School Sanitation & Hygiene Education Symposium

The way forward: Construction is not enough

Symposium Proceedings & Framework for Action

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The way forward: Construction is not enough

Delft, The Netherlands, 8-10 June 2004

"In one promising initiative, in early 2000, the School Sanitation and Hygiene Education programme was launched in six countries: Burkina Faso, Colombia, Nepal, Nicaragua, Vietnam and Zambia. By 2015, the programme aims to educate 80 per cent of primary schoolchildren about hygiene and to have all schools equipped with sanitation and hand-washing facilities. Students are targeted both as direct beneficiaries and as agents of behavioural and attitudinal change within their families and their communities. The programme recognises the importance of providing hygienic in-school sanitation facilities, taking into account the specific needs of female students."

UN Secretary General Kofi Annan in the Report on Sanitation to the Commission on Sustainable Development, 12th Session (CSD-12) in New York, 14-30 April 2004

International Water and Sanitation Centre, Delft, The Netherlands
2004

IRC

Foreword

These proceedings are dedicated to the people who will be young adults in the decades of the 2010s and 2020s. Today these future adults are of school age. Our responsibility is to provide these children with a good start: an effective learning environment that is clean and has the facilities that they need. Our responsibility also includes helping these children develop behaviours for good health and hygiene. These include the skills needed to organise their environment and work together for consistent healthy behaviour. At the same time, children can communicate their new behaviours and skills at home… in their communities etc. Programmes for this are called SSHE: school water, sanitation and hygiene education.

Therefore, we were pleased that we could welcome almost 50 professionals from many different countries during the symposium 'School Sanitation & Hygiene Education. The way forward: Construction is not enough', which took place at IRC from 8 to 10 June 2004. The organisation of the symposium was made possible through co-sponsors: United Nations Children's Fund (UNICEF) and the Water Supply and Sanitation Collaborative Council (WSSCC) with the help of supporting partners: Plan International Headquarters, London; Plan Nederland, Amsterdam; Water Engineering and Development Centre (WEDC) – Loughborough University; Partnership for Child Development – Imperial College, London; London School of Hygiene and Tropical Medicine (LSHTM); Gender Water Alliance (GWA); Streams of Knowledge (STREAMS); United Nations Educational, Scientific and Cultural Organization (UNESCO); World Health Organization (WHO). Papers were also presented during the symposium by professionals from the Ministry of Education-Nicaragua, Umgeni Water (South Africa), Community Empowerment Initiative (CEI- Uganda), Centre for Community Health Research (India), and the Eindhoven University of Technology (Netherlands).

The symposium confirmed a set of basic principles for developing effective SSHE programmes:

- Community-based water and sanitation initiatives should always be linked with activities in local schools.
- Keys to scaling up with quality are sustainability, decentralisation, participation, partnership and policies.
- Each SSHE programme needs an advocacy and information-sharing plan based on existing experience and information.
- Capacity building is needed at all levels, including developing plans for strengthening school personnel and institutional capacities.
- Flexibility of approach should not be lost in scaling up.

By working towards the implementation of this 'Framework for Action', we trust that the way forward for hygiene, sanitation and water in schools will be found.

Paul van Koppen
Director, IRC International Water and Sanitation Centre,
Delft, The Netherlands
July 2004

Table of contents

Introduction

These proceedings are for people who are interested in school sanitation and hygiene education (SSHE). The document has been written, in effect, by 19 professionals who contributed papers and/or made presentations at the SSHE symposium held in Delft, The Netherlands from 8-10 June.

The proceedings can be used in various ways: (1) to learn about the knowledge base for SSHE, (2) to examine specific gaps and challenges, (3) to learn about current project experiences in three continents.

The symposium and these written proceedings have been organised into three parts:

1. *Introductory or keynote papers* by the Minister of Development Cooperation of the Netherlands and sector leaders from UNICEF and the Water Supply and Sanitation Collaborative Council.

2. *Lessons learned and opportunities* are presented from 14 professional papers on a range of topics and experiences in SSHE. These were based on experiences in nine countries as well as on international and theoretical work. Many papers, of course, touched on the same subjects from different points of view, and there were interesting comparisons to be made. To draw out these comparisons, rather than show each paper separately in these proceedings, the observations and findings from all the papers have been combined by topic. You can find a list of papers and authors and their e-mail addresses at the end of this report.

3. *Framework for Action*: the group statement of key issues and principles with strategies for further action that can help to ensure effective SSHE.

Almost 50 people participated in the symposium, more or less from three groups:
- Practitioners: professionals carrying out SSHE programmes, with in-depth experience about real-world issues.
- Managers: from, for example, UNICEF programmes or other programmes into which SSHE is integrated. These professionals are well aware of the challenges to be overcome in scaling up with quality.
- Facilitators: people from support agencies and institutions such as WHO and UNESCO, from international institutions and donors such as SIMAVI, the Church World Service and the Imperial College of Medicine at the University of London.

Global recognition and coordination has grown:
A time line

Before 1990s	*Non-coordinated efforts on school hygiene and provision of toilets and water points at schools*
1993	*First studies and workshops by IRC and WHO showing SSHE experiences but mainly on a small scale*
1998	*UNICEF SSHE manual building on country experiences; developed in cooperation with IRC*
1999-2003	*Pilot SSHE programme in six countries and other interested countries*
1999 – 2004	*Increase in programme support for SSHE/WES in schools and advocacy and international call for action*
Today:	*Symposium SSHE: the Way Forward*

Source: presentation by L. Burgers, UNICEF

Keynote presentations: Summaries

At the opening of the symposium, three keynote speakers highlighted the need for dedication and commitment towards SSHE. Each used a different entry point to reflect concern for the successful development of future projects. However, each also showed confidence that it can be done.

- **Ms. Agnes Van Ardenne,** Minister of Development Cooperation, Government of the Netherlands, described the international context within which SSHE has developed, and particularly the VISION 21 declaration adopted at the World Water Forum in 2000. Mrs. van Ardenne noted the importance of inter-sectoral cooperation and partnerships, the need to make use of current knowledge about programming and the importance of maintaining programme quality. The Minister emphasised the continuing commitment of the Government of the Netherlands for SSHE.

- **Ms. Vanessa Tobin,** Chief, Water, Environment and Sanitation Section, United Nations Children's Fund, noted that UNICEF has committed itself to assist governments and other partners to make substantial progress in ensuring that all school children have access to safe drinking water and appropriate sanitation by 2015. UNICEF WES country programmes have embraced school sanitation, hygiene and water programming. The number of country offices supporting projects or activities related to school-based sanitation, water and/or hygiene education programmes has increased from 36 country offices in 2000 to 72 countries in 2003.

- **Mr. Darren Saywell,** Programme Manager, Water Supply and Sanitation Collaborative Council (WSSCC), emphasised that school sanitation and hygiene education can help
  - reduce the millions of days lost at school because of diseases;
  - improve school attendance, especially of girls;
  - improve the education of girls;
  - make schools more attractive for teachers;
  - reduce environmental pollution.

More detailed summaries of their speeches can be found on the following pages.

Ms. Agnes van Ardenne, Minister of Development Cooperation, Government of the Netherlands

Using soap and water should be everyone's business
The simple act of washing hands with soap and water can reduce diarrhoea by one third. Let us start supporting these simple acts. Let us help to improve the hygiene behaviour of school children in developing countries. This not only has a direct impact on their lives, but also influences the behaviour of their parents, their neighbours, and their villages. School children are agents of change. Let us get them to school. Let us make sure that the schools are equipped with water pumps and proper toilets, for both boys and girls.

The targets for school sanitation and hygiene education are clearly set out in Vision 21, the Water for People document, presented and endorsed at the 2nd World Water Forum held in The Hague in 2000. By 2015, 80% of all primary school children will be educated about hygiene, and all schools will be equipped with toilets and hand-washing facilities. All boys and girls must have access to basic education. Maternal and child mortality must be drastically reduced. School sanitation and hygiene education greatly contribute to all these goals - and so also to poverty reduction. Let that message be clear next autumn in Dakar, when the Collaborative Council meets in preparation for the 13th session of the Commission on Sustainable Development.

And let us also try to better integrate our efforts towards these objectives on the ground. Education and water are still worlds apart in development cooperation. We need to bring them closer together. Both are priority sectors in Dutch development policy. I am keen to make sure that water and education programmes in our partner countries also devote attention to sanitation and hygiene in schools. We will continue to collaborate with UNICEF, the front-runner in this effort. UNICEF has helped to create a worldwide movement for SSHE. Let us now help to ensure that SSHE is actually mainstreamed in government policies.

What is the way forward for school sanitation and hygiene education?
The past four years have represented the pilot phase. We supported the SSHE programme initiated by UNICEF and IRC. Now we need to scale up, and I see four areas that need attention.

First: quality. How do you preserve quality when expanding from one or two schools in a certain area to perhaps 100 or even 2,000 schools? What can we learn from current best practice on scaling up? And of course competent management is vital in this.

Secondly, we must not keep reinventing the wheel. I am sure there are no blueprints for good SSHE programming, but what do we know of the impact on children and on families? How can we make use of success stories?

Thirdly: partnerships. One cannot make a difference while working in splendid isolation. Hence my call to seek crossovers between sectors. But we also need to cross the artificial boundaries between different players. Partnerships of governments, UNICEF, civil society, and the private sector are needed. Development professionals are often not keen on working with the private sector. My view is just the opposite: we cannot work without them. I have placed the private sector firmly on the Dutch development agenda. This is a follow-up to the pledges we made during the summit on sustainable development in Johannesburg.

Ensuring that the next generation is healthy and well educated is also in the interests of business. Why not team up with them to make sure that hand pumps are built and sanitary facilities are constructed? But let us not ignore the software aspects, such as training maintenance engineers and producing textbooks and, of course, the participation of parents, user groups, farmers and so on.

This brings me to my **fourth** and final point. We have to fulfil our promises; so much more money is needed. I am happy to announce that the Netherlands stands ready to increase its support to school sanitation and hygiene education from one million to two million US dollars over the next three years.

Ms. Vanessa Tobin, Chief, Water, Environment and Sanitation Section, United Nations Children's Fund (UNICEF), New York

Every year, over three million children under five years of age die as a result of *preventable* diarrhoeal diseases. The deaths of children from diarrhoeal diseases rank second only to acute respiratory infections, however diarrhoea increases deaths from respiratory infections and other opportunistic diseases by lowering children's immunity. Diarrhoeal diseases account for over a billion episodes of child diarrhoea in developing countries, that is, four to five episodes per child every year. In addition, poor sanitation and hygiene causes 400 million school-aged children a year to suffer from intestinal infections. Household chores such as fetching water keep many girls out of schools. Even if girls do manage to go to school, when water is needed, it is they who are sent to fetch it. When family members become sick (often due to hygiene-related diseases), girls are more likely to be kept home to care for them. Providing water closer to homes increases girls' free time and boosts their school attendance.

The water and sanitation challenge not only persists but is becoming more and more urgent, in the context of population growth and poverty. The good news is that world leaders refused to give up and let the age-old dismal situation continue; they at the UN Millennium Conference renewed their commitment to a goal on drinking water. The target they adopted is to halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation. The World Summit on Sustainable Development included the importance of providing water and sanitation facilities in schools within the plan of implementation as part of the overall strategy for poverty alleviation.

Perhaps the single most important lesson learned from the implementation of WES programmes throughout the world is that water and sanitation facilities on their own do not automatically result in improved health. While access to improved facilities is important, the correct use of the facilities is what ultimately leads to disease reduction and healthier children. Hygiene is the key factor. People can protect themselves from diarrhoeal disease and other infections only if they are given access to appropriate information to increase awareness and encouraged to make changes in their hygiene behavioural patterns.

