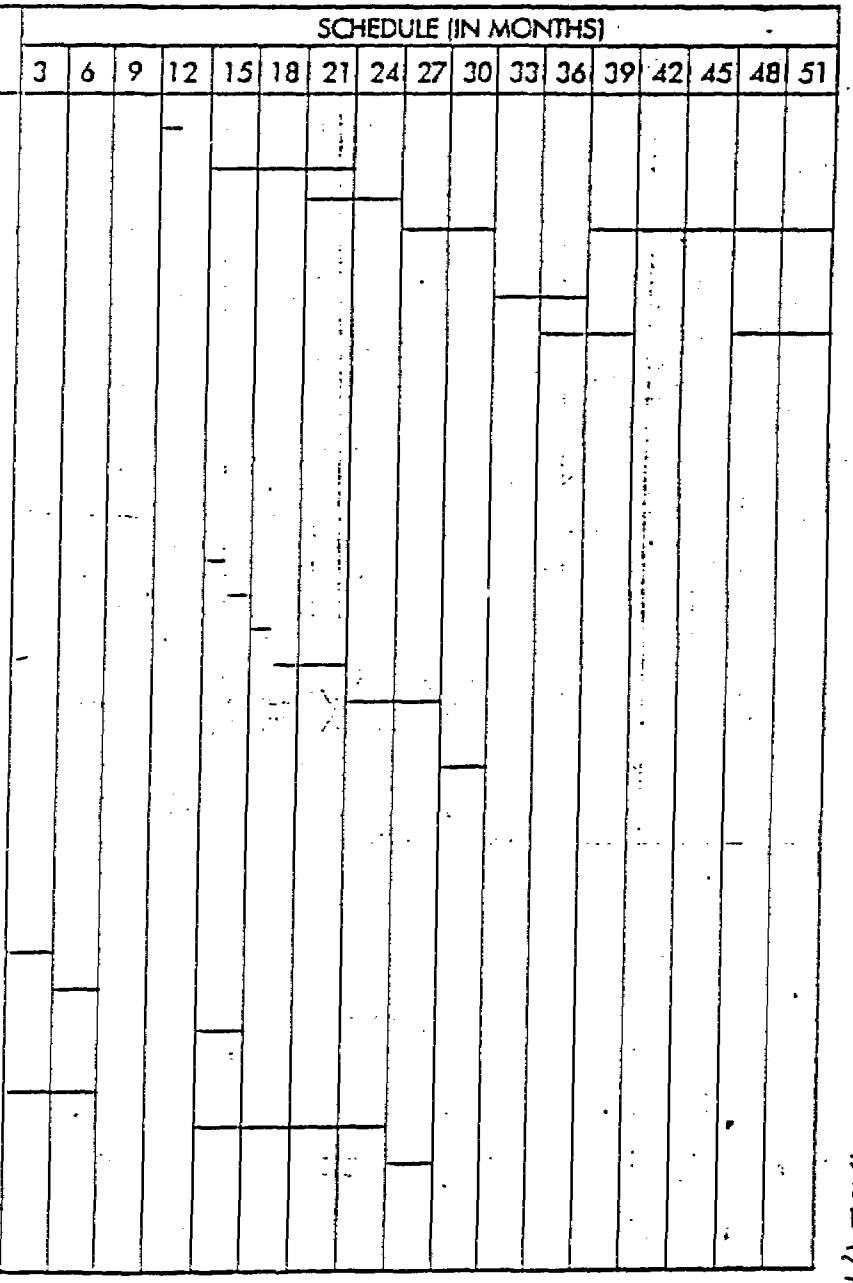
Issue	*Blueprint approach*	*Learning process approach*
Purpose	For large-scale construction projects	For institutional reform and demand-based approaches
Role of government	Provide services	Create policy framework to facilitate and initiate beneficiary and stakeholder involvement
Role of people/users	Peripheral; pay utility charges	Central; take initiative, learn; problem solve; process facilitated by "external" agents, as needed
Project documents	Detailed, accurate masterplans essential for success; technology choice and service levels predetermined	Broad guidelines; detailed plans produced at community level; no master plans but clear working goals, strategies; monitoring and evaluation criteria essential
Role of managers	Manage construction activities	Manage unpredictability by creating a problem-solving environment
Personal evaluation criteria	Construction completed, adherence to schedules, unit costs	Primarily promotion of local reliance
Role of data	Extensive physical, economic data base before implementation by experts	Limited data collection before implementation, including cultural and social data; continued throughout by community people and project staff
Role of evaluation	Primarily a terminal entity; conducted by external experts	Ongoing evaluation by community people and project staff
Indicators of success	Quality and quantity of construction; unit costs	Effective use of facilities, sustainability, empowerment
Interagency collaboration	Consultations needed; collaboration during implementation not essential	Working collaboration essential for achieving indicators of success

Source: Adapted from Korten (1980).

PRELIMINARY WORK PLAN

Objective :

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY
2.5 Training on training methods	Consultant
2.6 Pilot implementation of diploma course	Consultant/NIFT staff
2.7 Evaluation, revision of curricula	Consultant, NIFT staff
2.8 Preparation of CE courses	" "
2.9 Pilot implementation of CE courses	" "
2.10 Evaluation, revision	" "
OUTPUT 3	
New programmes in applied research, consultancy and information services	
Activities	
3.1 Training needs assessment	Consultant
3.2 Preparation of training	"
3.3 Training	"
3.4 Preparation of pilot programmes	Consultant/NIFT staff
3.5 Implementation of pilot programmes	NIFT staff
3.6 Review and revision of programmes	Consultant an NIFT staff
OUTPUT 4	
Upgraded facilities and equipment	
Activities	
4.1 Review of equipment needs	Consultants, NIFT Director
4.2 Procurement	NIFT Director
4.3 Installation and testing of equipment	Supplier
4.4 Planning new facilities	NIFT Director
4.5 Construction	Contractor
4.6 Relocation	NIFT staff



