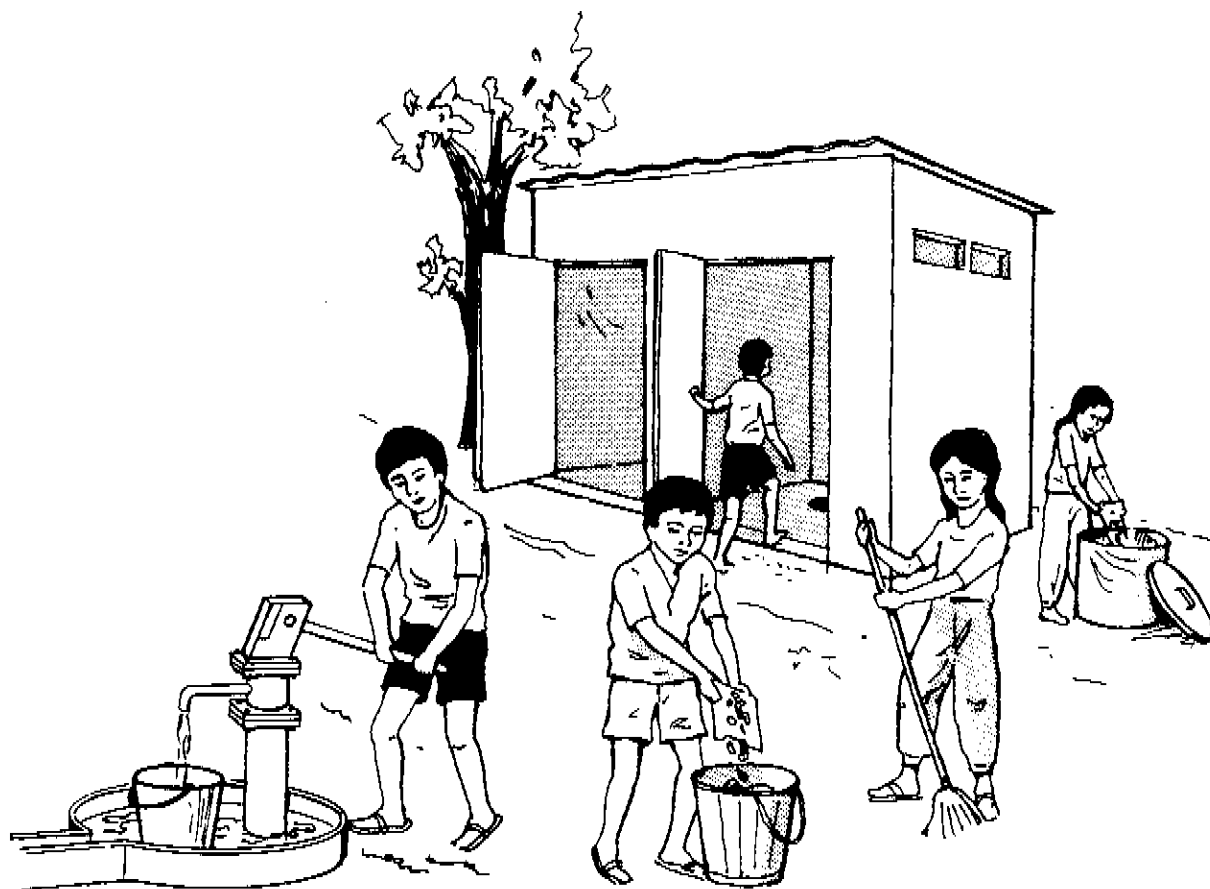


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HYGIENE EDUCATION AND ENVIRONMENTAL SANITATION IN SCHOOLS IN VIET NAM

*The Report of a Project Identification
and Formulation Workshop*

Hanoi, 8-10 June 1993



WORLD HEALTH ORGANIZATION

Regional Office for Western Pacific (WPRO)
Environmental Health Centre (EHC), Kuala Lumpur

Rural Environmental Health Unit (REH)
Office of Operational Support in Environmental Health (EOS)
Geneva

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Summary

The Government of Viet Nam has placed education at the forefront of its development strategy, and has adopted for this sector a universal access goal which is realistic and within reach, as nearly all children go to primary school. Because of the prevalence of diseases related to poor hygiene, due mostly to ignorance of health hazards and inadequate water supply and sanitation, health education has since 1990 become a matter of great concern, both to the Ministry of Health and to the Ministry of Education.

In order to foster the development of hygiene education in schools, a project identification and formulation workshop was organized in Hanoi, from 8 to 10 June 1993 by the Ministry of Health, Department of Hygiene and Environment, with support from WHO (WPRO/EHC and REH) in the framework of a WHO hygiene education programme financed by the Swedish government. The objectives of the workshop were to review the present situation of water supply, sanitation and health education in schools, at national, regional and local levels, and to identify and formulate a project designed to increase the resources allocated to hygiene education and environmental sanitation.

The presentations covered the Vietnamese situation, on which a special report had been prepared by the Government, the UNICEF Programme in Viet Nam, WHO activities in hygiene education, water supply and sanitation, and EAST-executed projects in other countries. In final plenary sessions, project funding mechanisms were explained and a project was identified and formulated for the province of Bac Thai to provide hygiene education and environmental sanitation improvements for schools.

*The workshop was supported by the Swedish International Development Authority.
This report was prepared by Mr Louis Laugeri (WHO, Geneva).*

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The Government of Viet Nam has placed education at the forefront of its development strategy, and has adopted for this sector a universal access goal which is realistic and within reach, as nearly all children go to primary school. Because of the prevalence of diseases related to poor hygiene, due mostly to ignorance of health hazards and inadequate water supply and sanitation, health education has since 1990 become a matter of great concern, both to the Ministry of Health and to the Ministry of Education. They have undertaken to collaborate more closely, starting with the development of educational materials, the collection of information on water supply and sanitation facilities in schools and hygiene behaviour of pupils, and direct cooperation in the framework of a large UNICEF-supported project designed to extend water supply and sanitation to 50% of all primary schools in the 1990-1995 period.