UNICEF has committed itself to assist government and other partners to make substantial progress in ensuring that all school children have access to safe drinking water and appropriate sanitation by 2015. The central role of schools within communities also presents opportunities to promote hygiene education and wider

community action to accelerated water and sanitation coverage. There is a reinforced thrust for inter-sectoral approaches, and the results show that water, sanitation and hygiene programmes in schools enhance child friendliness, gender sensitivity and the overall quality of the learning environment and health of the learners. Wide-ranging partnerships, a key factor for the success of water and sanitation in schools, have been cultivated with local communities, parent/teacher organisations, donors and a variety of local, national and international NGOs. Partnerships and campaigns, such as WASH in schools and FRESH (Focusing Resources for Effective School Health), are being launched in many countries.

In 1998, UNICEF and IRC, with the support of the Netherlands government, started the school sanitation and hygiene education initiative in six countries, namely, *Burkina Faso, Zambia, Nepal, Vietnam, Colombia* and *Nicaragua,* which provided limited funding for physical improvements in some 10-20 schools per country, yet managed to reach a total of 11,329 schools in all by acting as a catalyst resulting in effective partnerships with others for broader leveraging of resources and investments.

School Sanitation and Hygiene Education has been a new programme initiative for the past five years, which aims at improving school environment and hygiene conditions. Overall, the Convention on the Rights of the Child is allowing UNICEF-supported programmes to become focused less as sectoral initiatives and more sensitive to all the needs of children, but with a priority on early childhood.

Children can be very effective agents of change. By focusing on school aged children (5-18 years old), giving them tools and knowledge, life skills-based health and hygiene education to change behaviour today, future generations will be better prepared to take care of their families and communities' health and clean environment. In addition, attention to these issues in the secondary education of older girls will improve their health and nutrition and ultimately the health and nutrition of their offspring. We believe that ministries of education in your countries could take the lead role in advocacy and call for inter-ministry and inter-agency action to promote water, sanitation and hygiene in and through schools in this region.

The most effective way to ensure that latrines, hand-washing facilities and water points meet the needs of girls in particular and children in general, is to ask them what these needs are – to fully involve girls and boys in the planning, design and implementation processes. Respecting a child's right to participation will help to ensure that her or his right to education is fulfilled. School sanitation and hygiene education programmes should allocate sufficient time and resources prior to any construction activities to achieve meaningful participation by children.

UNICEF WES country programmes have embraced school sanitation, hygiene and water programming. According to the UNICEF annual reports, the number of country offices supporting projects or activities related to school-based sanitation, water and/or hygiene education programmes has increased from 36 country offices in 2000 to 72 countries in 2003.

Most of the UNICEF-supported interventions are designed as a means of promoting child-friendly/gender-sensitive learning environments and the health of learners as part of the 'packaged approach' to human rights-based quality education that is gaining momentum. Increasing integration and joint planning within UNICEF, as well as advocacy and partnership with others is a cornerstone of many programmes, with UNICEF acting as a catalyst to formulate a joint vision, to develop policies, and to

leverage funding from governments, bilateral donors, investment banks and national and international NGOs in an effort to scale up efforts. About 11% of UNICEF's 2003 budget spent on water and sanitation is spent on water, sanitation and hygiene in schools, an increase from 3% in 2001.

Some examples of good practices from country-level interventions:

- In *Chad*, in addition to the establishment of water points – including in nomadic areas – the repair of pumps, and the construction of gender-separate latrine blocs in 16 schools, hygiene education is being promoted with children and young people themselves participating as animators. Moreover, with the child-friendly/girl-friendly school concept promoted in the national EFA plan, the government has agreed to render integration of WES elements obligatory in all school construction projects.
- In *Malawi*, a pilot programme in 53 primary schools (representing 1% of the total) has evolved into an inter-sectoral programme with a variety of partners aiming at 1,020 schools (23% of the total), with UNICEF spearheading initiation of the National Steering Committee for School Sanitation and Hygiene Promotion.
- In *Ethiopia,* UNICEF is bringing NGOs, multilateral and bilateral organisations together around a common aim to improve water and sanitation in 60% of primary schools by 2007. UNICEF itself has provided assistance to 4,398 schools (about 35% of the total).
- In *India,* with UNICEF support to some 20,000 – 25,000 schools (5% of the total number of primary schools) in 270 of the 540 districts in the country, considerable progress has been made in advocating the need to match provision of infrastructure and facilities with appropriate hygiene education strategies as well as improved school and village management of facilities.
- In *Bangladesh,* nearly 5,000 schools are being reached, with children, teachers and parents involved in assessment, resource mobilisation, school planning, facilities improvement, and hygiene education using the child-to-child approach.
- In *Sri Lanka*, water and sanitation is being provided to 432 primary schools in the north east conflict zone, along with support for the rehabilitation of WES facilities in schools in flood-affected areas.
- In Afghanistan, UNICEF provided – next to support to rural water supply – support for the Back-to-School Campaign, which enabled 2.9 million children to return to school in 2002. WES provided support to improve the quality of the learning environment, including the rehabilitation and the addition of water and sanitation facilities. Fifty-two percent (3,552) of all primary schools were provided with water and 1,500 (22% of all primary schools) with separate latrines for girls and boys.

In several countries the provision of facilities and practical hygiene education still needs to be taken to scale but there are many successful models by UNICEF and partners that can be studied and made part of standard practice in the mainstream. The central role of schools within communities also presents opportunities for this work to influence wider community action to accelerate sanitation coverage - and we have excellent examples of this happening in some countries.

UNICEF's long partnership with governments has enabled it to influence and support policy change at the national level. However, more could be done in the area of working with and influencing the large sectoral programmes led by the development banks. As noted above, the projects financed by these banks – including through SWAP and PRSP mechanisms – often represent the single largest investment in the sector nationally. In countries where UNICEF does not focus on advocacy and policy development, opportunities are lost.

In the words of the UNICEF Executive Director, Carol Bellamy: *"Achieving truly sustainable development means creating a world that is fit for children, and that means a world with safe drinking water and clean sanitation and hygienic facilities in schools. That is why UNICEF in the World Summit on Sustainable Development* (Johannesburg, 30 August 2002) *is calling on national leaders to ensure that in the course of this decade every primary school in the world be equipped with separate facilities for boys and girls – and that every school, without exception, have a source of clean and safe drinking water."*

In closing, I would like to take the opportunity to stress the fact that there is no better cause around which to build partnerships than children. We would like to continue to work closely with the Netherlands government and IRC in taking this initiative further to scale. While sustainable development will benefit tomorrow's children, we must stay focused on today's children as our first priority. This initiative is and will be one of the most important in placing the well being and children first and foremost on the development agenda for many years to come.

Mr. Darren Saywell, Programme Manager, Water Supply and Sanitation Collaborative Council (WSSCC), Switzerland

In preparing for today, I wanted to focus on four key questions. In short:
- **What is the level of interest in SSHE?**
- **Why does SSHE matter?**
- **What are the constraints to greater progress?**
- **What can be done?**

The level of interest in SSHE.
SSHE enjoys widespread recognition for its important role in achieving water, sanitation and hygiene for all. If you take a quick look at the international policy arena it has been recognised in several ways:
- Millennium Development Goal (MDG) 2 focuses on achieving universal primary education. The target here is to achieve a situation where all boys and girls complete primary education by the year 2015.
- MDG 3 focuses on gender issues and includes an associated indicator on schooling.
- The Johannesburg Plan of Implementation (JPOI) from the World Summit on Sustainable Development specifically mentions the importance of school sanitation as concrete step forward in tackling the MDG on water and the target on sanitation.
- The Vision 21 – Water for People document (presented and endorsed at the 2nd World Water Forum in 2000) outlined a series of targets for 2015 – including: 80% of primary children educated about hygiene, and all schools equipped with facilities for sanitation and hand washing.

Looking beyond the international policy arena, one can observe that:
- locally and nationally, there appears to be a wide body of anecdotal evidence of the interest from politicians in promoting SSHE, primarily because its practical outcomes so readily attracts voters;
- there is also considerable practitioner interest in SSHE, as witnessed through your participation here at this symposium and the growing number of initiatives to coordinate, research or advocate on the subject (including, for example, the FRESH initiative, amongst others).

So the level of stated or written commitment appears to be high.

Why does SSHE matter?

There is a significant body of evidence about the importance of SSHE, much of which offers compelling arguments in its favour.

- SSHE, children and health: appropriate environmental health interventions relating to water, sanitation and hygiene education can significantly reduce the mortality rate and incidence of sickness and disease for children under five. In Madagascar, a recent survey found that 3.5 million schooldays are lost each year due to ill-health related to poor sanitation.
- School attendance: improved water and sanitation increases the opportunities for children to attend school. In Tanzania, a 12% increase in school attendance was recorded when facilities were 15 minutes away rather than an hour.
- Performance at school: reducing the incidence of water-related illness and disease increases children's performance at school by promoting more effective learning. A study of 432 children from 42 primary schools in Java, Indonesia, suggested that hookworm infection, which causes anaemia, can have significant adverse effect on children's working memory, which may affect their reasoning and their reading comprehension.
- Girls' education: more girls attend school when community water supplies are improved and when there are separate and private sanitation facilities for girls and boys. In the Noakhali district of Bangladesh, a study in 1998 indicated that the provision of water and sanitation facilities increased girls' attendance at school by 15%.
- Teachers: safe water and sanitation facilities increase the recruitment, attendance and retention of teachers.
- Environmental health: through functioning and proper use of facilities, it is possible to reduce environmental pollution and promote community wide environmental health.

None of the above is new, but it needs stating and restating. With the political will expressed at international level and the great bank of evidence about the improvements and impacts that these investments make, why is it not happening? Why is greater progress on SSHE not being made?

What are the constraints to greater progress?

I suggest the following *four* factors, not an exhaustive list, cover the main roadblocks which require addressing:

- Policy: there is a need to involve all stakeholders in developing an intersectoral approach to SSHE that includes education, health, water and sanitation sectors. In practice, the implication is that improved coordination between those with responsibility for SSHE must occur at the right times to ensure improved quality in SSHE programmes.
- Institutional ownership: an institutional sense of ownership between the different actors working on SSHE is frequently lacking. Without such a mind set, SSHE programmes will continue to fall between cracks in responsibility and implementation.
- Links between people and technologies: constructing school sanitation facilities is straightforward; especially compared to the software aspects of SSHE. But a wider problem is the difficulty of aligning the interests of the schools, with those of parents/teachers so that construction, education and participation of all are linked together and operate in a sustainable and cost effective way.
- Education and capacity: the resources required to provide teaching and learning, particularly in relation to hygiene education, are frequently absent in schools. Moreover, use of creative techniques to convey these key messages are rarely part of the teacher training programme.

What can be done?

There are several key ways in which to push the SSHE agenda forward, including:

- Establish platforms for collaboration on SSHE at the local and national level: coalitions of those working on and committed to SSHE are needed to review actions required to create a more supportive environment for SSHE.
- Stress the interconnectedness of SSHE and development: there is increasing recognition of the interconnectedness between the Millennium Development Goals, and water, sanitation and hygiene. Such connections need to be stressed to raise political and practitioner interest in SSHE.
- Build a stronger evidence base: applied research studies focused on filling in knowledge gaps are still required – especially to assess what hygiene promotion techniques have been applied and which ones work; to compile the technical designs for school sanitation in a compendium of appropriate technology solutions; and to focus on the blockages in regulatory, legislative and policy frameworks that act as a constraint to uptake of SSHE programmes.
- Advocate: all of the above to policy makers and to those responsible for programme implementation.