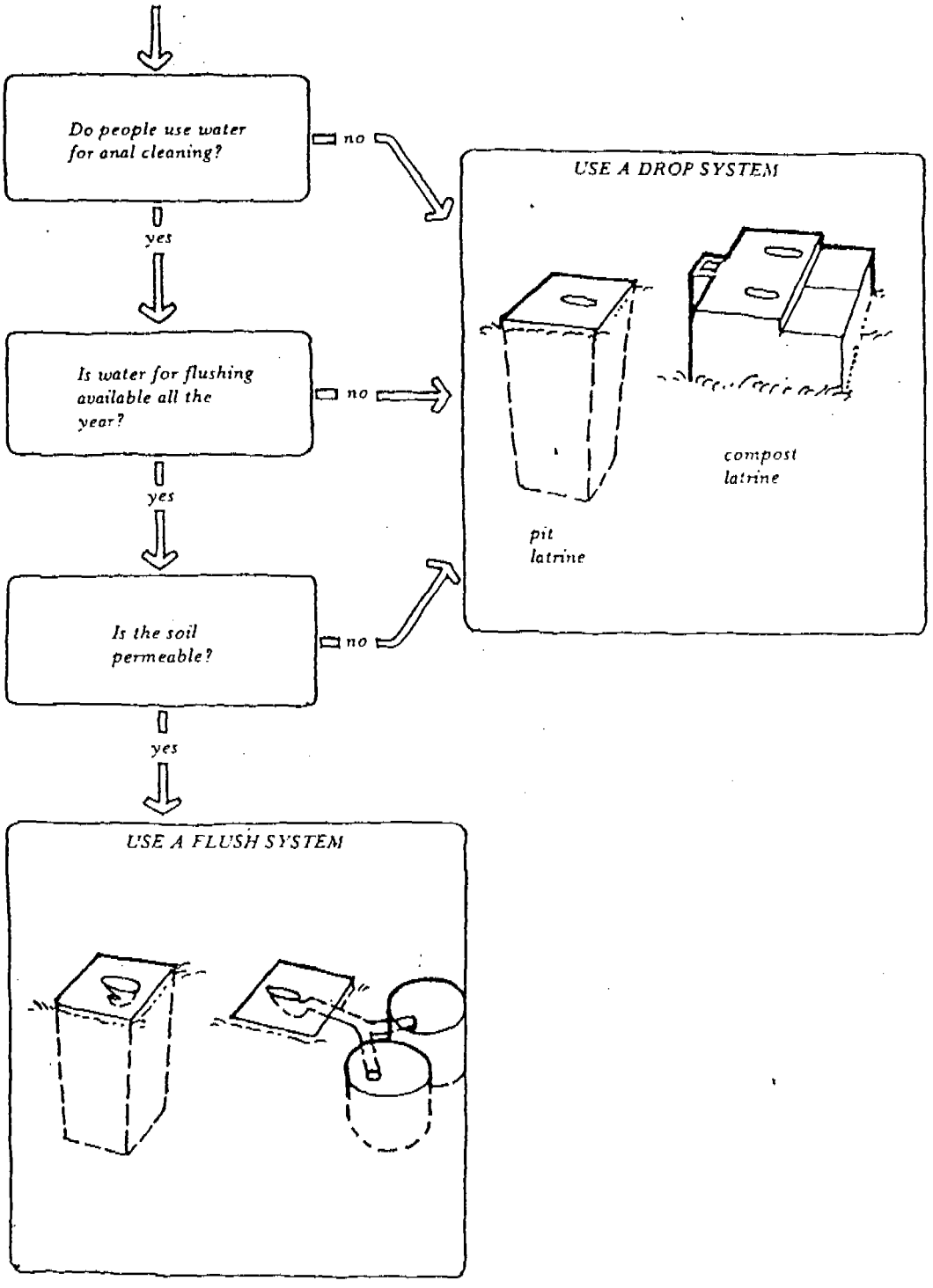
APPENDIX 7
PAGE 1/1

Current principles on water resources management and their gender aspects

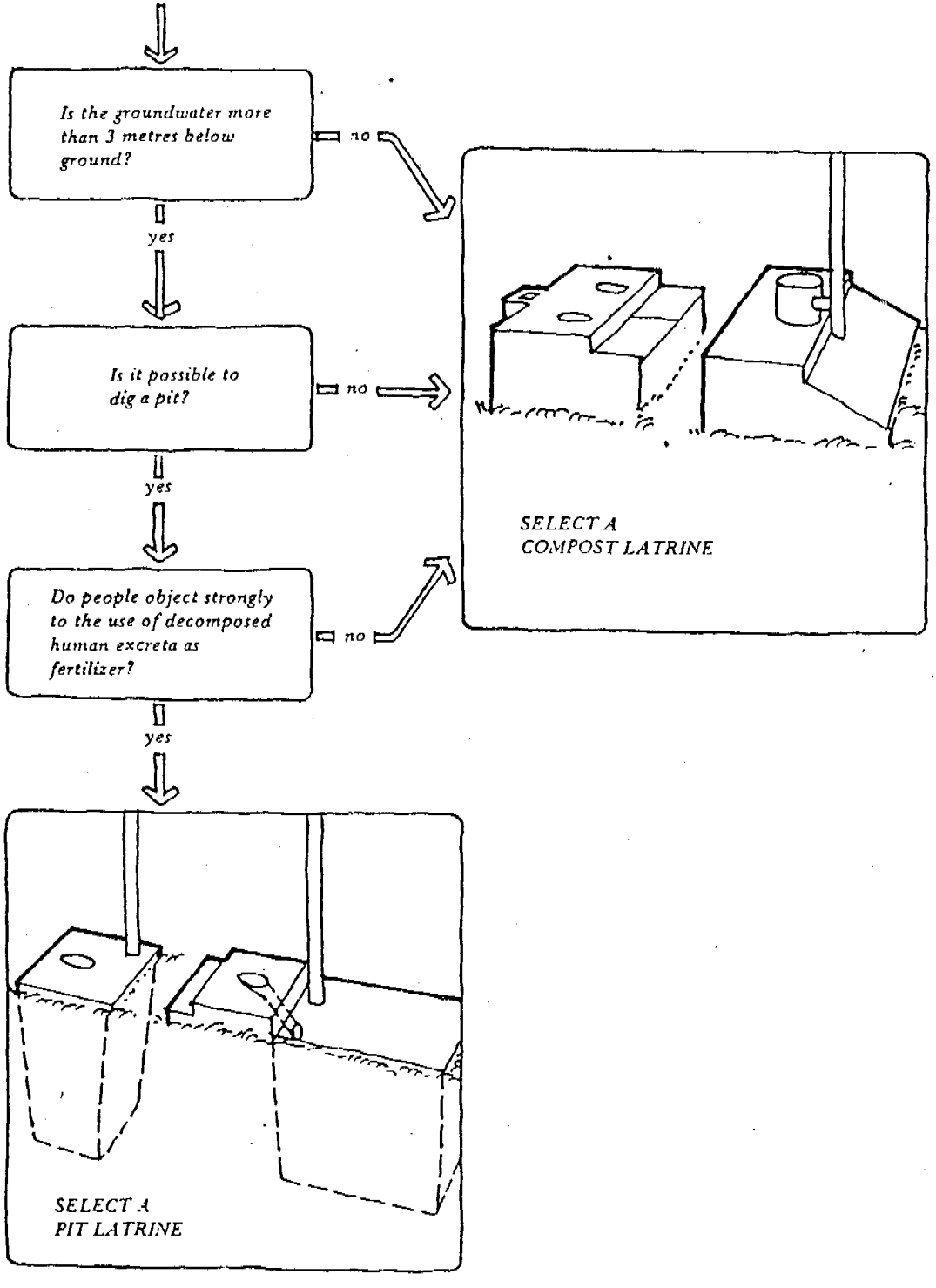
Principle	*Rationale*	*Gender aspects*
Demand-responsive projects; demand management	Governments that provide free services cannot maintain them. Users are better off with a service that satisfies them *and* is *affordable and* does not deplete water resources. Demands on amounts of freshwater, for water supply, sanitation, agriculture, livestock, industries, etc. are manageable by price and charging policies, rationing water, reducing unaccounted for water, and public education.	Women and men have different demands for water and water-related services. A gender and class specific analysis of demands is required. Increased pricing should not reduce water consumption for cooking and hygiene. Tools of pricing and rationing miss their purpose when not compensated for by reliable and predictable services in recognition that women manage time as much as men. Campaigns to reduce water wastage need to target women and men, as either group wastes water. More attention to pollution control benefits water resources and women, who collect domestic water, deal with health and suffer from poor sanitation.
Water being an economic good	Freshwater is limited. Its transfer costs money. Its use for disposing waste causes damage, which also costs money. Those using freshwater should therefore pay. Having to pay will limit use and pollution.	In valuing freshwater, domestic and productive water uses of women are overlooked/underrated. Their rights to water and land have social and economic benefits. Water development may affect negatively the livelihood of poor women and men. Within households, men, women or both may pay charges. Charges paid by women often press harder on them as their incomes are smaller.
Holistic approach to water management	Holistic management is needed because development and management actions taken in one water resources sector have an impact on water availability, quantity and quality in other water resources sectors.	Impacts do not stop at the household level, but affect members of households differently, according to their sex, age and position. Different types of users can also contribute differently to overall water management.