In order to foster the development of hygiene education in schools, a project identification and formulation workshop was held in Hanoi, from 8 to 10 June 1993, to review the present situation of water supply, sanitation and health education in schools, at national, regional and local levels, and to identify and formulate a project designed to increase the resources allocated to hygiene education and environmental sanitation. The short-term objective of this project is to implement comprehensive public health approaches in a limited number of schools of one or two districts of one province, for subsequent extension and replication in other districts and other provinces.

The workshop was organized by the Ministry of Health, Department of Hygiene and Environment, with support from WHO (WPRO/EHC and REH) in the framework of a WHO hygiene education programme financed by the Swedish government. The Ministries of Health and Education, the Health and Education Services of six provinces (Hai Hung, Hai Phong, Hanoi, Ha Tinh, Nam Ha and Thanh Hoa), UNICEF and the French non-governmental organization (NGO) Eau, Agriculture et Santé en Milieu Tropical (EAST) participated in the meeting.

The workshop was opened by Professor Le Ngoc Trong, Ph. D., Vice Minister of Health, and conducted essentially by Dr Hoang Dinh Hoi, Deputy Director of the Department of Hygiene and Environment. Mr B. Fisher from EHC and Mr L. Laugeri from REH/EOS, author of the present report, participated as facilitators and resource persons. Dr L. Monjour, President, EAST, presented the EAST experience and led the project formulation exercise. The list of Vietnamese participants can be found in the inside back cover, and the agenda of the meeting is in Annex I.

The presentations covered the Vietnamese situation, on which a special report had been prepared by the Government, the UNICEF Programme in Viet Nam, the project to be formulated, WHO activities in hygiene education, water supply and sanitation, and EAST-executed projects in other countries. A field trip was made to two large schools and surrounding rural communities near Hanoi. In final plenary sessions, project funding mechanisms were explained and a project was identified and formulated for submission to the Syndicat des Eaux d'Ile de France (SEDIF), the European Community and other potential funding agencies.

The findings and recommendations of the following sections (sector brief, project identification, project formulation) are abstracts from the workshop discussions, from the report presented in plenary sessions by the Ministry of Health, and from a UNDP/World Bank Water Supply and Sanitation Sector Study of Viet Nam (1990). This sector study contains essential information which in some cases is quoted *in extenso*. The general data and projections have their sources in the UNDP Human Development Report 1993 and in a recent WHO desk study report entitled "WHO in Viet Nam" (draft limited document ICO/WCR/33.1, January 1993). The costing information has been provided by the Ministry of Health, UNICEF and Mr B. Fisher from EHC.

The report prepared by the Ministry of Health includes data on the country, the education sector and the water supply and sanitation sector. It describes the strategy of the Ministry of Health in hygiene education and health care for pupils, and the cooperation between the Ministry of Health and the Ministry of Education in the development of hygiene education. It gives the results of surveys on hygiene behaviour among children and describes the school environment in terms of water supply and excreta disposal facilities, as well as the progress made with support from UNICEF in improving the environmental health conditions in a large number of schools. Finally, a list of major issues and development constraints is provided, and a project is proposed. The preliminary draft project description contains an identification of the problems, a statement of objectives, and a list of activities to be undertaken and resources required. A description of the institutional framework for the project is also provided, together with general guidelines for evaluation.

On the basis of criteria proposed by the Ministries of Health and Education, EAST, UNICEF and WHO, the province of Bac Thai was tentatively identified as the site of an initial project, which would cover from 30 to 40 establishments, including primary and secondary schools and schools in the plains and in the less privileged mountainous areas. The project would provide hygiene education and environmental sanitation improvements. The full project formulation report will be submitted to potential funding agencies during the last quarter of 1993, and it is hoped that project activities can start in 1994.

2.1 The country

Viet Nam has a population of 70 million inhabitants growing at 2% per year and an area of 330 000 km². Population densities are high everywhere except in the mountains, which represent one third of the total area and are sparsely populated and poor. While the annual population growth rate is nearly three times higher in urban areas, 78% of the Vietnamese people still live in rural areas. These are therefore rather densely populated, especially in the northern and southern alluvial plains and along the 3 260 km coastline.

Viet Nam has a tropical climate with abundant rainfalls but with marked wet and dry seasons. Surface water resources are generally sufficient to cover both irrigation and water supply needs; a major problem with these waters is their high turbidity during the wet season. The potential of groundwater resources is considerable, but unevenly distributed. Shallow and deep wells can be widely utilized in rural areas; problems of high iron content are sometimes encountered, as well as sea water intrusion in coastal areas.

The UNDP Human Development Report 1993 does not rank Viet Nam among the least-developed countries, although it is listed among those which have low human development indices and per capita GNPs of less than US\$ 500 per year. Since 1986, the country has adopted an economic reform policy known as "doi moi" characterized by the return to household-based farming, the removal of restrictions on private sector activities and the decentralization of decision making to managers of state-owned enterprises. Viet Nam is therefore currently in a state of transition from a centrally-planned socialist economy to a socially-oriented market economy.

Similarly, the public health situation of Viet Nam does not reflect one specific type of economic development and disease pattern, but rather two main types, that of developing countries characterized by vectorborne infectious diseases and malnutrition, and that of more developed countries, which is marked by an increasing incidence of cardio-vascular and cancer-related conditions. Malaria has by far the highest morbidity and mortality rates, followed by respiratory infections; diarrhoeal diseases are the fifth cause of mortality and morbidity, although the National Control Programme is considered as a "model" programme. Acute respiratory diseases and diarrhoeal diseases are closely associated with malnutrition and low birth weight, and play a dominant role in infant mortality.

Although the average level of infant mortality has been reported to be very high in some provinces, the official national average was 39 per thousand live births in 1991, as opposed to 147 in 1966 and to 1991 averages of 64 for the entire world and 71 for developing countries alone. Life expectancy at birth is also a favourable indicator, at the level of 62.7 years in 1991, as compared to 51.0 for the least developed countries and 64.7 for the entire world.