WSSCC and SSHE

What is the Water Supply and Sanitation Collaborative Council (WSSCC) doing to promote this agenda? Here, our focus has been to mix advocacy with action:

- WSSCC recognised the central importance of SSHE during the preparation of Vision 21 – Water for People, presented at the 2nd World Water Forum in The Hague in 2000, which included targets on adoption of SSHE facilities in schools by the year 2015. Moreover, the Water, Sanitation and Hygiene for All (WASH) campaign has focused one of its four core messages on the importance of reaching women and children, using the vehicle of SSHE as one means for doing so;
- WSSCC is working with a few selected partners to try to increase the coverage given to SSHE locally, nationally and internationally. Two examples include:
- With the Centre for Environment Education in India, we have developed teacher's manuals to help spread SSHE messages to 2500 schools across the sub-continent.
- With UNICEF we have launched a concerted advocacy campaign, 'WASH in Schools', in order to highlight the pressing need for improved SSHE facilities, education and training, and the development of an appropriate supporting environment in which SSHE can flourish.

Concluding points

- The challenge for SSHE supporters and advocates is to turn the expressions of political will and case study examples of success into programmes that are widespread, integrated and supported by a wide base of stakeholders.
- The challenge for this symposium is to help identify the tools and means by which this can happen. Let us not lose this important opportunity.

The way forward in programming for hygiene, sanitation and water in schools

This part of the proceedings focuses on the essentials of hygiene, sanitation and water in schools based upon evidence provided in the presentations. Further it includes lessons learned and opportunities as presented in 14 professional papers on a range of topics and experiences in SSHE. These were based on experiences in nine countries as well as on international and theoretical work. There were interesting comparisons to be made among the papers that touched on the same subjects, from different points of view.

The essentials on hygiene, sanitation and water in schools

Working in SSHE means focusing on our responsibility to provide children with an effective and healthy learning environment. Part of this learning environment is facilitated by hygiene, sanitation and water initiatives in schools. At the very least, there should be a clean environment that provides the facilities that children need for sanitation, handwashing and water supply, and support for children to develop skills, attitudes and knowledge on good health and effective hygiene. At the same time, children can communicate their new behaviours and skills at home, in their communities and use it in future when they become parents themselves. Girls will particularly benefit from such an environment.

In summary, the essentials on hygiene, sanitation and water in schools can be clustered into five different perspectives:

1. Health perspective	• Sanitation is a basic human right. • Dirty facilities can make children sick: improved hygiene and sanitation at school is critical to health of school children. • More than knowledge: hygiene habits and hand-washing practices among all children improve their overall health.
2. Learning perspective	• Education and health are co-dependent: stunting, nutritional deficiencies, diarrhoea and helminth infections affect school participation and learning.
3. Gender perspective	• School dropout rates and low literacy levels, especially among adolescent girls, can be attributed in part to inadequate sanitation and health conditions in schools.
4. Change agents perspective	• Children can be change agents for their own families and communities.
5. Future impact perspective	• Schools provide an excellent opportunity to create life-long changes in hygiene behaviour.

1. The health perspective

Diarrhoea and helminth (worm) infections are two major health concerns that affect school-age children on a large scale, and that can be reduced through improved hygiene, sanitation and water in schools.

Global prevalence (and number of cases) of intestinal helminth infection in school-age children are estimated at: roundworm 35% (320 million); whipworm 25% (233 million); hookworm 26% (239 million)[1]. Many children suffer from multiple species infections. These parasites consume nutrients from the children they infect. In doing so, they bring about or aggravate malnutrition and retard children's physical development. This can lead to stunting, weight loss and anaemia (iron deficiency anaemia, IDA)[2].

Around the world…

Disease type	Morbidity	Mortality (deaths/year)
Diarrhoea	< 4,000 million	2.5 million
Roundworm	250 million	60,000
Hookworm	151 million	65,000
Whipworm	42.5 million	10,000
Trachoma	146 million (+6 million blind)	None
Schistosomiasis (bilharzias)	200,000	20,000

Adapted from Fresh Framework and World Health Report, 1998 – WHO Website, 2004

Figure 1

Diseases can be spread at school. If school sanitation and hygiene facilities are absent, or are poorly maintained and used, schools become a health hazard. During the 1997-98 cholera epidemic, the Ugandan government spent 4.3 billion Ugandan shillings (US $23 million) in health care costs. Schools rapidly became a place for disease transmission and 560 schools had to be closed due to the lack of adequate and acceptable facilities.

Human excreta is dangerous[3]
One gram of excreta can contain:
10,000,000 viruses
1,000,000 bacteria
1,000 parasite cysts
100 parasite eggs

Safe excreta disposal is important. The text box shows how dangerous human excreta can be. Of course, not every virus or bacteria is dangerous. However, the overall load can be very large.

[1] Partnership for Child Development (1997), *"This wormy world: Fifty years on"*, Parasitology Today, poster, November 1997
[2] FRESH Focusing Resources on Effective School Health homepage, http://www.freshschools.org
[3] Curtis, V. (1998). Happy, healthy and hygienic: how to set up a hygiene promotion programme. Part 1. Planning a hygiene promotion programmes. UNICEF, New York and London School of Hygiene and Tropical Medicine, London.

As illustrated in the graph below there is a direct link between diarrhoea and toilet hygiene. In this study, more than 40% of the cases of diarrhoea in schoolchildren were attributed to transmission at school rather than transmission at home.

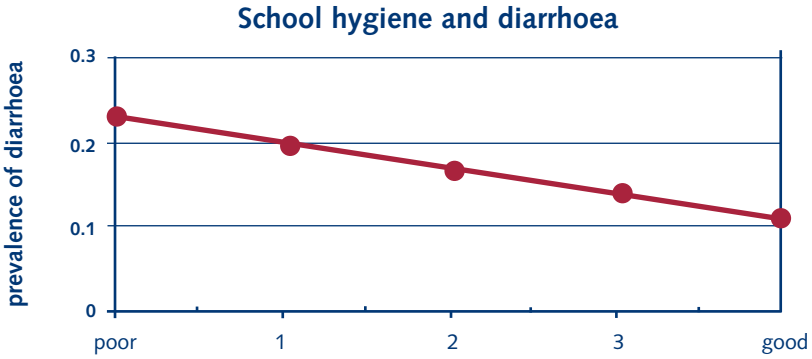

Figure 2

Sample of 9,800 primary school children in Cali, Colombia
In this stuy, more than 40% of the cases of diarrhoea in school children were be attributed to school transmissions rather than transmission in homes. Hygiene score measured by functionality of latrines, number of water outlets near toilets per 100 students, cleanliness in latrines. J. Koopman, 1978

Four key interventions for fighting diarrhoea are:
- **Quality** of water: bacterial and chemical
- **Quantity** of water used
- **Hygiene** including hand washing and face washing
- **Sanitation**, particularly safe disposal of human excreta

The results of an analysis of 144 studies related to water and sanitation[4], somewhat counter-intuitively, showed that:
- safer excreta disposal led to a reduction in child diarrhoea of up to 36%;
- better hygiene through consistent hand and face washing, food protection and domestic hygiene brought a reduction in child diarrhoea of 33%;
- improved water supply led to a reduction in child diarrhoea of only 15-20%.

The analysis showed that hygiene promotion can have greater impact on public health than water supply provision. It also showed the importance of synergy between hardware (technical solutions) and software (behaviour change).Among hygiene behaviours, hand washing, in particular, provides a great health advantage. Hand washing can block the transmission of pathogens (germs and faecal matter) that cause diarrhoea. In school programmes this is very important. Even well-maintained latrines, without consistent hand washing, will not result in the intended health benefits[5].

A study[6] suggests that sanitation and water-related diseases could be reduced by 43% if people always wash their hands after defecation. For eye health, face washing is important; for skin health, body washing.

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[4] Esrey, S. A. No half measures: sustaining health from water and sanitation systems. Waterlines, Vol. 14, No. 3, 24-27. IT Publications, London. 1996.
[5] Simpson-Herbert, M. and Martines, J. 1992. *Improving water and sanitation hygiene behaviours for reduction of diarrhoeal disease* Geneva, 18-20 May 1992, WHO. p. 7
[6] Curtis V. and Cairncross S (2003) *Effect of washing hands with soap on diarrhoea risk in the community; a systematic review.* Lancet Infectious Diseases 3, 275-281.

Impact of hand washing…

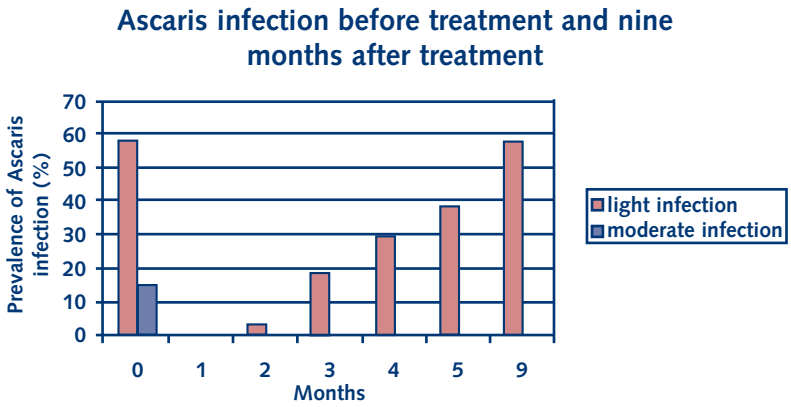
Location	Reduction in diarrhoea	Reference
Burma	30%	Han & Hlaing
USA	48%	Black et al.
Bangladesh (urban)	35%*	Khan

* Impact on shigellosis. S. Huttley, 1992

Figure 3

Experimental field studies have shown that, under similar conditions, any common cleansing agent – soil, ash or soap – produces similarly efficient results. It confirms other clinic-based studies, which showed that, if the scrubbing action is rigorous, then any of these agents removes bacteria from the hands[7].

Hygiene education and health interventions should be continuous, not just one-time events**.** The graph below (figure 4) shows that after a single treatment for worms (without a strong education component in the school), the infection tended to return. This implies that school interventions must be sustained beyond the life of a single project[8].

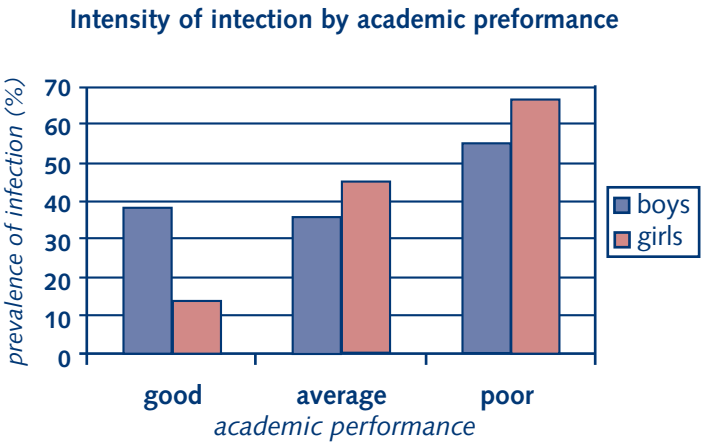


Sample of 217 poor children in Visakhapatnam, Andhra Pradesh. 177 children were infected wiht *Ascans* and treated. But reinfection occurred after treatment. I. Paul and G. Gnanamani, 1998.

Figure 4

[7] Hoque, B.A. (1995) Post-defecation handwashing in Bangladesh: Practice and efficiency perspectives. Public Health , 109, 15-24

[8] Paul, I. and Gnanamani, G. (1998) *Re-infection estimation of soil-transmitted helminths among slum school children in Visakhapatnam, Andhra Pradesh. Immun. Dis. 30(4)* 245-249



Schistomiasis infections, number of eggs/10.ml. School performance as graded by teachers. Research from Mali. De Clercq er al. 1998.