Government roles shift from provider to enabler	Governments should not take upon themselves the full implementation of services. This is done more efficiently and effectively by those who have a direct stake (use and profit) in providing the service. Government's roles remain essential in providing the environment, monitoring achievements and controlling and preventing abuse. As enablers, governments' responsibility for capacity building becomes more important.	In enabling and monitoring governments have a particular responsibility to protect the interests of the groups that the profit-seeking sectors will not consider, such as low-income households, domestic water users and those who use water sources and water catchment areas for the first necessities of life. Women are heavily represented in these categories. Capacity building should benefit women and men equally and prepare women to represent economic and social interests overlooked in water resources development/management.
Stakeholders participation; civic partnership	A greater participation of social and economic stakeholders leads to better water management. Management should represent all interests to ensure that in given conditions and considering future impacts the best choices are made. It should be at the lowest appropriate level to ensure that decisions are supported by those who implement them.	Women's traditional roles in water resources management are underexposed and underrated. In new management systems, women are underrepresented at the levels where decisions are made that affect also their lives and livelihood. Greater participation of women in management should not lead to more work and responsibilities for women and exempt or bypass men, but equitably distribute benefits and burdens between the sexes.

SELECTING THE RIGHT LATRINE

1 Flush system or drop system?



2 Pit latrine or compost latrine?



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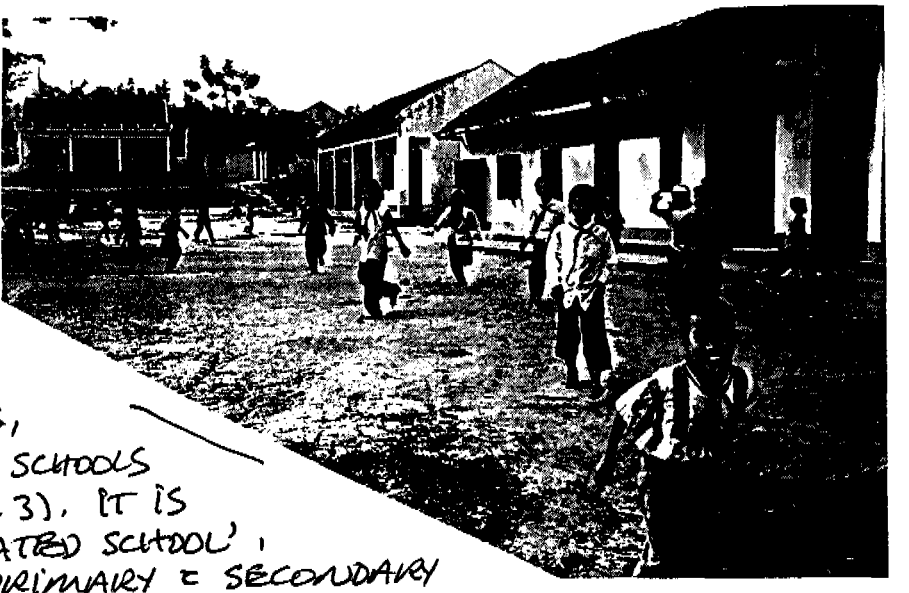
(PHOTO #1)



HUYEN TUNG,
ONE OF THE SCHOOLS
VISITED (SITE 3). IT IS
AN 'INTEGRATED SCHOOL',
WITH BOTH PRIMARY & SECONDARY
SCHOOL SHARING THE SAME COMPOUND

(PHOTO # 2)

THE EVALUATION
TEAM ON ITS
WAY TO CHI PHAI
SCHOOL (SITE 18):