Here again, the country's health status is by far better than its per capita income would suggest. Truly, personal hygiene at the family level is quite well developed, and people are aware of the relationship between water, excreta and health. 97% of the population have access to health services and the daily calorie supply is 103% of requirements. However, fresh excreta is widely used in agriculture in the North, where intestinal parasite infestation rates can be higher than 95%, diarrhoeal diseases (salmonellosis, amoebiasis, shigellosis, cholera) are prevalent everywhere, 42% of all children under five are underweight, and there is a general lack of environmental sanitation facilities, especially safe water supply and sanitation, both in urban and rural areas. The proportions of population at high health risk are probably much higher than suggested by public health reports. At all levels, the staff of the Ministry of Health are fully conscious of this situation.

2.2 Water supply and sanitation

The service levels of the water supply and sanitation sector are low in both urban and rural areas. Less than half of the urban population has a drinking water supply system. Less than one fourth of all agglomerations of more than 5 000 inhabitants have piped water supplies. Less than one fourth of all urban dwellers are served by waterborne sewerage systems; in the large cities about one third of the population is served by septic tanks; the remainder are served by various types of latrines. Stormwater drainage is generally difficult, costly and unsatisfactory.

The rural water supply and sanitation subsector has had the benefit of 40 years of massive health campaigns, with the government providing free cement and technical advice for the construction of wells, bathrooms and latrines. About one third of the rural population have water supplies, often of poor quality; probably only 10% have access to safe and adequate water supplies; only 10% have hygienic latrines. The development of composting is slow, the health education campaigns are not always effective, and the lack of protection of agricultural workers is a major concern.

The main institutions involved in water supply and sanitation are the Ministry of Construction, especially for urban water supply and sanitation, the Ministry of Labour and Social Welfare which coordinates the implementation of rural water supply projects (the Ministry of Education is involved for schools), and the Ministry of Health which handles rural sanitation and quality control of drinking water in urban and rural areas. The State Planning Committee plays an important role in determining sector priorities and selecting projects for funding.

The provincial and city governments are responsible for operating and maintaining local water supply and sanitation systems. The sector generally suffers from lack of a lead institution and extreme fragmentation; in rural water supply, the division of responsibilities between provincial and district level authorities and water users is not clearly defined, and support structures for operation and maintenance remain undeveloped.

2.3 Education

Viet Nam is not in the lowest third of all countries in terms of human development index. Despite poor scores in access to basic services, some of the public health indicators are favourable and those indicators which are related to education and information generally rank high in comparison to many other developing countries. The adult literacy rate is 87.6 per cent, with 4.6 mean years of schooling. The combined primary/secondary school enrolment ratio is 69%. It is generally estimated that nearly all Vietnamese adults have been to primary schools, and 57% of grade one entrants have completed primary level.

In its 53 provinces, 500 districts and 10 000 communes, Viet Nam has a total number of 38 000 schools, including 8 000 kindergarten, 15 000 primary schools, 10 000 secondary schools and 5 000 higher-level schools. There are 800 000 teachers, 1 000 000 pre-school pupils and 16 million primary and secondary pupils. More than 90% of all pupils receive primary education, which is compulsory between the ages of 6 and 11. The number of primary pupils per teacher is 34, which is the average for all developing countries.

Recent statistics indicate a higher number of radios, television sets, newspapers, telephone sets and cinemas than is normally available in countries in the same income range. Women, who represent a large proportion of the labour force, are at a disadvantage with respect to years of schooling; by contrast, the large majority of the teachers in all regions are women.

The Ministry of Health, through its Department of Hygiene and Environment, cooperates with the Ministry of Education and Training in the field of school hygiene education. The National Institute of Hygiene and Epidemiology is also involved at central level. The same type of cooperation exists at provincial

level (between the Health services and the Education and Training services) at district level (between the Health brigades and the Education offices) and at the level of the communes. The organization chart designed by the Department of Hygiene and Environment of the Ministry of Health as a framework for future cooperation includes kindergartens and primary schools at communal level, with support from the Commune Health Center, while secondary schools are managed from the district level, pedagogical schools from the provincial level, and professional schools from the central level.

Until 1990, health education was not taught in primary schools. During 1990 and the following years, the Ministries of Health and Education cooperated in the development and implementation of educational material with support from UNICEF. A series of booklets entitled "Health Education for Pupils of Grades 1 to 5 (primary pupils)" was produced and is still in use. It includes books for pupils, teachers and student teachers as well as a teachers' reference book. It contains documentation on personal hygiene, food hygiene, hygiene at public places, occupational hygiene and disease control with pictures, illustrated models and leaflets. This material has been used in several provinces on a pilot basis, and subsequently revised and reprinted.

At this stage health education is not formally included in the disciplines taught in primary schools; the time allowed for it is one hour per week, but there is only one session per year on water supply and sanitation. In kindergarten and free school sections, health education books and leaflets have been developed for teachers. Finally, educational documents on water and environmental sanitation have been printed for both communes and schools by the Department of Hygiene and Environment of the Ministry of Health.

2.4 Cooperation with UNICEF

Since 1981, UNICEF has played a very important role in helping the Government of Viet Nam to achieve its objective of universal access to drinking water supply and sanitation. Rural water supply and sanitation projects developed from 3 pilot provinces in the South to cover 30 provinces by 1990. The water supply component was implemented by the Ministry of Labour and the sanitation component by the Ministry of Health.

The strategy was based on integration of all water supply and sanitation activities in the overall context of primary health care, capacity building for national institutions to be able to monitor the projects, mobilization of the participation of the beneficiaries and involvement of women as principal agents and users. Through the National Health and Education Services, the education component of the programme was integrated into the primary health care system in order to reach the entire population. Some financial participation was obtained from the beneficiaries, especially with respect to the water supply component of projects.

The construction cost per well amounted to US\$ 162 (50 meters depth) to US\$ 242 (100 meters depth), including a UNICEF contribution of about two-thirds (casing and screens, pipes, handpumps, cement and tools). The maintenance cost per well was estimated at US\$ 9 per year including handpump replacement every 7 years and the redevelopment of the borehole every 10 years. The investment cost for a well serving 15 families of 6 people amounted to about US\$ 12 per family, and the operational cost was less than US\$ 1 per family per year.