Figure 5

Children with worm infestation tend to perform worse in school. A study[9] from Mali (figure 5) demonstrates that the level of schistosomiasis infection (as measured by the number of eggs per 10 ml of urine) is related to academic performance ($p<0.01$). Although the study sample of 580 children in two primary schools is small, there is little reason to believe that the results would differ in other affected countries.

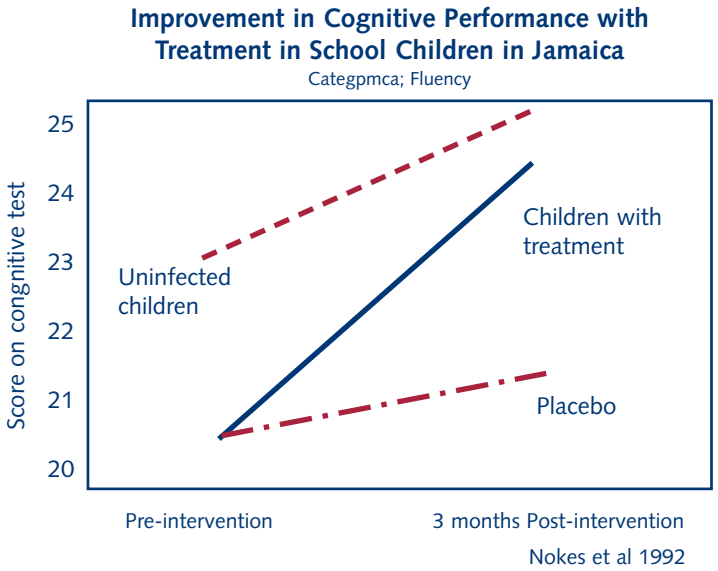
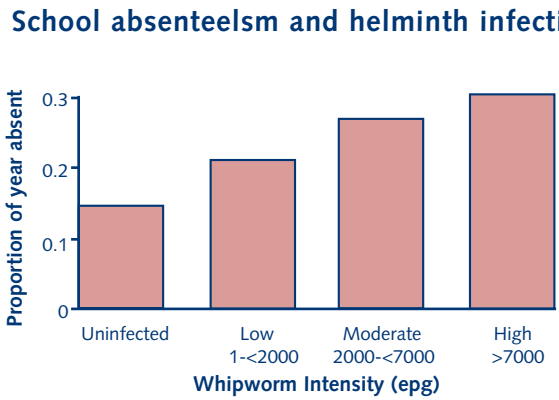


Figure 6

[9] De Clercq, D. et al.(1998) *The relationship between Schistosoma haematobium infection and attendance in Bamako, Mali.* Annals of Tropical Medicine & Parasitology. Vol 92, No. 8, 851-858.
[10] Nokes, C. et al. (1992). Moderate to heavy infections of Trichuris trichiura affect cognitive function in Jamaican school children. Parasitology. 104(3); p.539-547.

A study[10] in Jamaica (figure 6) shows that children treated for whipworm performed better in cognitive tests than children who were not treated. The use of the 'placebo' implies that every participant thought they were being treated. This study supports the findings of the preceding study.



Nokes et al 1993
Research from Jamaica

Figure 7

Children with worm infections tend to be absent from school more often. A study[11], from the same group in Jamaica (figure7) shows that children who have greater levels of infestation (in this case from whipworm) tend to be absent from school up to one-third more often[12].

3. The gender perspective[13]

Gender is not only about women and girls. Gender is about boys and girls, men and women, not about sexual differences so much as about socially and culturally determined differences. People make these differences and therefore they can, and do, change them. The needs and demands of women and men, and of adolescent boys and girls differ particularly in personal hygiene and sanitation habits. Gender mainstreaming involves assessing all the implications that any sanitation and hygiene intervention can have for women and men. These differences need to be reflected in relevant policies, strategies and approaches that promote improved sanitation and hygiene behaviour.

Girls, who are already marginalised in accessing education, are doubly penalised because inadequate sanitation facilities allow them no privacy, especially during menstruation. The lack of private sanitary facilities for girls discourages parents from sending girls to school, contributes to girls dropping out at puberty, and is a contributing factor to fewer women teachers, who are needed to encourage girls to attend school. About 1 in 10 school age African girls do not attend school during

[11] Nokes, C. & D.A.P. Bundy. (1993) *Compliance and absenteeism in school children: implications for helminth control.* Transaction of the Royal Society of Tropical Medicine and Hygiene, 87, 148-152.
[12] Nokes, C. & D.A.P (1994). Bundy. *Does helminth infection affect mental processing and educational achievement?* Parasitology today, 10, 14-18.
[13] Information drawn from the presentation given by Rose Lidonde, WEDC, U.K.
[14] http://www.childinfo.org/eddb/sani/

menstruation or drop out at puberty because of lack of clean and private facilities[14].The low level of literacy among women, as a result of girls being pushed out, can aggravate prejudices based on inferiority and superiority complexes between men and women. In Mexico, when asked why the girls were cleaning the toilets and the boys were playing basketball, the teachers said, "Boys do not clean toilets in Mexico". (Source UNICEF 2002) By promoting girls' attendance and retention in school, the sanitation project influences sound cultural patterns of conduct in future.

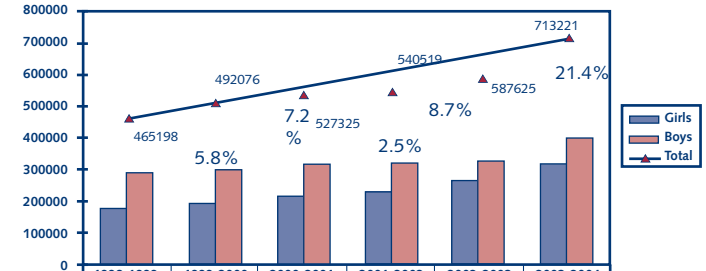
Some implications of a gender perspective

- separate toilet/urinal facilities for girls
- designs adjusted to different needs of girls and boys
- cleaning of facilities is shared by both sexes
- both fathers and mothers know about the SSHE programme
- education addresses sensitive aspects such as menstruation, initiation rites and sexually transmitted diseases

Good programming works:

- In Bangladesh, a school sanitation programme increased girls' enrolment by 11% (Source Cairncross 1998).
- First results of an assessment in 1,667 schools in Alwar[15] (India) demonstrate a synergy between good classroom practices and SSHE. Over five years an increased enrolment of girls by 78 % and boys of 38 % could be measured (see figure 8 below). Significantly higher learning achievements were measured in project schools. Further, it showed that a visible change in conditions at school improves community and parent participation.

Trends of Enrollment: Alwar District (Class I to VIII)



	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Girls	178503	196058	214613	226474	263264	317839
Boys	266695	296018	312712	314045	324361	395382
Total	465198	492076	527325	540519	587625	713221

Increase in girl's enrollment: 78%
Increase in boy's enrollment: 38%

Figure 8

[15] Results presented by Ms. Sumita Ganguly, UNICEF India, during her presentation at this symposium

[16] Layton, S. (2004), *Setting standards - children as ambassadors for change,* AT Project, Papua New Guinea, paper written for this symposium

[17] Verbal information provided by UNICEF representatives from India and Nepal at the symposium

4. The 'change agents' perspective

Organising children and teachers for cleanliness and good use of facilities is very important in each programme. But the need for cleanliness extends beyond toilets or school grounds.

A recent project[16] in Papua New Guinea showed the huge impact when using children as ambassadors for change in their families and communities. SSHE projects in India and Nepal also described the important role children can play in changing hygiene behaviour in their family and community[17].

5. The 'future impact' perspective

How long will children retain the knowledge, attitudes and skills on hygiene that they learn in school? In a study[18] on the long-term effect of hygiene education it was found that new behaviours do not necessarily fade as years go by and that it is not inevitable that people revert to less hygienic practices.

The research data demonstrated that hygiene behaviour is sustained beyond the end of an intervention. For the studies in five countries, 25 comparisons were made between hygiene behaviour and the end date of the project. The behaviours were: hand-washing skills, person washing hands with soap and water, location of soap/water in household, latrine showing signs of use, person using latrine consistently, latrine being maintained and cleaned, water covered/stored safely. The end dates of the projects under comparison were 1998 and 2000. In only 2 out of 25 comparisons did people practise safer hygiene behaviours in projects that ended in 2000 compared with projects that ended in 1998. This indicated that hygiene behaviours did not seem to deteriorate significantly over time.

For the study in India, women from the later projects were significantly more likely to wash both hands with soap and water and were significantly more likely to use the latrine when at home. In other words, hand washing and latrine use practice did seem to deteriorate with time. However, the fall-off was not very great. Even when projects had ended seven to nine years before the survey, about four out of five of the women (80%) were reportedly still consistently using their latrines.

[18] Results of a six country study in Ghana, India, Kenya, Nepal, Uganda and Sri Lanka, coordinated by IRC and London School of Hygiene and Tropical Medicine, financed by the European Commission and DGIS. To be published in Fall 2004.

Lessons learned and opportunities for scaling up

Based on the papers and presentations during the symposium (see annex A), lessons learned and opportunities created in SSHE have been identified. Main points from these are highlighted in this section.

Introduction to POSITIVE management

The subtitle of this Symposium was… *Construction is not enough.* Several nuances in the meaning of this came out during the symposium. It is tempting, given the current push in many countries toward high coverage of schools, to simply construct facilities in one school after another. Experience has shown, however, that such facilities will not be maintained, will deteriorate and will not be used as intended. Inevitably, the health and education impact will not materialise. What is needed is a balance between 'hardware' and 'software'. Hardware refers to construction of facilities in schools for drinking water, hand washing, going to the toilet. Software refers to a range of things such as: organising community groups, participation of teachers and parents, education and involvement of children, preparation of materials, training, tendering and control of finance, supervision and monitoring. All of these items, in short, are needed to ensure that facilities will be used and maintained, and that hygiene education will take place consistently.

It is easy for one, two or a small number of schools to have effective SSHE… but how can this be managed for 200 or 2,000 schools in a large area? What can we learn from current best practice about managing the scaling up of school programmes, while retaining quality? What inputs, precisely, are needed to create good programmes over larger areas?

Experiences shared in this symposium tend to focus on management from one perspective or another. Good or positive management is essential to achieve effective SSHE at a large scale.
P-O-S-I-T-I-V-E in this case is an acronym:

Policy and planning	Policy must be implementable and implemented. Coherent. High-level commitment.
Ownership	Ownership and participation by teachers, parents, children, and the education system, is key to success. Local 'motors' are needed such as school management committees and PTAs, although experience with such groups can be quite variable.
Supervision	Supervision is a catchall word that can include many activities. The important thing is that supervision continues to be effective beyond the end of the project, after construction.
Institutional setting	If possible, work through existing institutions, to ensure accountability by e.g. education, NGOs, programme personnel. Coordination and partnerships are needed at all levels.

Training and orientation	Training or orientation are also essential for teachers, for staff of education and public health engineering departments, for local government, parents and contractors. Participatory methods, joint planning and relevant materials are needed. Retraining is also needed!!
Institutional norms and designs	What about some tough issues? What about the teachers who lock up latrines because they want a toilet for their own use? Are school latrine designs relevant to the home? Are the designs child-friendly?
Very honest	Delays and loss of money undermine a community's sense of ownership. Timely and rational construction, including private sector involvement with community involvement are needed.
Education	Traditional lecture-memorisation approaches do not usually lead to behavioural change. Instead focus on values, self-management and mutual support. SSHE needs a clear position in the curriculum. Methods: participatory. Facilities must support education.

Policy and planning – evidence from the presentations

General and background presentations:
Vision building and policy development are crucial but need to be built on real experience. Where do we want to be 5-10 years from now?

Long(er) term commitment to develop methodologies, political will and policies, to show results: move away from ad-hoc projects.