DR. DUNG,
LIÊN (FRONT)
HAO &
LEO

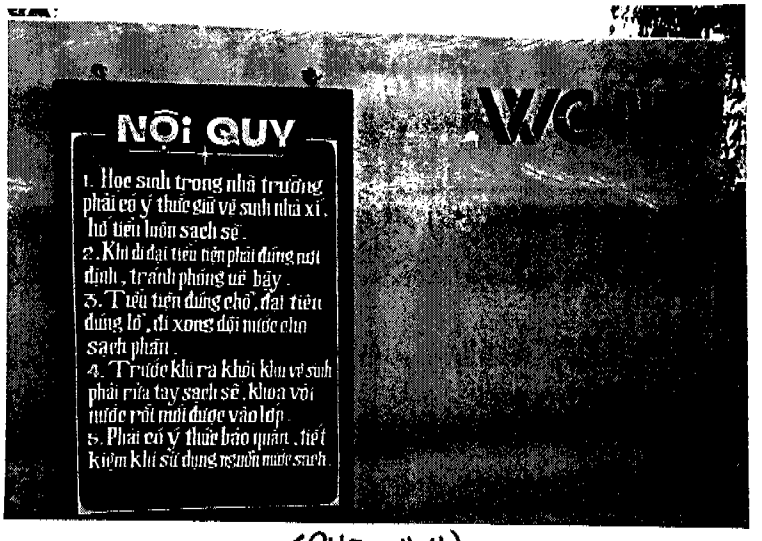
(PHOTO #3)

KY BA SCHOOL (SITE 8)

POSTERS WELL DISPLAYED & EASY TO RETRIEVE. SEVERAL WERE MADE BY THE TEACHERS & STUDENTS THEMSELVES.

TINH MINH SCHOOL (SITE 8)

INSTRUCTIONS SUCH AS THIS WERE SOMETIMES SEEN DISPLAYED ON LATRINE WALLS.



(PHOTO #4)

(PHOTO #5)

HOA TIEN SCHOOL (SITE 11)

A SURPRISINGLY WELL EQUIPPED LIBRARY IN A SMALL RURAL SCHOOL.

(PHOTO # 6)

CAM NHUONG SCHOOL (SITE 9)

H&D DISCUSSING HEALTH EDUCATION WITH A STUDENT. DISCUSSIONS SUCH AS THIS WERE HELD AT ALL SCHOOLS VISITED.

PHU XUYEN SCHOOL (SITE 4)

WATER BOTTLES USED BY STUDENTS — TO CARRY WATER FROM HOME.

(PHOTO #7)

(PHOTO #8)

HOA TIEN SCHOOL (SITE 11)

WATER FILTERS WERE SEEN AT ONLY A FEW OF THE SCHOOLS VISITED. THE PRACTICE APPEARS TO BE THAT WHEN WATER IS FILTERED IT IS NOT ALSO BOILED & VICE-VERSA.

(PHOTO # 9)

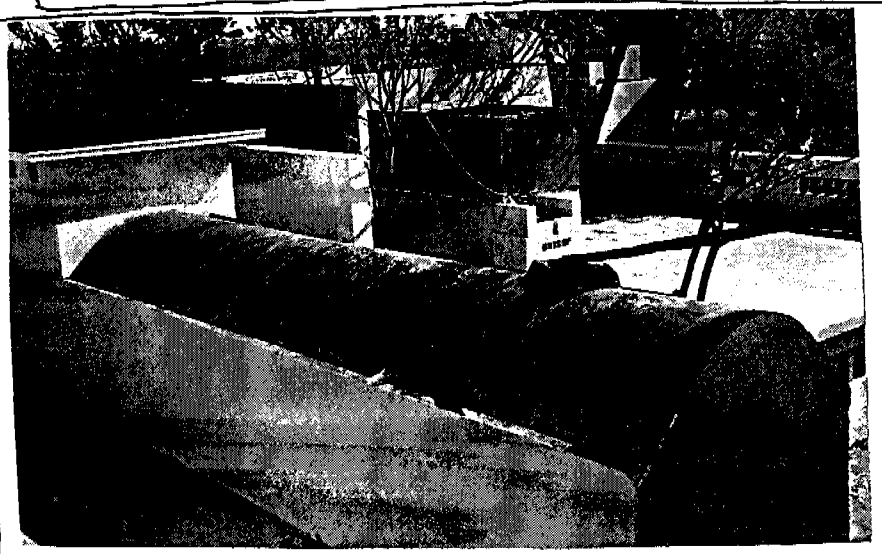
LOC HA SCHOOL (SITE 8)

A WELL-RESERVOIR CONNECTED TO THE TOWN'S WATER MAINS. AN AUTOMATIC VALVE CONTROLS THE WATER LEVEL. METAL LOCKABLE COVER. VERY STURDY & CLEAN.

CHIENG COI SCHOOL (SITE 1)

THE SSHEP INSTALLED WELL NEAR THE LATRINE. IT IS NO LONGER IN USE & THE SCHOOL AND LATRINE FACE SEVERE WATER SHORTAGES.

(PHOTO #10)



(PHOTO #11)

THANH PHU SCHOOL (SITE 6)

RAINWATER STORAGE TANK WITH THE LATRINE COMPLEX IN THE BACKGROUND. THIS IS THE ONLY SCHOOL VISITED WHERE SPECIAL EFFORTS WERE MADE TO INCLUDE RAIN WATER HARVESTING

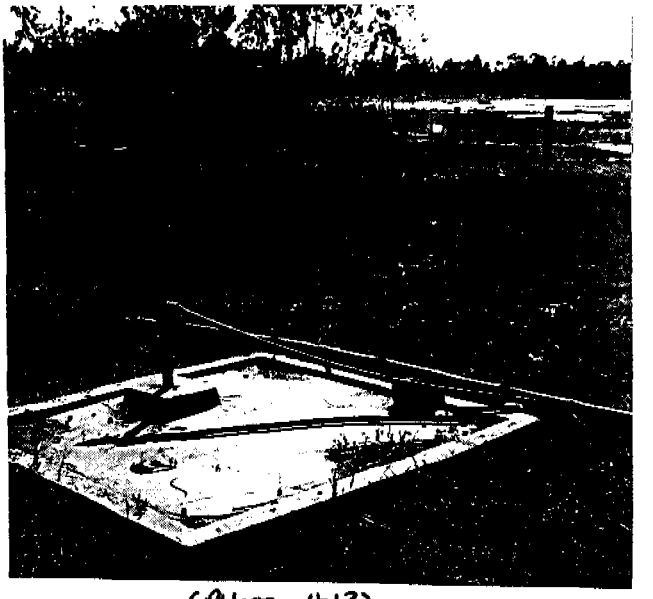
(PHOTO #12)

HUYEN TUNG SCHOOL
(SITE 3)

WELL LOCATED NEAR THE SCHOOL, EQUIPPED WITH A LOCALLY MADE PUMP WHICH COSTS ABOUT Đ 50,000/UNIT.