The project has trained more than 40 000 workers, drillers and technical staff, and by 1990 20 000 well-caretakers were qualified for daily maintenance.

Maintenance activities are carried out at the provincial, district and commune levels. In the communes, the People's Committee and the Union of Women appoint a caretaker for each tubewell, and provide spare parts as well as tools for repair. The district assumes a control function through field visits and the provision of technical assistance for major repairs, and provides the commune with spare parts free of charge during the initial operating period. At provincial level, the provincial management committee of the project is responsible to supply spare parts to the districts.

The double-vault composting latrine has been implemented throughout the country between 1955 and 1985. To ensure good sanitary conditions, it must be airtight and dry, and a minimum composting time of over three months is required. As these conditions are rarely met, this facility which normally should be hygienic can become a factor for the transmission of parasites, bacteria and viruses which lead to excreta related diseases such as taeniasis, hookworm infections, ascariasis, gastro-enteritis and cholera. In Northern Viet Nam in 1985, a survey showed that more than 95% of the children under the age of 15 were infected with ascariasis and 15% with hookworm; in the Southern region, the rates were much lower (35% and 7% respectively).

The Ministry of Health and UNICEF have started their sanitation programme with knowledge, attitudes and practice (KAP) surveys, health education training courses and intestinal parasite control. The improvement of environmental sanitation has been ensured by the population, with the programme supplying cement, iron bars and means of transportation. The twin indirect latrine demonstrated by the project has been accepted by the rural population, and a total of 15 000 units had been constructed in 150 pilot communes by 1990. However, the high cost hampers replication on a wider scale. UNICEF contribution amounts to US\$ 15 per latrine, while the labour and local materials to be contributed by the beneficiaries are estimated to amount to US\$ 15 to 20 per latrine.

For the 1990-1995 period, UNICEF has planned to provide 50% of all primary schools with facilities including 1 bored well with handpump, slow iron filtration if necessary, from 4 to 6 septic latrines, urinals and washing latrines. The programme can spend up to US\$ 200 000 per year, and the estimated expenditure is US\$ 150 per school, of which one-third were originally to be contributed by the community; this proportion has now been increasing to one half. The number of schools provided with adequate facilities is currently reported to be about 1000. However, rather than the slow progress of construction, the main concern of UNICEF seems to be the frequent lack of adequate operation and maintenance, as was reported by the representative of UNICEF at the workshop (Annex II).

According to the report presented at the workshop by the Ministry of Health on water supply, sanitation and hygiene education in Vietnamese schools, these three essential elements of environmental health should be closely associated in the identification of a comprehensive project designed to provide effective improvements to the hygiene and health of pupils.

The standard value adopted in Viet Nam for drinking water is one liter of boiled water for three pupils in summer or for ten pupils in winter; less than 10% of urban schools meet this standard, although 60 to 70% of these establishments have drinking water. In rural areas, in summer, less than half of all schools have drinking water, but quantities are insufficient everywhere, and in winter nearly all schools are deprived of drinking water. In the mountainous areas, more than 90% of all schools have no drinking water at all.

As to washing water, the standard is 4 to 5 liters per pupil, 10 liters for half board pupils and 40 liters for full board pupils. The number of schools which have washing water in such quantities is very small.

For day schools, the standard values are 1 latrine for 100 to 200 pupils, while for full board pupils the ratio is one latrine to 50 pupils. In 1991-1992, 30% of the schools had no latrines; 80% of the other schools did not have enough latrines and 75% had latrines in bad hygienic conditions. These figures applied to both urban and rural areas.

A survey conducted between 1990 and 1992 on the behaviour of primary and secondary pupils with respect to water supply and sanitation gave the following results:

- in cities, 5 to 10% of the children washed their hands before eating; this percentage dropped to 0 to 2% in rural areas; the practice of washing hands before eating was non-existent in the mountainous areas and the plateaux;
- in cities, 10 to 20% of all pupils washed hands after defecation, while this percentage dropped to 0 to 5% in rural areas and 0 to 2% in the highlands;
- in cities, 20 to 30% of all pupils drank water which had not been boiled; the percentage was 60 to 70% in rural areas, and 90 to 100% in the highlands;
- in cities, 2 to 5% of all pupils defecated outside latrines; the percentage was 30 to 50% in rural areas and from 90 to 100% in the highlands.

According to this study, the utilization of the facilities was insufficient in the cities, and in the rural areas both the number of facilities and their utilization were insufficient; the situation was particularly serious in the mountainous areas and the plateaux. Priority criteria in project identification should take these elements into consideration.

In the report presented at the workshop, the Ministry of Health made the following observations:

- water supply and sanitation facilities have been introduced in schools by a large variety of institutions, without much effectiveness in terms of changes in hygienic practices of the pupils;
- the country wide average of schools having safe water of good quality and in sufficient quantity is less than 25%, and the conditions are worst in secondary schools and in rural kindergartens which do not benefit from the support of UNICEF;

- less than 30% of all schools have latrines of good quality and in sufficient quantity; again the worst conditions are encountered in secondary schools and kindergarten, for the same reason; there are fewer high-level secondary schools, and they get more attention from the services of the Ministry of Education;
- the cost effectiveness of water supply and sanitation in terms of hygiene improvements and disease reduction, and the relationship between water, sanitation and way of life, in the school, the family and the community, have not been adequately studied;
- while environmental sanitation improvements for schools are well accepted by both teachers and communities, communication and education activities have not been sufficient to support efficiently the introduction of new facilities, the health and education agencies involved need to further strengthen their collaboration, there is a general lack of financial resources, and a specific project is needed to deal with all of these issues in an integrated and comprehensive manner.

The difficulty in identifying projects of this type is to determine whether priority should be given to pilot projects designed to test specific methods and technologies in a "pilot school" context, or to coverage projects designed to strengthen the existing installations, possibly extend them, and obtain immediate results in terms of improvements in water supply, sanitation and health education, without however bringing any significant change in approaches. The strategy adopted by EAST in other countries has been a combination of both study programmes and coverage programmes.