Programmes need to operate at multiple levels: national/district level and local level; capacity building need to address all levels. Regional analysis shows that support in policy building is an absolute need.

Continued advocacy and lobbying for political support and commitment is vital.

India: Geography matters, or so say the exponents of Geographical Information System (GIS) being applied innovatively in one state in India, Tamil Nadu, for improving the school sanitation programme. Under this, spatial data maps for the villages were generated. For the first time in India, with UNICEF assistance, GIS was used to create water and sanitation facility mapping for schools focusing on five indicators: drinking water, toilet, water for toilet, washing and school sanitation and hygiene education training. This triggered significant changes in planning for SSHE. When the first GIS maps were displayed during a regional workshop, they shocked officials of the SSA and TSC as no district official had any idea about the coverage of water and sanitation facilities in schools. They started comparing coverage levels between different districts and decided to take up joint planning and use pooled resources. The data has been used to prepare district action plans for SSHE, jointly owned by the education programme for universal primary education and the total sanitation programme. Higher officials as well were sensitized to the ground level problems after looking at the GIS data.

Kenya: Evidence shows that a child-friendly school has positive effects on concentration, learning, and health. Thus, water and sanitation systems and school

planning should be integrated to reach education for all (EFA) by 2015. Water, environment and sanitation (WES) and education are Millennium Goals to be realised while protecting the environment. Schools can play a guiding role in creating awareness, understanding, and action on sustainable development, WES and health.

Swaziland: The study identified a set of critical concerns such as: Absence of water points and latrines in schools, lack of personnel qualified in hygiene education, lack of national policies on health education, and inadequate resources at schools, e.g. training equipment. Among the reasons identified for this state of affairs is the lack of importance placed on school sanitation facilities by national institutions and lack of harmony between what is taught at school and the realities of life in the home and community.

Swaziland and Uganda: SSHE needs to be implemented in an organised, step-by-step approach. In particular, construction of facilities should NOT come first. Training and community consultation are essential before construction, to ensure the facilities are built with relevant designs, in the right place and that they will be used and manufactured as intended.

Uganda: A Memorandum of Understanding (MOU) on sanitation was signed between three ministries; Ministry of Health (MOH), Ministry of Water Land and Environment (MWLE) and Ministry of Education and Sports (MOES) in December 2001. Specific areas of sanitation and hygiene promotion were: MWLE for planning investment in sewerage services and public facilities in towns and rural growth centres; MOH for household hygiene and sanitation; and MOES for school latrine construction and hygiene education.

Involvement of politicians in the sanitation program had resulted in better financial and construction accountability as well as increased implementation in some districts.

Ownership– evidence from the presentations

General: Intersectoral collaboration needs investment: right people at the right time and places: e.g. education meetings with investment banks, development of sector plans, etc.

India: Focus on schools as an instrument for lasting social change is critical. The India paper noted that despite the principles of non-discrimination enshrined in the constitution, caste is a part and parcel of life. However, under the SSHE, school students, irrespective of class, caste or gender are supposed to clean and maintain water and sanitation facilities created. Thus SSHE represents a potentially important avenue to address entrenched culture norms in schools of today so that the citizens of tomorrow may form a society with individuals who respect each other and preserve the environment.

Kenya: There was a lack of consultation and participation of communities. Top-down approaches were used in school planning, while innovative, culturally-fit and cost-effective school plans lagged behind. Plans from the 1970s and 1980s have not been adapted to improve on energy efficiency, cost effectiveness, aesthetics, flexibility and adaptability to suit current learning systems, and expectations of user comfort. Yet, the government acknowledged a need for better school environments. A Commission of Inquiry into Kenya's education system attributed declining standards in education in part to poor school environments [Koech DK 1999]. These barriers influence the

quality of learning and school environments. They are often interlinked. Analysing and solving them simultaneously requires coordinated efforts by multidisciplinary teams, and this is essential for child-friendly environmental school planning.

Somalia: Caritas Switzerland is successfully implementing the Children's Hygiene and Sanitation Training (CHAST) and Participatory Hygiene and Sanitation Transformation (PHAST) approaches in rural areas of Somaliland in combination with construction of school buildings and water and sanitation facilities. Other organisations are also implementing them in other regions and urban areas. Caritas implements CHAST in villages where community facilitators are also taking up PHAST activities with adult villagers, in order to create a bigger impact by working on parallel levels and in combination with hardware provision.

South Africa: Through the water education initiatives of the External Education Services Section, bridges of knowledge are being built and understanding between students and communities to ensure safer water for all in the future. Locally designed education resources enable students and communities to analyse the quality of their water, thus reinforcing concepts learned in the classroom, assisting in acquiring new skills and forging new links between the diverse communities found in Southern Africa. External Education Services promotes a spirit of water awareness and conservation for a brighter future.

Swaziland: It was noted that increasingly, communities are taking responsibility for improving and maintaining the school environment. This could be attributed to the fact that communities are becoming aware of the importance of education and of a healthy learning environment.

Uganda: Health clubs /committees have been set up in schools. In a survey done by RUWASA, it was reported that most schools (62.9 percent) had set up health clubs and parents were participating to a greater extent in school sanitation issues. Weekly health parades have increased in all schools to promote good personal hygiene.

Supervision – evidence from the presentations

India It is very important to have personnel whose work is focussed on SSHE, not merely as a part-time effort. For this, in India, the national Total Sanitation Programme provides financial support for at least one person exclusively dedicated to SSHE programmes in each district.

India (WASH): The environmental health interventions are regulatory in nature, and benefits accrued are indirect. They are exclusively preventive and benefits can be realised over a long period. The environmental health interventions also potentially convey considerable non-health socio-economic benefits. The WASH Campaign is now in full swing. Very good responses have been received from all stakeholders.

Uganda: In general, there was insufficient monitoring and supervision at the national level. The monitoring and evaluation unit in the Directorate for Water Development developed a set of survey tools for WES management information system in 1998. Although these are very comprehensive tools, their efficient and effective use needs to be reviewed. Monitoring checklists at schools were effective but time consuming. Sufficient feedback needs to be ensured so that appropriate actions are taken.

Institutional Setting – evidence from the presentations

General: Building on local experience and strengthening partnerships are crucial to leverage of resources and to scaling up. It should be noted that the problems of SSHE are generic but the solutions are not. It is therefore not necessarily a question of applying the same approach in different areas. We must continue to learn from past and present experiences, to reflect on these experiences and to use them to improve programmes now and in the future.

India: For children and for some teachers, the SSHE programme is their introduction to the consistent use of latrines, cleaning toilets and to washing both hands with soap afterwards. This challenge is at the same time an entry point, because the SSHE programme, which by its nature is rather popular, can also serve, and is serving, as an entry point for improving sanitation and hygiene within the family and community. Thus, the SSHE programme in India has been linked with broader sanitation drive. In fact, SSHE has become an entry point in many places to mobilise support and demand for household and community sanitary facilities.
Inter-sectoral coordination is essential at all the levels. The Department of Drinking Water Supply supports SSHE through its rural water supply and total sanitation campaign, which are major national programmes. They have taken several initiatives for coordination with the concerned departments such as Department of Elementary Education & Literacy, Department of Health, Department of Women and Child Development, Ministry of Tribal Affairs, Ministry of Social Justice and Empowerment. They also link with the national initiative that aims to universalise elementary education in the country.

Somalia: At the moment the Children's Hygiene and Sanitation Training (CHAST) approach differs from the teaching methodology commonly used in Somali schools. Although the CHAST approach is fundamentally different from that of Participatory Hygiene and Sanitation Transformation (PHAST), it initially calls for trained facilitators to introduce its sessions to Somali children. Negotiations are currently ongoing with the Ministry of Education in Hargeisa, Somaliland, and UN agencies for the incorporation of CHAST tools into the formal primary school curriculum.

Uganda: The School to Home Approach, if explored further, will help to prevent water and sanitation-related diseases by concretising the SSHE acquired at school, to enhance Participatory Approaches in Hygiene and Sanitation (PHAST) that can lead to sustainable change in healthy behaviour of children both at home and school. The distinct role played by NGOs, as independent commentators on development, needs to be recognised, valued and strengthened by donors. Strong partnerships/networks are needed among NGOs and the government sharing common interest to improve SSHE. There is need for joint planning with all stakeholders.

Training and capacity building – evidence from the presentations

India: It is challenging to ensure adequate planning of SSHE activities. This is primarily because of absence of orientation and training on SSHE interventions. Adequate capacity building and training of manpower involved in the SSHE implementation is required, which calls for an increase in and improved training programmes for effective and focused implementation. These challenges have been a part of the concern for the government. For instance, to help states and districts to plan the implementation of the SSHE programme, two electronic planning templates (Project Implementation Plan at

district level and State Action Plan) have been developed and shared with the implementing agencies. Technical support has been provided through publications, and regional level resource centres provide training for SSHE. In many states, state and district level resource centres have been identified and are being developed to further support the capacity building.

South Africa: Environmental educators need to do away with the old approach where the educators will come up with what they think the problem is or the needs of the community. People need to identify problems themselves and relate it to their local environment. The same approach may be used with students.

Swaziland: One major constraint is that teachers almost never receive adequate training in hygiene education. Secondly, hygiene education has no specific slot in the curriculum and is not adequately addressed through other subjects. The third problem that hampers effective hygiene education is lack of appropriate teaching methodologies and materials at teachers' disposal. Teachers also encounter difficulties because the hygiene behaviours that they teach cannot be applied within the school, because of a lack of sanitary facilities. A hand-washing lesson has little impact when no hand-washing facilities are available.

Institutional norms and designs – evidence from the presentations

General: (1) There is a need to explore child-friendly technological options and those that give choices to schools. (2) Facilities for disabled children should be installed in all schools. (3) Facilities should be planned for teachers, so that they can to assume their responsibilities as role models.

Kenya: Correlations were found between student ill-health and adverse environmental conditions: flooded schools; excessive noise (traffic, industry); excessive odour (dumps, industry); solid/ fluid waste (small enterprises, sewers); polluted rivers (toxic waste); poor school conditions; and poor municipal services. Adverse environmental conditions often occur in combination with poor sanitation and water from unclean sources (water vendors). Information about sustainable construction and design is not available. Developing pilot schools may increase understanding of such technologies by communities. Introducing and using sustainable building materials will depend on their ease of maintenance, affordability, durability, availability, and appearance being equal or comparable to conventional materials already used. Guidelines about such criteria should be clear.

Papua New Guinea: Most current toilet facilities are a health risk, and students who use them believe that these toilets are the norm. This has a negative impact on their understanding of health and sanitation standards.

Uganda: As in Papua New Guinea**,** if toilet facilities are a health risk, students believe that they are the norm and this has a negative impact on their understanding of health and sanitation standards.

Very honest – evidence from the presentations

General: Financial transactions in SSHE relate to tendering and construction as well as to the collection and use of funds for recurrent expenditures such as soap, cleaning materials, etc. These financial transactions must be transparent and honest. The credibility of the whole SSHE programme in the school is at stake.

South Africa: A very honest assessment highlighted a number of problems that made it difficult for an outside educator to work with students, and these will be taken into account in future campaigns. Sharing information about problems was a courageous example towards creating greater transparency. Problems included: (1) Appointments were made at schools, but on arrival neither the principal nor the key contact teachers were available. This resulted in delays. (2) Lack of commitment from the teachers. On arrival at a school, students are not ready, and only then will start cleaning and setting up the venue/hall. This delays the programme. (3) Time allocated by the principal with students is not enough to cover the ground, so that it is difficult to engage students in activities like PHAST tools. (4) At some schools, the pupils are forced into a small hall, resulting in overcrowding, and pupils not being able to see the video adequately.