HOA TIEN SCHOOL
(SITE 11)

A UNICEF INSTALLED TUBEWELL WHICH USED TO PROVIDE WATER TO BOTH LATRINE (BACKGROUND) & CLINIC (RIGHT). A FENCE NOW DIVIDES THE PROPERTY & THE WELL IS NO LONGER ACCESSIBLE BY THE SCHOOL.



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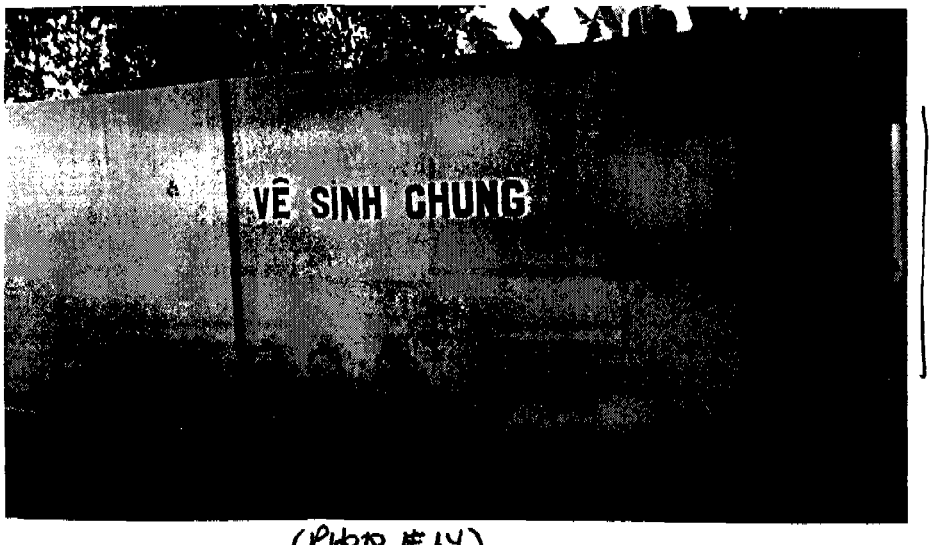
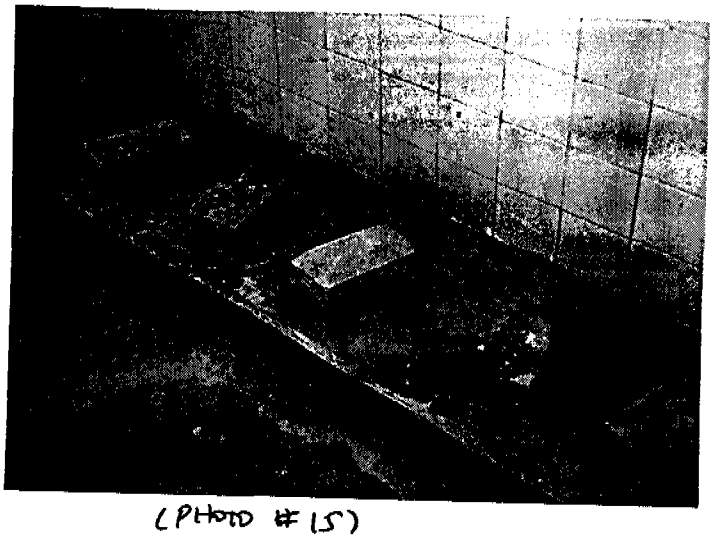


(PHOTO #14)

CHI PHAI SCHOOL (SITE 18)

A VERY SOLIDLY BUILT LATRINE UNIT WITH SIX TAPS FOR HAND WASHING.



(PHOTO # 15)

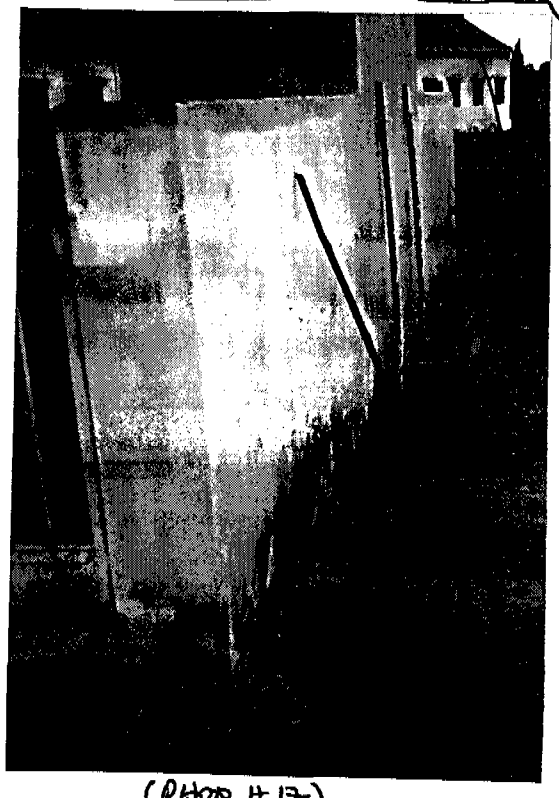
HUYEN TUNG SCHOOL
(SITE 3)

A WELL BUILT URINAL AREA FOR GIRLS, WITH CERAMIC TILES ON THE WALLS. UNFORTUNATELY THE SCHOOL LACKS A SOURCE OF WATER & THE LATRINE IS NOT IN REGULAR USE.

CHIENG COI SCHOOL
(SITE 1)

WELL-BUILT TOILET AND BOYS' URINAL. LACK OF WATER AT THE SCHOOL PREVENTS THE LATRINE'S REGULAR USE.