The approach has consisted in creating within a well defined administrative framework a momentum within a limited number of schools (however large enough to have an impact) within one or two districts, then to expand it to a whole province, and subsequently to further expand (not necessary replicate) the project to several provinces. The schools and the community constitute the basic technical environment of the project, in terms of water supply, sanitation and hygiene education. The district is important as a first referral level, although in the case of Viet Nam the Ministry of Health indicated that the provinces would constitute the basis for the creation of an administrative and technical framework.

Another criterion suggested by EAST was that the provinces to be selected should be close to the capital city of Hanoi, in order to facilitate the obtention of authorizations and the mobilization of central support. The Ministry of Health indicated that the province should have a mountainous part, however most of the projects should be in the plain where school water supply and sanitation facilities are more readily available. The province of Bac Thai was tentatively identified on the basis of these various criteria, with the city of Thai Nguyen as operational center for the project, which in its initial phase should cover from 30 to 40 schools.

4.1 Project area and scope

The province of Bac Thai has 6 500 km² and a population of 1.1 million inhabitants. The average density is 163 inhabitants per km². The province has 10 districts, and its capital is the municipality of Thai Nguyen. The project is expected to cover schools in two districts, including some pilot projects in the mountainous areas. In the plains one district has from 30 to 50 schools, and the total project area can be expected not to exceed 2500 km², at a distance of about 100 km from Hanoi.

As in the immediate vicinity of Hanoi, the revenues of the informal sector are not known with any accuracy; the net cash income for a family of five is probably about US\$ 5 per month. Many small agglomerations in the plain have a water supply and a connection to electricity. Water supply and sanitation facilities are generally inadequate in rural areas.

Although the project area is limited to 30 to 40 schools of one province, the project itself concerns the entire province and the whole country. This implies that the project will include activities designed for the dissemination of project information to other districts and other provinces. It also implies that national and provincial authorities will be represented in workshops and seminars dealing with the project, as was the case in the initial project formulation workshop.

4.2 Project objectives

The project will have the following objectives, as defined by the Ministry of Health:

- to improve water supply and sanitation in pilot schools in rural areas, and to educate the pupils with respect to the operation, utilization and benefits of these facilities, as well as health hazards related to poor hygiene;
- to contribute to the reduction of diseases related to poor hygiene and directly improve the quality of health education, thereby indirectly improving its impact on the health status of the community;
- to design and field test models which can be replicated in schools and communities of other districts and provinces;
- to address specific issues on a case by case basis, depending on the situation of the school and the community, for instance with respect to the prevalence of goiter which is high in some regions.

The Ministry of Health intends to broaden these objectives in order to place them in an overall primary health care context, an approach which is compatible with the methods followed by EAST in other countries.

Another objective of the project will be to further enhance the effectiveness of UNICEF investment in water supply and sanitation facilities, as the insufficient number of installations and their poor operation and maintenance remain the major obstacles to the development of hygiene education, its effectiveness and the obtention of health benefits for the children and for the community.

4.3 Project description

In Viet Nam rural water supply facilities rank from brick-lined communal ponds to piped gravity schemes. While rainwater collection is often used in some areas of the South, wells are the most popular methods of supply in the Northern plains, and different types of gravity schemes are used in the mountains. Villages and schools in the project area would probably have wells in the plain; some small agglomerations might have gravity supplies; despite the dry period, rainwater collection should not be excluded, especially if storage space is available and consumptions are small, as could be the case in a school.

Rural sanitation facilities include conventional pit latrines in mountainous areas, which also use combined tanks for human and animal wastes. The double-vault composting toilet is used mostly in the North, and often in unhygienic conditions. There are also bucket latrines, with re-use of fresh excreta in the fields, pour-flush toilets with leaching pits (introduced by UNICEF) and other facilities. Pour flush toilets with septic tanks are rare in rural areas.

Most equipment, machinery, construction materials and chemicals for treatment are available locally, and the sector lends itself well to the development of labour intensive projects with low foreign exchange components, which rely largely on national production and thus employ resources which would otherwise be idle, and therefore have a low economic cost. By introducing equipment which could be produced locally, UNICEF has largely contributed to improving the financial feasibility and economic justification of water supply and sanitation projects in Viet Nam.

The Bac Thai province project would contribute to the reinforcement of water supply and sanitation facilities in schools, including as necessary the construction of new facilities or the introduction of technologies which can later be replicated locally. The quantity of water made available to pupils should be increased by means of drilled wells, dug wells or filtration pumps or wells. Besides, the Ministry of Health stresses the need for water quality improvements, especially through chlorination (with bleach) and iron removal.

Environmental sanitation should be improved in the schools by the installation of hygienic latrines (1 to 2 units for teachers and 2 to 6 units for pupils), of urinals and washing places, of drainage systems for wastewater, reused as appropriate, for instance in pisciculture, and green space management of at least 30% of the school area.

In both water supply and sanitation, EAST has successfully tested and implemented some of these approaches in other countries. Besides, the subject is being gradually inserted into the teaching curriculum of some countries, which is another important objective of the Ministry of Health of Viet Nam. Finally this Ministry is considering the integration of various school curricula and programmes such as health education and diarrhoeal disease control into the country's water supply and sanitation development programmes.

The central project activity will be hygiene education. UNICEF concentrates the development of water supply and sanitation on primary schools, because of lower physical resistance of the pupils, higher morbidity rates and higher interest among the parents who are impatient to see their children acquire good hygienic habits. However, both the Ministry of Health and the Ministry of Education have expressed an interest in extending the project to some secondary schools as well, in order to facilitate the full understanding of health education and its dissemination to nearby communities. The project would therefore concern 20 primary schools (ages 6 to 11) and from 10 to 20 secondary schools (ages 12 to 15).