Education – evidence from the presentations

India: Hygiene education, which is a very important component to change behaviour, remains a problematic area in many states, if it is not given a prominent place in programme implementation. There have been many initiatives to improve the focus on hygiene education. The Department of Elementary Education has agreed to incorporate hygiene education in the teachers' training programme conducted every year. The national educational research/training agency (NCERT) has taken a pro-active role in developing the curriculum on hygiene education. The national Total Sanitation Campaign has also earmarked separate funds for hygiene education.

Somalia: Children's Hygiene and Sanitation Training (CHAST) is based on the well-founded premise that personal hygiene practices are usually acquired during childhood – and that it is much easier to change the habits of children than those of adults. Because the Participatory Hygiene and Sanitation Transformation (PHAST) approach was initially designed for adults, it has been carefully revised and adapted to suit the needs of young children. While children have less knowledge and experience, fewer responsibilities and a different conception of time and the future, they are also naturally inquisitive and eager to learn. The CHAST approach takes advantage of these natural attributes. In the CHAST exercises, children are encouraged to work independently in pairs or in small groups, and then to present their thoughts and findings to the larger group. Above all else, CHAST tools are meant to be fun – involving games, exercises and role-plays that prompt the children to discuss and genuinely understand the key issues related to personal cleanliness and hygiene.

South Africa: This is an example of the methodology used in the classroom. Learners are involved in group discussions that focus on various water issues like water supply and treatment, pollution, sanitation, health and hygiene, water borne diseases and conservation. There is recognition of prior knowledge. Guided questioning is used to find out what learners already know, to stimulate discussion and to find solutions to problems. These discussions are supplemented by the water education videos. Due to time constraints, copies of worksheets and other activities are sent back to school with

the educators. Educators use the visit to the classroom either as preamble to their lessons on water or to conclude/round up the theme. The highlight of the visit is the tour around the waterworks. This offers a very practical, hands-on approach and learners acquire a better understanding of the purification process, as well as why it is important to pay water bills.

Our message: SSHE Framework for Action

Based on the lessons learned and opportunities found while developing SSHE projects, the symposium participants developed a Framework for Action highlighting the road to be followed for the way forward in SSHE. The full text of the Framework of Action is shown on the following pages.

The Delft SSHE Framework for Action

School Sanitation and Hygiene Education Symposium
The way forward: Construction is not enough!

INTERNATIONAL SYMPOSIUM, 8-10 June 2004, Delft, Netherlands

School water, sanitation and hygiene education (SSHE) appear in the commitments and investments of governments as well as international agencies and are relevant to international charters such as:

- Millennium Development Goals
- Johannesburg Plan of Implementation
- Convention on the Rights of the Child
- International Decade on 'Water For Life', 2005-2015
- Dakar Framework for Action - Education For All: Meeting Our Collective Commitments
- Vision 21 – Water for People
- United Nations Decade of Education for Sustainable Development (2005-2014)
- ECOSOC Programme of Action for the Least Developed Countries (2001-2010)
- United Nations Commission for Sustainable Development CSD–12 (2004)

As a reflection of the growing body of experience and recognition for SSHE, an international symposium entitled *School Sanitation and Hygiene Education Symposium; The way forward: Construction is not enough!* was held from 8 through 10 June in the city of Delft, the Netherlands. Leaders and representatives from all sectors – governments, foundations, non-governmental organisations, research and multilateral organisations - from 20 countries came together for the SSHE symposium. They reviewed experiences and identified principles and strategies for further action that can help ensure effective SSHE. One focus of the work was how to scale up SSHE while retaining quality.

This *Framework for Action* presents the conclusions and recommendations of the symposium about effective SSHE and how to achieve it.

Benefits from effective SSHE programmes

Evidence of past decades shows that water, sanitation and hygiene education in schools can contribute significantly to development. In particular, SSHE can:

- contribute to improved health, nutrition and learning performance of children;
- contribute to increased school enrolment and attendance, particularly of girls, when the school environment is safer and healthier for all children;
- lead to sustained good practices with regard to hygiene and sanitation because new behaviours developed in schools can continue over a number of years;
- improve sanitation, environmental and hygiene practices in the community;
- strengthen cooperation among local institutions and through this, support sustainable development.

Thus, SSHE can help achieve the Millennium Development Goals (MDGs) for education, water, sanitation, child protection, gender equity and health.

Lessons from experience

Major lessons drawn from existing experiences with school water, sanitation and hygiene education programmes are:

Partnerships are critically important. Donors, governments, NGOs and communities and their schools must work together. Building agreement with people and their institutions is crucial. This includes agreement about the purposes of the programme, its objectives and methods, the roles and responsibility in SSHE.

In order to succeed, the school programme must be part of the overall community sanitation and educational development programme. At the same time, SSHE needs relevant policies, adequate water/sanitation facilities and support from health services. Policy building can only be based on the ground experiences.

Programmes must be systematically planned and implemented with a road map that defines capacity building, processes, milestones and strategies for scaling up. At the same time, programmes must be flexible. Some important lessons learned about planning and implementing programmes are:

- It is essential to balance hardware and software in a step-by-step approach. There is, however, no single, fixed formula (hardware or software). Planning and implementation need to start from local reality, with the capacity to test and adapt both designs and methods.
- Local government leaders, community members, parents, teachers must be involved. Boys and girls can be active in promoting school and community hygiene improvement and environmental issues.
- Capacity building is needed at all levels.
- Hygiene education should be part of the overall school health curriculum. Experience has shown that successful hygiene education leads learners to develop and maintain specific new health behaviours. For this to occur, learners must develop not only knowledge, but also relevant attitudes and skills. Life skills-based health education, which seeks to develop a range of cognitive, personal and interpersonal skills, is more effective than education that focuses too narrowly on the provision of information alone. This approach to hygiene education goes beyond traditional, lecture-based education to incorporate learning experiences that are child-centred, participatory and interactive.
- Child-friendly designs and cost options are critical factors for achieving minimum standards and functional systems. Designs and technologies need to be tested.
- Operation and maintenance of facilities as well as provision for replacement costs and repair responsibilities need to be thought through right at the start. All children can effectively help to maintain the facilities which they use. This requires appropriate planning and organisation through teachers supported by education system and community.

In general, there is large body of experience to learn from in SSHE. Continuous learning and sharing are essential.

Principles for action

The symposium confirmed a set of basic principles for effective school water, sanitation and hygiene education programmes. These principles are framed as guidelines for SSHE programme development:

Scaling up with quality: Countries must pilot at appropriate scale, learn in an action-research mode, and, right from the start, build in the expansion of the programme. Momentum between a pilot and large scale programming should not be lost. Keys to scaling up with quality are sustainability, decentralisation, participation, partnership and policies. Flexibility of approach should not be lost in scaling up. Effective monitoring systems (such as self monitoring and participatory monitoring) can help ensure flexibility and quality.

Policy: Scaling up can succeed only with the support of national and sectoral policies. Long-term resources, both financial and human, need to be allocated for SSHE to ensure that all groups, rich and poor, can benefit. Policies need inputs from practitioners rooted in ground realities and there must be mechanisms to ensure that such practitioners are part of policy-making processes.

Partnerships: Partnership and systematic planning are needed for:

- coordination
- systematic implementation
- keeping minimum standards
- ensuring the appropriate combination of software and hardware

Multi-stakeholder involvement is crucial to successful scaling up: Roles of the stakeholders (the government departments, non-governmental and community-based organisations, institutions, private sector) should be agreed, clear and operationalised. A clear plan is needed for an integrated approach, for example, by setting up multidisciplinary teams with people such as educationists, water/sanitation specialists, community organisers, architects, planners, economists. Effective private-public partnerships can help carry out the programme and reach the poorest. SSHE programmes should link community partners to reach all children in/outside of school.

Advocacy/Information: Each SSHE programme needs an advocacy and information sharing plan based on existing experience and information. Advocacy is needed at all levels.

Capacity building, like advocacy, is needed at all levels and includes but extends beyond training. It includes the development and operationalisation of plans for strengthening school personnel and institutional capacities. The people and institutions involved must be encouraged and able to use the new skills and attitudes deriving from capacity building. All teachers need to be trained in participatory and skills-based teaching methods; while evaluation information about the effectiveness of particular participatory methodologies is also needed.

Community water and sanitation: Schools programmes should be developed in the context of the overall community water and sanitation programme. The synergies between these can be used to advantage. Thus, school programmes can help improve conditions and practices in the home and community. Community-based water and sanitation initiatives can support facilities and activities in local schools.

Annex A: Papers and presentations prepared for the symposium

All the relevant papers and presentations prepared for the symposium are included, although some authors were not able to participate and present. The whole set of papers is also on the SSHE symposium CD ROM provided to all symposium participants and can be downloaded from www.irc.nl.

Global:

- Keynote. The way forward; opportunities and lessons learned - Ms. Kathleen Shordt, IRC (only available in PowerPoint on the webpage)
- Scaling up school sanitation and hygiene promotion and gender concerns - Ms. Rose Lidonde, WEDC, UK
- Water, sanitation and hygiene in schools: Developments from a global perspective - Ms. Lizette Burgers, UNICEF-New York, USA (only available in PowerPoint on the webpage)
- Fresh initiative: Focusing resources on effective school health - Ms. Celia Maier, Partnership for child development, UK (only available in PowerPoint on the webpage)
- Joyful learning-Participatory Education Activities for Children and Educators (PEACE) - Ms. Christine van Wijk, IRC, The Netherlands (only available in PowerPoint on the webpage)

Country-related:

- **India:** SSHE in India: An investment in children. Ms. Sumita Ganguly, UNICEF-New Delhi, India
- **India**: WASH campaign in Kerala- a holistic approach for the reduction of infant and child morbidity - Dr. M.K.P.Roy, Centre for Community Health Research, Kerala, India
- **Kenya**: Integrated water, environment, and sanitation management for community-based, participatory and sustainable school planning: The case of Nairobi, Kenya - René John Dierkx, Eindhoven University of Technology, The Netherlands
- **Nicaragua:** Friendly and healthy school initiative - Mr. Felíx Hernandez, Ministry of Education, Nicaragua (only available in PowerPoint)
- **Papua New Guinea:** Setting standards - Children as ambassadors for change - Steve Layton, AT Project, Papua New Guinea
- **Somalia:**
- CHAST (Children's Hygiene And Sanitation Training) in Somalia - Ms. Esther de Vreede, Caritas Switzerland
- Key challenges and possible solutions on SSHE - Safia Jibril Abdi, UNICEF Somalia
- **South Africa:** Sanitation, health and hygiene education to enhance the quality of life: The Ozwathini Case - Ms. Sunita Doodhnath and Ms. Penny Gumede, Umgeni Water, South Africa
- **Swaziland:** Primary school baseline study on water supply, sanitation and hygiene education in Lubombo and Shiselweni Regions of Swaziland - Lessons learned - Ms. Poppy Dlamini and Ms. Khanyisile Mabuza, Umgeni Water, South Africa
- **Uganda:**
- Cross- transfer of school sanitation and hygiene education to communities - Mr. Walugendo Kyesa Sulaiman, Uganda Muslim Rural Development Association (UMURDA)
- CEI experience in closing the gap in school sanitation and hygiene education: Case study of Mable Parish, Nkoma sub-county, Kamwenge District, western Uganda - Mr. Kisembo Asuman, Community Empowerment Initiative (CEI), Uganda
- **Zambia:** Fresh initiative: Focusing Resources on Effective School Health - Ms. Celia Maier, Partnership for Child Development & Ms. Cindy Joerger, UNESCO

Scaling up school sanitation and hygiene promotion and gender concerns

Rose Lidonde
GWA & WEDC, UK

1. Why gender dynamics are important in school sanitation and hygiene promotion (SSHP)

School children suffer from poor sanitation facilities

Poor sanitation in schools impairs child growth and development. It also limits school attendance and retention of students and negatively affects a student's ability to concentrate and learn. About 40 percent of the world's 400 million school-age children are infested with intestinal worms. About 1 in 10 school-age girls do not attend school during menstruation or drop out at puberty because of lack of clean and private sanitation facilities. Of all the children between the ages of five and fourteen in the world, 87 percent live in developing countries. For these children, the risk of death is now fourteen times higher than for children of the same age groups in the industrialised countries. That risk can be reduced enormously when children stay in a healthy environment and get used to practising good hygiene both in and out of school (WHO 1995).