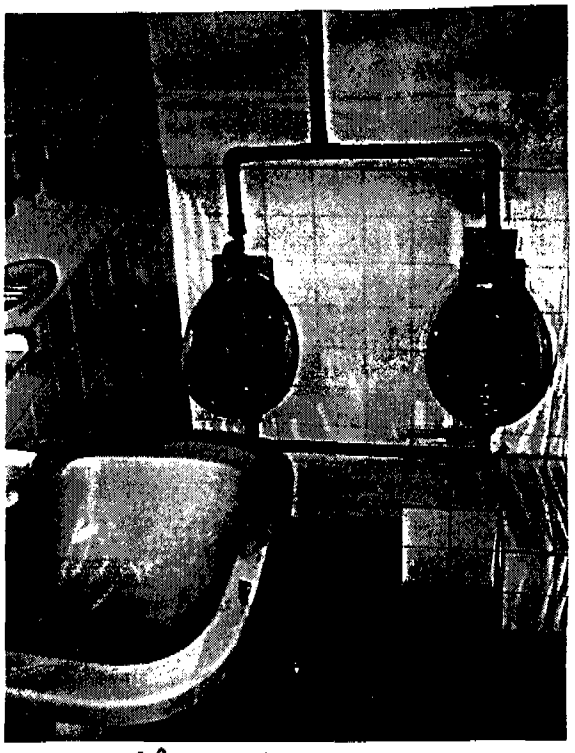
(PHOTO # 16)



(PHOTO # 17)

TRAN MINH SCHOOL
(SITE 12)

URINE FROM THE LATRINE DRAINS INTO BRICK LINED PITS FROM WHICH IT QUICKLY INFILTRATES INTO THE SANDY SOIL.



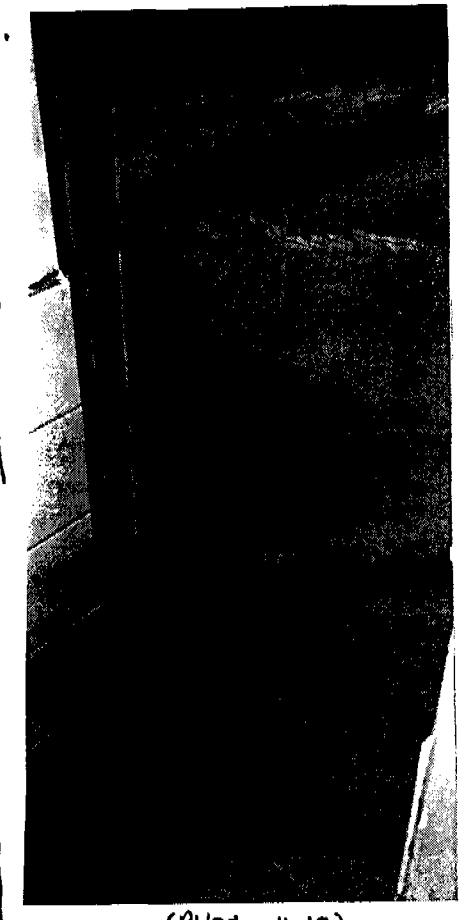
(PHOTO #18)

THOI HIEP SCHOOL (SITE 16)

A BATHROOM AND TOILET AT THE SCHOOL'S MAIN CAMPUS (NOT ASSISTED BY SSHEP). THIS UNIT IS FOR USE BY TEACHERS & STAFF. BUILT ENTIRELY WITH LOCAL RESOURCES. WELL BUILT & CLEAN.

KY BA SCHOOL (SITE 7)

PRIMARY SCHOOL LATRINE WITH VALVE-CONTROLLED FLUSH PIPE. HIGH PRESSURE WATER FROM TANKS ON ROOF.



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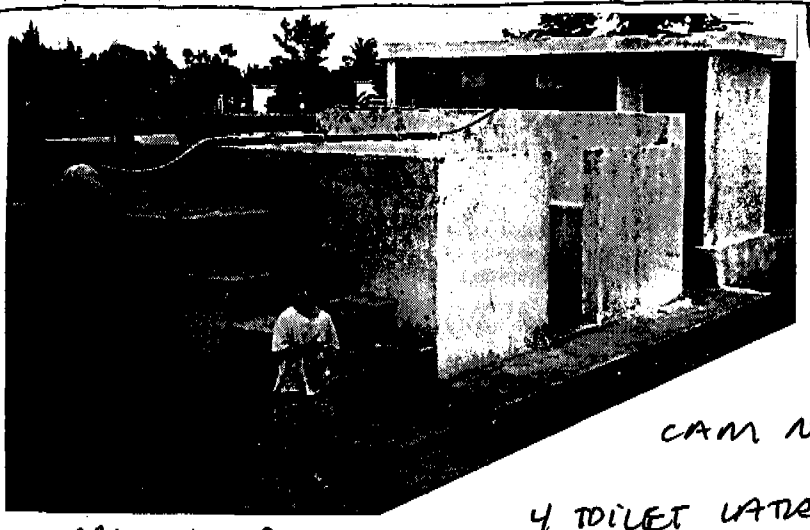


(PHOTO # 20)

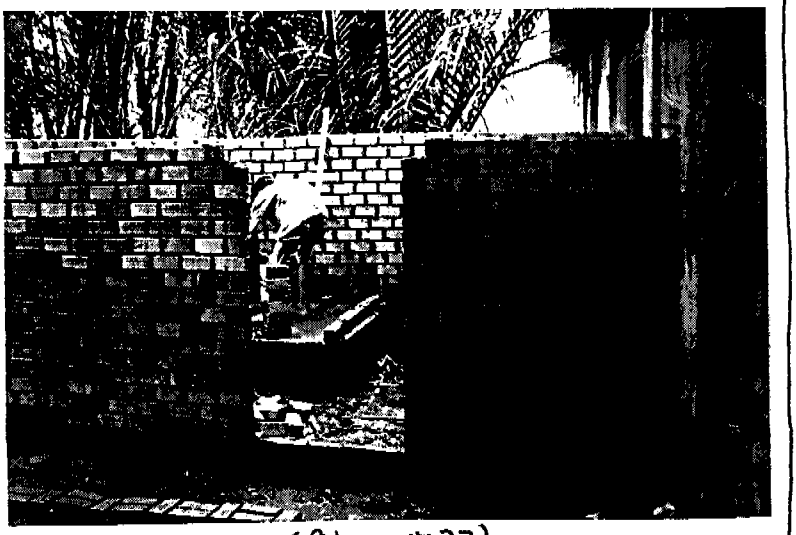
CAM NHONG SCHOOL (SITE 9)

4 TOILET LATRINE UNIT WITH URINAL + WELL. THE WELL IS EQUIPPED WITH A HANDPUMP AND, PERHAPS UNNECESSARILY, WITH AN ELECTRIC PUMP.