4.4 Financial and institutional arrangements

The cost estimate for the project is likely to exceed US\$ 50 000 and reach US\$ 80 000 to 100 000, and therefore the decision to execute the project would not be of the sole competence of the Ministry of Health. Most of the project resources would be funded from abroad. These sources could be the European

Community, or the French Ministry of Cooperation with support from the French regional committees, regional water agencies and other agencies and committees.

Among these various agencies, the Syndicat des Eaux d'Ile de France collects a small percentage of the water supply income of the suburban areas of Paris, and these sums are allocated to water supply, sanitation and health education in developing countries. EAST has cooperated in the execution of SEDIF-sponsored projects. Other agencies like the European Development Fund can also be asked to contribute to the project, which would also benefit from the ongoing contribution of UNICEF to the sector.

The authorization of the Ministries of Health and Education would be required, as well as authorizations at provincial directors' level, and the time required for the budgetary allocations to become effective would be about one year, so that the project could start in 1994, if the government and EAST have agreed by end-1993 on the conditions of their mutual collaboration. WHO has organized the formulation workshop and its funding with support from the Government of Sweden, and could provide technical support to project activities; subject to availability of resources, further WHO support to workshops and seminars to disseminate the results of the project could although be envisaged. This can be organized on a national basis, for the purpose of disseminating information to other provinces. International workshops are also organized by WHO in this field, as in the case of Latin America and Africa.

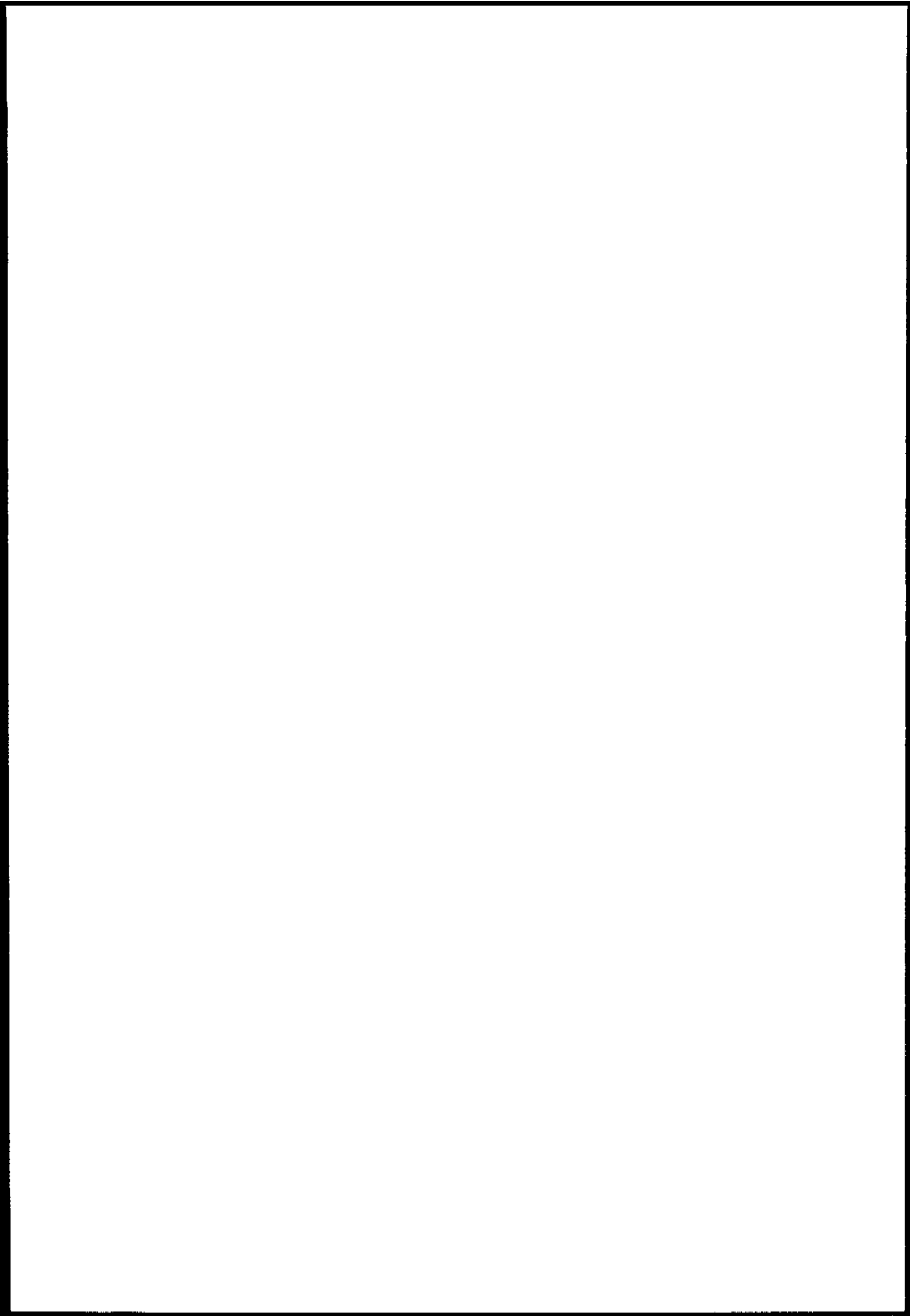
Among the Vietnamese authorities, a special Committee would be created to manage the project; this Committee would be interministerial at all levels (central, provincial, communal). The presidents of the People's Committee of the Province and of the People's Committees of the various Communes would be involved. The district would play an intermediate role, essentially administrative.

At central level, the Coordinating Committee would include the Ministry of Health, Department of Hygiene and Environment, as executing agency, the Ministry of Education as cooperating institution, and representatives of participating organizations.

4.5 Project costing and evaluation

The detailed costing for the project will be undertaken in the full formulation phase. It should include some of the items described above on the basis of cost data provided by UNICEF as well as data from privately built installations. In water supply, the cost of a privately-built well with handpump is of the order of US\$ 200. The contribution of UNICEF to school systems is of the same order. UNICEF systems include a locally-produced well, urinals for male and female pupils, drainage channels and latrines with septic tanks. The acquisition cost of audio visual equipment is of the order of US\$ 35 000, including US\$ 21 000 for a van, a motor cycle and a bicycle, US\$ 9 000 for equipment and US\$ 5 000 for documents, exhibitions, publicity etc. The Ministry of Health has also identified a number of training activities and workshops, as well as the required communication materials, including a video film in 60 copies, for dissemination in the provinces.