A survey carried out in India among school children, revealed that about half of the ailments found were related to unsanitary conditions and lack of personal hygiene (UNICEF and IRC 1998). A study in over 5000 schools in Senegal showed that 53 percent had no water supply and 46 percent had no sanitation facilities, and only half of the schools had separate facilities for girls and boys (Republique du Senegal and UNICEF 2002).

School sanitation and hygiene programmes provide good opportunities to practice gender equality.

This can be through sharing of health knowledge and through the division of tasks. Much can be done in this respect. The examples cited here will be of no surprise to many schools.

A school survey in Senegal found that boys cleaned the schoolyard and girls the toilets. Because cleaning was done only once a week the latrines were very dirty. The girls explained that this was why they did not use them and why their mothers warned them not to. To avoid the need to use the toilets they tried not to drink during school time.
In Mexico, when asked why the girls were cleaning the toilets and the boys were playing basketball, the teachers said, "Boys do not clean toilets in Mexico." (Source UNICEF 2002)

What do we mean by gender?

Gender is not about women and girls only. It is an issue concerning boys, girls, men and women, not in connection with sexual differences but with the socially and culturally determined differences between women and men. People make these

differences and therefore they can, and do, change. Particularly in personal hygiene and sanitation habits, needs and demands, women and men, adolescent boys and girls differ. Therefore, gender mainstreaming involves assessing all the implications that any sanitation and hygiene intervention can have for women and men. These differences need to be reflected in relevant policies, strategies and approaches that promote improved sanitation and hygiene behaviour.

2. Rationale for school sanitation and hygiene promotion

- **Sanitation is a basic human right:** The Convention of the Rights of the Child (CRS), which has been ratified by most countries of the world, states that children have a right to a safe environment for enhanced learning, health and development of good citizens.

- **Schools provide an excellent opportunity to create life-long changes in behaviour:** Students spend on average 180 days in school, eight hours a day, each year. Apart from the family environment, schools are the most important places of learning for children. Childhood is also the best time for children to learn hygiene behaviours. What children learn in primary school is likely to be applied for the rest of their lives.

- **Targeting children as change agents:** What children learn at school they can transfer to their homes and communities and to other children at home who are unable to go to school for various reasons. These children will later become parents and will be duty-bound to provide a safe and clean environment for their own children's development. If children are brought into the development process as active participants they can become change agents within their families and catalysts for community development.

- **Improved hygiene and sanitation is critical to the health of school children and the community at large:** In reality schools are often more than just places for learning and behaviour change. If school sanitation and hygiene facilities are absent, or are badly maintained and used, schools become a health hazard. During the 1997-98 cholera epidemic the Ugandan government spent 4.3 billion Ugandan shillings (US $23 million) in health care costs. The schools rapidly became a place for disease transmission and 560 schools had to be closed due to the lack of adequate and acceptable facilities.

- **School dropout and low literacy rates, especially among female children, can frequently be attributed to poor sanitation and health conditions in schools:** Girls, who are already marginalised in accessing education, keep suffering because of inadequate sanitation facilities that allow them no privacy, especially during their menstruation period. The lack of private sanitary facilities for girls discourages parents from sending girls to school, contributes to the drop out of girls at puberty and is a contributing factor to the production of fewer women teachers - the teachers most needed and best placed to encourage girls to attend school. The low level of literacy amongst women, as a result of girl drop-out, aggravates prejudices based on inferiority and superiority complexes between men and women. By promoting girls' attendance and retention in school the sanitation project instills sound cultural patterns of conduct for the future.

- **The school sanitation project offers opportunities for participation:** It has other socio-economic advantages such as empowerment, independence, decision-making, self-reliance, confidence building, creative development, life skills development and sustainability.

Unfortunately, the promises of school health and hygiene programmes have not always been fulfilled. In many countries schools are not safe for children. Many schools suffer from:

- non-existent or insufficient water supply, sanitation and hand-washing facilities;
- toilets or latrines that are not adapted to the needs of children, in particular girls;
- broken, dirty and unsafe water supply, sanitation and hand-washing facilities;
- children with poor hygiene habits and hand-washing practices;
- non-existent or irrelevant health and hygiene education for children;
- Unhealthy and dirty classrooms and school compounds.

Under these conditions schools become unsafe places where diseases are transmitted. Poor health affects a child's ability to learn and therefore influences their prospects in life. School sanitation and hygiene is therefore a worthwhile investment for many reasons. In fact, water-related diseases caused an estimated 3.4 million deaths in 1998 alone (see box below). It is worth noting that the majority of those who died were children.

Box 1: Data on water-related mortality

Disease	Deaths (000)
Diarrhoeal Diseases	2,219
Malaria	1,110
Trypansomiasis	40
Intestinal worm infestation	15
Dengue	15
Schistosomiasis	7

Source: WHO, 1999

3. Results and impacts

A joint study on school sanitation and hygiene promotion in Uganda, undertaken by the Water and Sanitation Program - Africa Region, UNICEF and NETWAS (2000), confirmed the following:

- That where hygiene and sanitation promotion has been undertaken actively in schools, there are high levels of pupil knowledge of hygiene and sanitation issues, with the main source of information being the schools. However, translation into behaviour still remains too low and does not always show significant results. In all the schools visited the pupils were generally clean and those interviewed were aware of the problems associated with poor sanitation and how to improve on the school environmental sanitation. In addition, hygiene knowledge was very high, although practice was still low.

- Health clubs/committees have been set up in schools. In a survey done by RUWASA it was reported that most schools (62.9 percent) had set up health clubs and parents were participating more in school sanitation. Weekly health parades have now increased in all schools to facilitate personal hygiene inspection and education. This helps to promote good personal hygiene.

- The teachers also reported some linkages to and impacts on the surrounding community. They said that, if they observed pupils with problems, like always being

dirty or with jiggers and lice, they investigated further by going to the family home. Very often they could link what they had seen to poverty in the home or to a weak family structure (old grand parents, for example).

- It was also established that districts and sub-counties were now beginning to plan and budget for sanitation from their own resources. This shows that they are beginning to appreciate the importance of sanitation.

- Involvement of the politicians in the sanitation programme had resulted in better physical and financial accountability as well as increased implementation in some districts.

- Some districts had gone ahead to recruit more staff and to fill in vacancies of health and community development staff so as to give more support to water and sanitation development.

- Communities had been mobilised to play their roles as was evidenced by the contributions that they had made towards the construction of latrines. It must be said, however, that some communities contributed unwillingly or often not at all as they had a different perspective/understanding of their responsibilities in the school activities.

- In general there was insufficient monitoring and supervision at the national level. The Monitoring and Evaluation Unit in the Directorate for Water Development developed a set of survey tools for WES Management in 1998. It is a very comprehensive toolset but its efficiency and effectiveness needed to be reviewed. The monitoring checklists at the school level, although effective, had proved to be time consuming. When used, there was insufficient feedback for appropriate actions to be taken.

- Integration between software and hardware components existed but priorities and resources were still skewed towards hardware activities such as latrine construction and borehole drilling. Funds were focused on tangible, physical outputs whereas software activities that could rarely claim physical outputs in the short run were not a priority in terms of resource allocation

- It was apparent that integration becomes difficult when hygiene lessons on sanitation are given, but the school does not have the required facilities. For example, many lessons emphasised the importance of washing hands but most schools don't have water nearby. In most schools water for drinking was not available, let alone for washing hands, because very few schools had water within a reasonable distance (0.5 - km). Others had latrines that are very dangerous structurally and hazardous hygienically. So messages such as 'use the latrine' become difficult to translate into practice. Similar problems are seen where there are hardware installations without supportive software inputs. For example, many schools had hand-washing facilities locked up because they failed to understand the value of washing hands.

4. Lessons learned

Lessons extracted from experience of promoting school sanitation and hygiene improvements:

- High levels of pupil knowledge of hygiene and sanitation issues does not ensure changes in behaviour

- Sanitation and hygiene promotion messages should not focus on health benefits alone. There is also need to promote values of self-esteem, recognition and accepted status in the society.
- Schools have to be considered in a holistic perspective, where classrooms, urinals, latrines, hand-washing facilities and water supply sources are all classified as sanitary requirements.
- Regular supervision, follow-up and monitoring is essential for proper operation and maintenance.
- Gender sensitivity is essential when implementing school sanitation and hygiene activities.
- Follow-up and supervision is necessary for the progress of activities and for ensuring that the teachers applied the participatory tools that they used during training.
- Working through existing institutions rather than creating programme-specific structures ensures ownership, capacity and sustainability of the activities. Institutions that exist are more legitimate because they have statutory powers and are governed by the laws of Uganda. This makes them more accountable and reliable.
- There are too many players involved in sanitation, leading to weakness in coordination and assumption of responsibility.
- There is a need for a decentralisation of resources. Resources are not reaching the intended beneficiaries in the amounts expected to make a difference. There is need to further decentralise resources so that they can move from the district level to the sub-county.
- Training of teachers should include at least one female teacher in each school, as they are needed to encourage girls to attend schools.
- It is crucial that the schools, the students, school management teams and teachers, especially head teachers, are all willing to take part in the project.
- High-level political commitment, established through advocacy, is key to successful implementation of SSH interventions.
- Political interference in the tendering process results in delays and adversely affects quality control.
- Participation ensures the relevancy and sustainability of project activities. Communities should contribute in whatever way they can to the acquisition of new sanitation facilities.
- Monitoring and evaluation tools in the school should be simple and quick to use.

5. Scaling up/the way forward

There is already enormous experience in SSHP and a lot of literature on SSHE from specific projects, which deserves to be reviewed. The issue here is not to reinvent the wheel when determining strategies and institutional options. Useful information already exists and lessons have been learned regarding the institutional, organisational and technical issues.

It should be noted that the problems of SSHE are generic but the solutions are not. It is therefore not necessarily a question of applying the same approach in different areas. We must continue to learn from past and present experiences, to reflect on this experience and to use it to improve programmes now and in the future.

The following recommendations are appropriate to improve current school sanitation and hygiene promotion:

Advocacy:

- Continued advocacy and lobbying for political support and commitment is vital.
- Increased sector partners support for school sanitation programmes is needed if coverage is to be realised.

Hardware and technology options:

- There is a need to explore technological options that could be more child friendly as well as giving choices to schools.
- Implementation of technologies for the disabled children in all schools should be organised.
- Physical facilities should be planned for teachers, in order for them to properly assume their responsibilities as role models.

Integration of software and participatory approaches and gender concerns:

- Sanitation software should be prioritised at all levels. Behaviour change calls for more application of participatory approaches. Continual reinforcement of hygiene messages is expected to change behaviours. Target specific practices that people are likely to change.
- Diversification of approaches and targeting of various gender groups is required to promote and sustain good use, operation and maintenance of facilities. This means training more teachers as well as school management committee members and prefects on increased use of participatory approaches for attitudinal and behavioural change for improved hygiene and sanitation practices.
- Recognise that changing practices depends on a complex set of social and psychological factors. Hence it is important to take into account gender, ethnic, class, religious and other social, economic and cultural differences that might facilitate/inhibit behaviour change/practice.
- Involve both boys and girls, of different age groups or classes, and male and female teachers, in planning, implementation and evaluation of the SSHP.