(PHOTO #21)

TINH NINH SCHOOL (SITE 12)

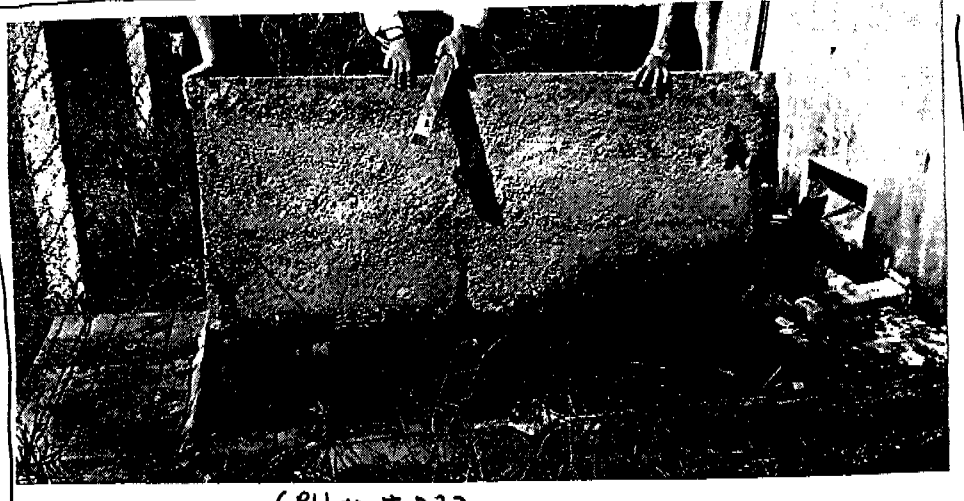
AN EXAMPLE OF A WELL BUILT TOILET. THE WATER SOURCE IS A DUG WELL 30 METRES AWAY.



(PHOTO #22)

TAN DINH SCHOOL (SITE 19)

LATRINE BEING BUILT IN A VERY CRAMPED AREA. THE SEPTIC TANK IS BEING INSTALLED DIRECTLY UNDER THE BUILDING ITSELF.

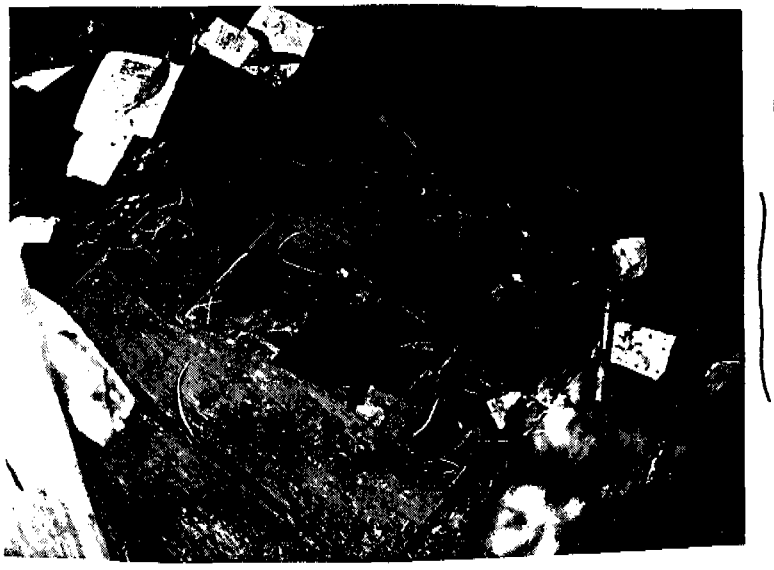


(PHOTO #23)

THE USED TOILET PAPER CHUTE CAN BE SEEN ON THE RIGHT.

HOA TIEN SCHOOL (SITE 11)

THE INNER STRUCTURE OF THE SEPTIC TANK. THE TANK WAS FULL OF WATER MOSTLY & SHOWED LITTLE SIGN OF DECOMPOSING FAECAL MATTER, AS WOULD NORMALLY BE EXPECTED.



(PHOTO #24)

NGUYEN HUE SCHOOL (SITE 14)

A DRY PIT LATRINE 10 METRES FROM THE SSHEP POUR-FLUSH LATRINE. IT APPEARED TO BE IN REGULAR USE BY STUDENTS.

DONG NAI SCHOOL (SITE 15).

A "CAT-PIT" LATRINE AT A HOUSEHOLD NEAR THE SCHOOL, REPORTEDLY ASSISTED BY THE UNICEF SUPPORTED REVOLVING FUND. THE STRUCTURE IS UNSANITARY, AND THE GROUND AROUND THE SQUAT-PLATE WAS SUBSIDING.

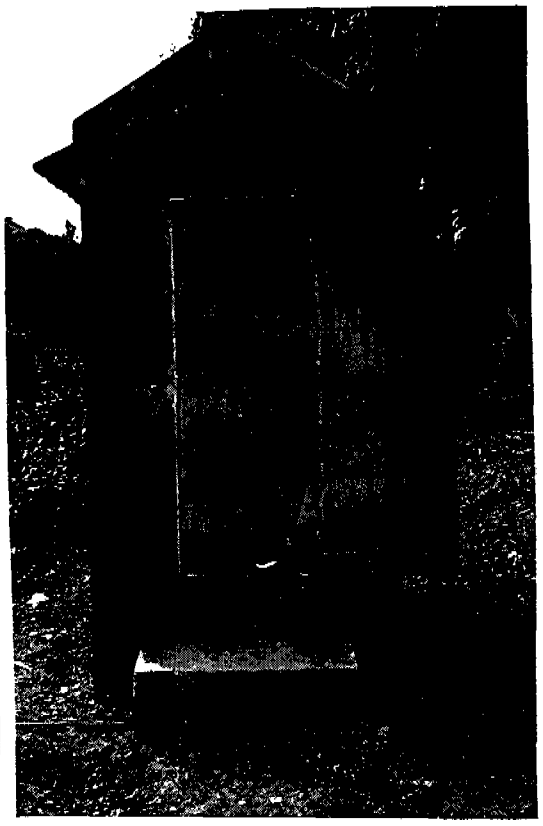
(PHOTO #25)

(PHOTO #26)

DONG NAI SCHOOL (SITE 15).

A PIT LATRINE AT THE SCHOOL, NEAR THE SSHEP LATRINE.* IT IS UNSAFE, AS THE EARTH AROUND THE STRUCTURE WAS CAVING IN.