The project would be evaluated in terms of appropriateness, quantity and quality of water supply and sanitation facilities, effectiveness of hygiene education, as evidenced by changes in knowledge and behaviour of the pupils, direct effect on four diseases (intestinal parasitosis, diarrhoea, trachoma and skin diseases), relationship between teaching cost and learning benefits and changes in actual demand for water supply and sanitation.



AGENDA OF THE WORKSHOP

Tuesday 8 June 1993

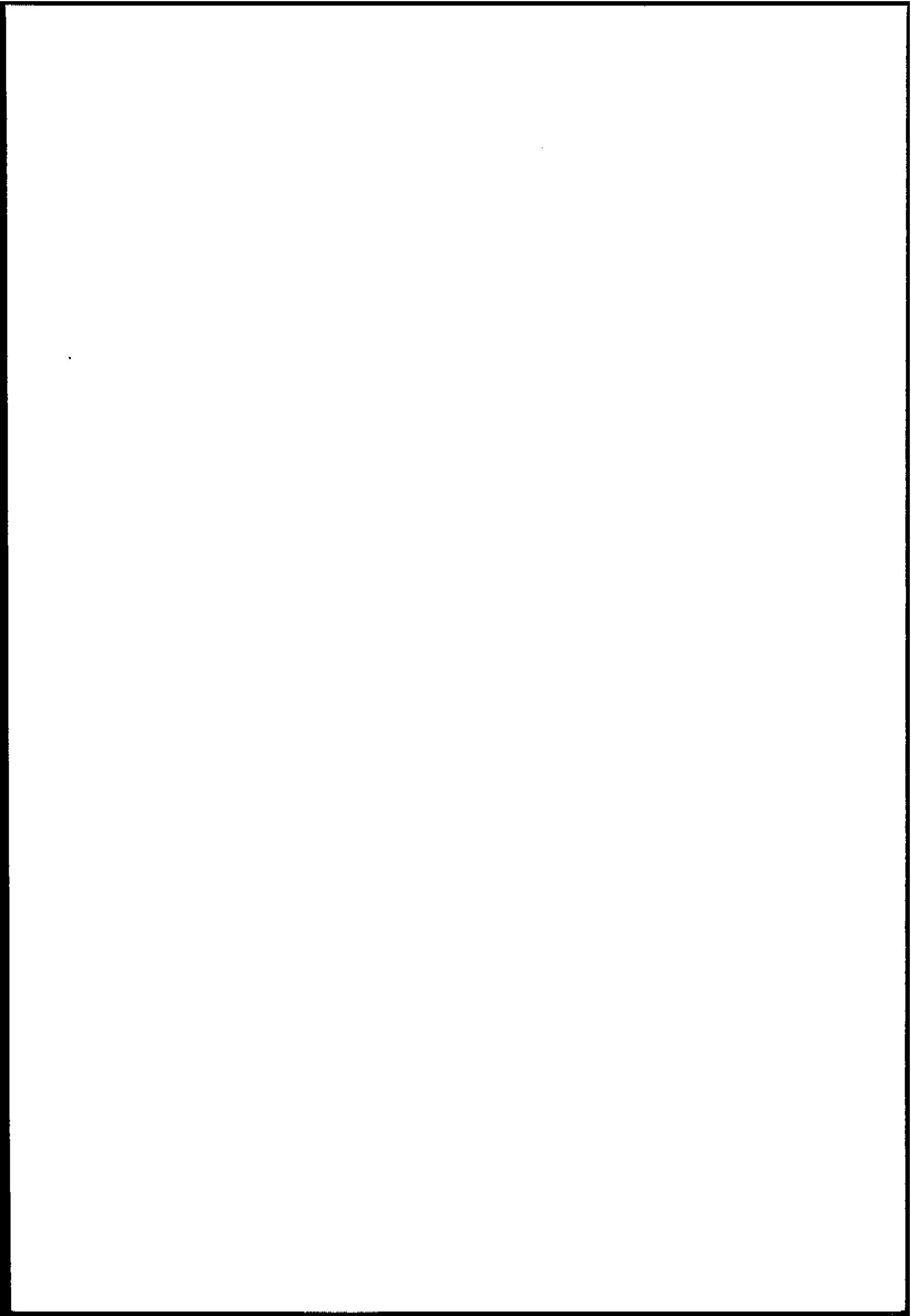
09:00 - 09:30	Opening, introduction and review of objectives	Vice Minister of Health
09:30 - 10:30	Existing hygiene education and sanitation facilities in schools in Viet Nam	Ministries of Health and Education and provincial staff
10:30 - 11:00	Coffee break	
11:00 - 12:00	UNICEF activities in school water supply and sanitation and areas of potential further collaboration	UNICEF
13:30 - 16:30	Field trip to two rural schools that demonstrate needs	Ministries of Health and Education

Wednesday 9 June 1993

09:00 - 09:30	Ways in which WHO is able to assist Viet Nam in improving hygiene education/sanitation facilities for schools	EHC and REH
09:30 - 10:30	French Cooperation, SEDIF and other mechanisms for funding projects	EAST
10:00 - 10:30	A SEDIF/WHO funded project in Burkina Faso on school hygiene/sanitation	EAST
10:30 - 11:00	Coffee break	
11:00 - 12:00	General information on EAST-executed projects	EAST
13:30 - 15:00	Film presentation: Africa - Discussion	EAST
15:00 - 16:30	Film presentation: Viet Nam - Discussion	Ministry of Health

Thursday 10 June 1993

09:00 - 10:00	Project identification	Ministry of Health, WHO, EAST
10:00 - 12:00	Collection of information on proposed project	All participants
13:30 - 16:00	Project formulation	All participants
16:00 - 16:30	Closing address	Ministry of Health



WATER AND SANITATION IN SCHOOLS POTENTIAL AND CHALLENGES

Presentation by
Mr Nguyen Quang Quynh
Senior Program Assistant
UNICEF, Hanoi

Distinguished guests,
Ladies and gentlemen,

Nowadays, the whole world is talking about global environmental problems as well as measures for protection and improvement. The developing world is focussing on universal access to safe water supply and sanitation as an intermediate goal for the year 2000. Great efforts have been made and considerable results recorded, but there is a long way to go.