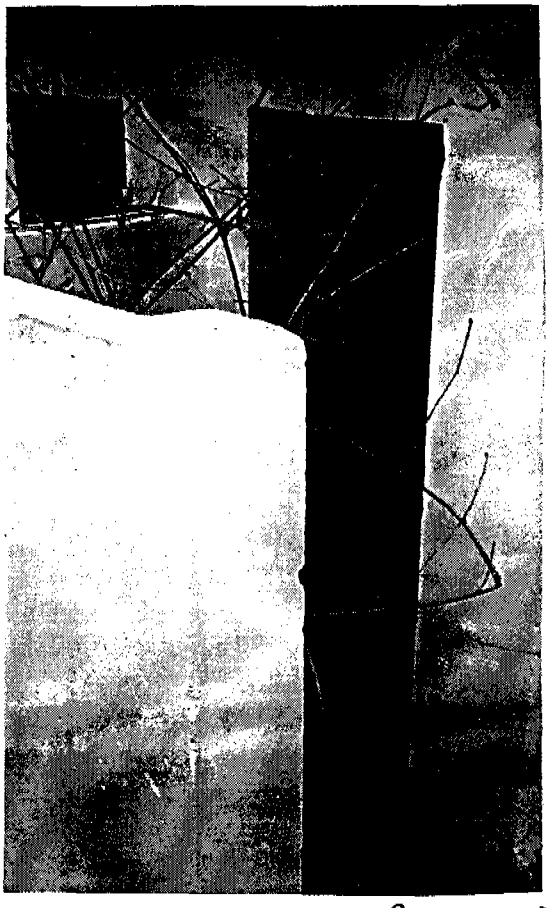
(* PHOTO #29)



(PHOTO #27)

HUYEN TUNG SCHOOL (SITE 3)

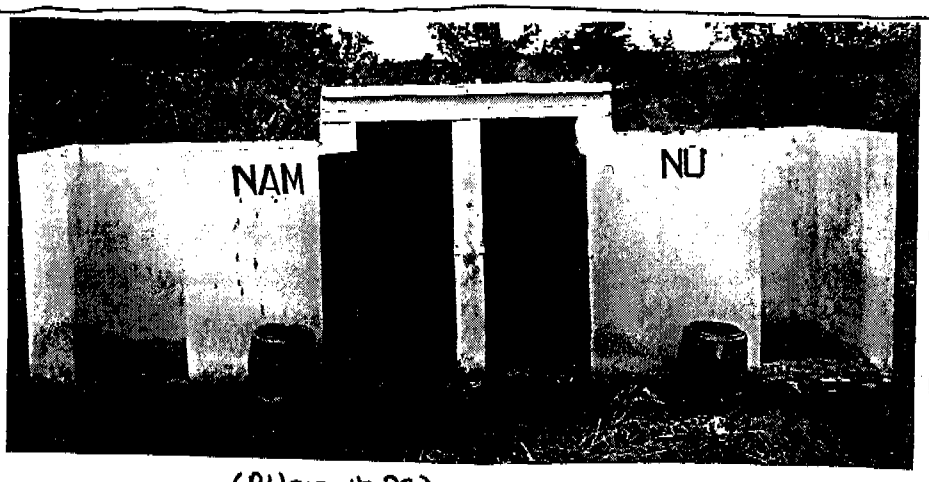
THE DRY PIT LATRINE BUILT WITH SSHEP ASSISTANCE, IN ADDITION TO THE FOUR FLUSH SSHEP LATRINE WHICH IS IN ANOTHER PART OF THE COMPOUND. THIS UNIT WAS IN REGULAR USE.



(PHOTO #28)

PHU XUYEN SCHOOL (SITE 4).

A 2-TOILET PIT LATRINE REPORTEDLY BUILT WITH UNICEF ASSISTANCE, BEFORE THE INSTALLATION OF THE NEARBY SSHEP FOUR-FLUSH LATRINE. THIS STRUCTURE IS TO BE DEMOLISHED.



(PHOTO #29)

DONG NAI SCHOOL (SITE # 15)

SSHEP ASSISTED DRY PIT LATRINE WITH URINALS & WATER JARS.

(PHOTO #30)

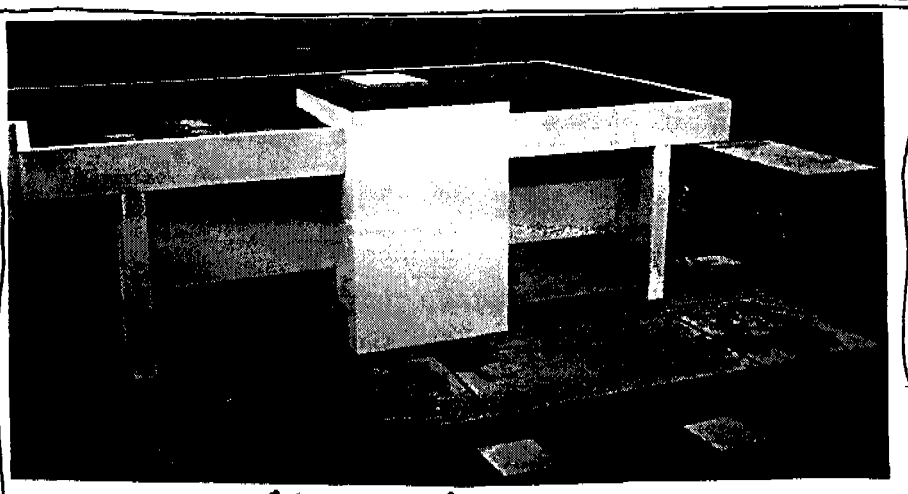
HUYEN TUNG SCHOOL (SITE 3)

A URINAL IN THE BACKGROUND AND AN AREA (FOREGROUND) WHERE RUBBISH IS INDISCRIMINATELY DISPOSED OF.

(PHOTO #31)

CHI PHAI SCHOOL (SITE 18).

THE LATRINE UNIT ITSELF IS VERY WELL BUILT BUT RUBBISH IS INADEQUATELY DISPOSED OF. URINE & SEPTIC TANK EFFLUENT FLOW INTO THE CANAL THROUGH OPEN PVC PIPES.



(PHOTO #32)

CAM TUYEN SCHOOL (SITE 10).

THE LATRINE UNIT FOR THE NEW JAPANESE ODA PRIMARY SCHOOL, WITH INFILTRATION TANK IN THE RIGHT BACKGROUND. THE LATRINE UNIT WAS SAID TO HAVE COST DONG 100 MILLION.