It might not be necessary to replay the "Number Game" to see how many water points and latrines have been made available at familial level as well as at public places such as markets, bus stations, schools etc. However, it is important to know how many of them are being properly used and how many users have been educated with respect to hygiene and sanitation. It seems that in developing countries the hardware component of projects has often been better implemented than the software activities. Hygiene education is normally a topic to be discussed rather than an activity to be undertaken. This does not mean that nothing has been done to disseminate messages: millions of posters, leaflets, flipcharts ... have been developed and distributed with an aim to bring about awareness to the people, hoping that they will very soon change their unhygienic habits.

Learning from past experience, UNICEF together with the Ministry of Health and the Ministry of Education have been seeking a more practical approach to carry out hygiene education, through schools and schoolchildren. A project of Health Education in Primary Schools was formulated in 1990, with the following objectives: (1) to provide appropriate water and sanitation facilities in schools where hygiene education is being taught as a main subject, so as to help school-children practice what they have learnt, and (2) to disseminate through children messages on hygiene and sanitation to their parents, so as to promote community participation in hygiene and sanitation activities.

There are about 15 000 primary schools in Viet Nam and the target of the project was to cover 50 percent of them by 1995, if supplementary funds could be provided by other donors. At present, the project is mainly covered by UNICEF's limited regular budget. Therefore, the expansion of the project is not much, covering merely 1 000 schools by the end of 1993.

UNICEF support to this project consists in the following activities:

- to develop working procedures and approaches for the formulation and continuation of the project;
- to finance the organization of workshops, as well as study/research and training courses for teachers and staff;
- to provide main construction materials such as cement and iron bars, PVC pipes and handpumps for the installation of water supply and sanitation in the schools. These supplies costed UNICEF

US\$ 1 200 per school in 1991 and US\$ 600 in 1992. In 1993, the cost will be reduced to US\$ 400. This reduction of UNICEF support is based on results of a study conducted on the needs per school and on the potential participation/contribution of the users;

- to develop and produce advocacy materials for distribution to teachers and schoolchildren.

As UNICEF funds are limited while the demand is huge, it might take many years to cover all primary schools. However, there are possible ways out, one of which is the creation of need/demand and responsibility for every school. It is necessary to build up the feeling of self-reliance, avoiding the attitude which consists in waiting for assistance. As the project is running rather well, it could attract donors to provide supplementary funds for the expansion of the activities. WHO and NGOs might work together with UNICEF, or separately, not only to install sanitary systems but also to conduct hygiene education in schools as well as in the communities.

Finally, I would like to insist on the maintenance of the systems installed. It has been observed that these are highly appreciated by the users. In most cases, they are well used and maintained. However, in some schools where training was not well done and due attention was not given by the person in charge, the systems have been badly used and maintained. In those cases, it is not only a question of money wasted, but more importantly, of a kind of "side effect" which could badly damage the results of the efforts made by the project.

Thank you for your attention.

LIST OF WORKSHOP PARTICIPANTS

Name	Office
Nguyen Dang Ngoan	Public Health Services - Thanh Hoa Province
Bui Hoang Tung	Public Health Services - Thanh Hoa Province
Tran Duc Noi	Public Health Services - Thanh Hoa Province
Thai Hoach	Public Health Services - Ha Tinh Province
Nguyen Truong Sinh	Public Health Services - Ha Tinh Province
Nguyen Cong Hai	Public Health Services - Nam Ha Province
Vu Manh Thang	Public Health Services - Nam Ha Province
Ngo Minh Khang	Public Health Services - Hai Hung Province
Tran Si Tien	Public Health Services - Hai Hung Province
Nguyen Van Thinh	Hanoi Health Service
Nguyen Thi Thu Ha	Public Health Services - Hanoi Province
Vu Thi Tuyet Minh	Hai Phong Health Service
Le Song Huong	Public Health Services - Haiphong Province
Le Van Trung	Institute of Occupational Health
Nguyen Hung Long	Institute of Occupational Health
Nguyen Trung Kien	Ministry of Education
Nguyen Van Vinh	Journalist, Education
To Hong Ngoc	Journalist, Public Health
Nguyen Quang Quynh	UNICEF - Hanoi
Pham Duc Phuong	Dept. of Planning - MOH *
Nguyen Nhu Hy	Director of Dept. of Planning - MOH
Nguyen Huu Hung	Inspector - MOH
Nguyen Thi Yen	Dept. of International Cooperation - MOH
Hoang Thi Dung	Dept. of International Cooperation - MOH
Nguyen Thi Tram	Ministry of Education
Hoang Dinh Hoi	Deputy Director, Dept. of Hygiene and Environment - MOH
Nguyen Ngoc Oanh	Vice Director, Dept. of Hygiene and Environment - MOH
Le Ngoc Trong	Vice Minister of Health
Pham Ngoc Diep	Director, Dept. of Hygiene and Environment - MOH
Nguyen Hong Tu	Dept. of Hygiene and Environment - MOH
Nguyen Thi Thanh	Dept. of Planning - MOH
Phan Van Le	National Sanitation Programme - MOH
Pham Thi Giang	National Sanitation Programme - MOH
Dinh Ngoc Dung	National Sanitation Programme - MOH
Pham Nang Cuong	Expert on National School Hygiene
Le Dinh Minh	Hanoi Medical Institute

Secretariat

B. Fisher	San. Engineer, EHC/WPRO/WHO
L. Laugeri	Technical Officer, WHO/CWS/HQ
L. Monjour	President, Eau, Agriculture et Santé en Milieu Tropical, Paris, France

* MOH = Ministry of Health