Capacity Building:

- Start on a pilot and, drawing from experience and ownership of the process by various stakeholders, move to scale.
- Find a balance between the 'hardware' and 'software' aspects of SSHE.
- If increased coverage and sustainability is to be realised, build the required capacity of staff and management (with a special focus on the female teachers but without necessarily increasing staff workloads) to enable the organisation of the SSHP. More work on the syllabus, to include gender issues and concerns to be emphasised. For example, some books depict cleaning activities as roles for girls only. In addition, some messages are incomplete, like hand washing, which leaves out the emphasis on soap.
- Mechanisms (such as school competitions, health clubs, follow-up on students' body cleanliness and hygiene practices) to ensure that the students adopt improved hygiene behaviours in schools and at household level, should be promoted.
- Apply a multi-sectoral approach where education, nutrition and health are linked to water supply and sanitation in order to enhance impact. A school sanitation programme provides one of the ideal and rare opportunities for different departments to learn about each other's systems. It may positively affect the way they work.

Monitoring and Evaluation:

- Development of simpler monitoring checklists and ensuring quality control mechanisms are established at all levels.
- Account for inputs and outputs of the SSHP.

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SSHE in India: Scaling up with quality

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1. Indian national programme

Schools, after the family, have a vital role to play in supporting the cognitive, creative and social development of children. The school is an essential platform to help children grow up in a safe, fair and healthy environment for learning and facing the challenges of future life. The school is a basic socialising institution that should provide a stimulating learning environment for positive development and life skills. A school should also address the health issues of children and have the necessary infrastructure in place.

As part of the effort to ensure that this happens in practice, the Government of India has launched a programme to bring water, sanitation and hygiene education to all rural schools, and to provide basic sanitation and drinking water facilities in each school. The SSHE programme in India is an important component of the national reforms in rural water and sanitation. Many of the challenges that the programme in India faces are similar to those faced in other countries. Sharing the particular approaches being developed to address these challenges may offer insights and serve as a starting point for the sharing of experiences during this SSHE symposium.

2. Introduction: size and diversity

India, as you know, is one of the largest countries in the world with about 1000 million people. The two largest of the 21 states in the country have populations comparable with those of the 5th and 6th largest countries in the world. We have 13 official languages, each of which is spoken by at least 30 million people.

The primary education system in India is, therefore, also one of the largest in the world, with over 630,000 rural primary and upper primary schools, over 3million teachers and a student strength exceeding 100 million. (Rajiv Gandhi National Drinking Water Mission, 2004). There are more than 300,000 Integrated Child Development Service centres in India, offering a package of health, nutrition and non-formal pre-school services to more than 18 million children aged 3-5 years. These statistics give some idea of the magnitude of the Indian programme for school water supply, sanitation and hygiene education.

In 1998 about 75 out of 100 children aged 6-14 years attended primary schools in rural areas. However, these averages disguise a highly diverse situation. In some states the enrolment of children is around 100% and overall literacy above 80%. In other states primary school enrolment is around 60% and literacy overall is less than 40%. It is necessary to keep this diversity in mind in order to understand the school programme which our nation has launched.

The challenges are substantial. According to the Fifth and Sixth All India Educational Surveys, the percentage of schools with safe drinking water facilities had dropped slightly between 1986 and 1993 (from 46% to 44%). Thus, fewer than half the schools had safe water facilities and, in 1998, only slightly more than 1 in 10 schools in India as a whole, had a lavatory. In rural schools this figure fell to around 1 in 20. (Kohli, 2001, RGNDWM, 2004, SWASTHH workshop, 2001).

One other challenge also provides an interesting opportunity for SSHE programmes. Only about 36% of the total population of the country have latrines within their households or compounds. In rural areas the figure falls to around 22%. The implication is that, for children, and for some teachers, the SSHE programme will be their introduction to the consistent use of latrines and to the practice of washing both hands with soap afterwards. Thus a school programme often introduces concepts and practices not yet common in most homes. This challenge is at the same time an entry point, because the school water, sanitation and hygiene education programme, which by its nature is rather popular, can serve as an introduction to improving sanitation and hygiene within the family. Rural school sanitation is seen as an entry point for wider acceptance of sanitation by the rural people.

The Indian SSHE programme aims to promote sanitation and hygiene in and through primary schools, to bring about behavioural change that will have a lasting impact. It also seeks to enable children (both girls and boys) to realise their right to basic education and to a healthy and safe learning environment. The hardware components of the programme include provision of drinking water, and hand-washing and toilet facilities in and around the school compound. The human development components are the activities that promote healthy conditions within the school and hygienic practices amongst the children, as an aid to preventing water and sanitation-related diseases and worm infestation.

School sanitation and hygiene education depends on a process of capacity building around a large range of actors: teachers, education administrators, community members, village/ward water and sanitation committees, public health engineering and rural development departments, District and Gram Panchayats, NGOs and CBOs. It seeks to use water-sanitation-hygiene learning as a bridge linking children, their families and their communities.

3. Institutional setting

The SSHE programme in India is being developed at a time when there is a major national movement toward decentralisation and devolution of responsibility for planning and implementation of basic services (including education, water and sanitation) to the district and community levels. This has been embodied in the 73rd amendment to the Indian constitution, called the Panchayati Raj Act. The SSHE programme fits well within the spirit of this act, with its focus on community management of schools and their facilities.

There are, in addition, two major national reforms taking place that are highly supportive to SSHE. The first of these is an education reform that was initiated as a project in 1994 (called the District Primary Education Programme - DPEP) in 176 districts within 15 states. It is one of the largest education projects of its kind in the world. It has subsequently been followed with an ongoing government programme called the Sarva Shiksha Abhiyan (SSA). Both programmes aim to institute universal elementary education in the country by 2010, through district-specific planning with an emphasis on decentralised management and capacity building. Both programmes have highly positive features that can facilitate SSHE programming. They include, among many reforming features that can be supportive to SSHE activities: the establishment of block and cluster resource centres that facilitate academic interaction among teachers; involvement of NGOs to strengthen community-based approaches and for monitoring; support for training institutions. In addition, both SSA and DPEP include the provision of adequate infrastructure in schools, including toilets, drinking water and so on.

The second major national reform that has a direct and positive influence on school sanitation, water and hygiene education is the Government of India's Central Rural Sanitation Programme – the Total Sanitation Campaign (TSC). The TSC encourages construction of school toilets in government schools and nursery schools. More than 350 of the country's 450 districts have already received funding for the TSC programme. The TSC is coupled to a reform for the provision of drinking water under the leadership of the Rajiv Gandhi National Drinking Water Mission in the Department of Drinking Water Supply, Ministry of Rural Development. Under this central leadership the programme is implemented through the state, district and local governments. The Department and Mission are responsible for formulating sector policies, strategies and approaches, and for fund allocation and ensuring coordination with other ministries and departments. School and nursery school programmes for water supply, sanitation and hygiene education have been given prominence in the Rajiv Gandhi National Drinking Water Mission (RGNDWM), being provided with subsidies for facilities[1] as well as for software activities such as group mobilisation, training and management. This programme becomes more important in the light of the Government of India's resolve to provide all the government rural schools with water and urinal/toilet facilities by the fiscal year 2005-06.

The RGNDWM describes the importance of school water supply, sanitation and hygiene education this way:

- Promotes health and hygiene behaviours at an early stage of childhood
- Improves the health of children and results in lower dropout rates, especially among girl children
- The huge network of schools offers a ready-made infrastructure to influence students, teachers, parents and hence the community.
- Children are the change agents. Hence, SSHE ensures generational change in the adoption of healthy and hygienic behaviours.

4. UNICEF: innovation and partnership in implementation

A major SSHE programme was launched in 2000 by UNICEF and RGNDWM in recognition of the enormity of the challenge. This programme emphasised the need for strategic planning to address this challenge. The agreement between UNICEF and the government noted: the absence of separate, safe and clean toilets deters parents from sending their daughters to school and denies many girls the right to basic education. The perceived duty of girls within the family to fetch water and perform other household chores, is another factor contributing to the denial of education for girls.

SWASTHH, meaning **state of health,** was coined to represent this intersectoral collaboration within the relevant departments of the Government of India and partners in the non-governmental sector. **SWASTHH** – School Water and Sanitation towards Hygiene and Health – is far more than a construction programme. Its global objectives focus both on education and quality of life. SWASTHH was initiated to develop, test and successfully demonstrate replicable models for hygiene education, water supply and environmental sanitation in rural primary schools and anganwadis. (As is noted below, the SWASTHH programme is also noted by other names in various states.)

[1] The subsidies at the national level are mixed with state subsidies and local payments. However, to give an indicative idea, the cost of one toilet facility is calculated by the TSC, for purposes of subsidy, to be about Rs. 20,000 (US$500)

Between 1999 and 2002, UNICEF's development assistance was programmed in 16 states, of which ten received funding from DFID, SIDA or both sources under the Child's Environment Programme. The remaining six states, Assam, Gujarat, Maharashtra, Tamilnadu, Karnataka and Kerala have implemented SSHE with UNICEF Regular Resources. SSHE has generated state-specific models in Karnataka, West Bengal, Assam, Maharashtra, Rajasthan, Orissa, Jharkhand and Tamilnadu. At present there continues to be a sharing of learning between SWASTHH and other SSHE projects underway in at least 64 districts of 20 states, including some North Eastern states, Sikkim and others.

Lead institutions: State and local levels

Education, water and sanitation are, according to the Constitution of India, subjects in which the state has primary responsibility and priority over the central government. The latter sets general policy and provides part of the financial support for these sectors.

Many SSHE programmes in India involve these groups:
- Students and teachers
- Parents and pre-school/nursery personnel
- Government departments such as Education and Health, local government (called panchayat), Rural Development, public health engineers, women and Child Development Departments
- External support agencies such as UNICEF
- Community groups such as (depending on the local circumstances): local government, school management committees, water and sanitation committees, parent-teacher associations, village education committees
- Non-governmental organisations and self-help groups (these are usually women's savings groups)

5. Examples of SSHE programmes and projects

As should be expected, a rich range of approaches and strategies is being developed to implement the SSHE programme, in response to local conditions and institutional settings. A few of the many SSHE models are described below, showing the range of institutional models, approaches and varied sizes of the SSHE effort in different settings. It is neither expected nor desired that India should have one model for school water supply, sanitation and hygiene education. Diversity with quality is the theme.

ESI: Environmental Sanitation Institute – Gujarat
(Northeastern India)

ESI is a non-governmental organisation noted as a pioneer in sanitation. The organisation has worked closely with state government for many decades.

Key features:
- ESI is a nodal agency working through a network of 110 NGOs.
- It provides training to NGOs, master masons, school teachers, head teachers.
- It focuses on schools that already have water facilities and high girl/boy ratios.
- ESI produces literature on construction, technology, hygiene activities and so on.
- ESI monitors each of the schools.

ESI carried out a programme that includes construction, in 8,590 schools between 1999 and 2003.

School Health and Sanitation Project (SHSP), Alwar District, Rajasthan
(location: North central India)

SHSP is a joint project of the Government of Rajasthan, the District Government of Alwar and UNICEF. The project has been developed and implemented in close conjunction with the educational reform project DPEP (District Primary Education Programme).

Objectives of the programme are particularly relevant to the situation in the district:
- Generate hygiene awareness among teachers and children in schools
- Promote behaviour changes related to hygiene and health among children
- Promote optimum use of available resources for better health and a clean environment
- Create an environment to sustain the attendance of girls in school

Key features:
The programme has given major emphasis to good management, training and collaboration at all levels, and community participation.

A District team, with one UNICEF-supported staff member for each sub-district (block), collaborates with the staff of the Education Department and the educational reform project in carrying out the programme.

Fifteen to twenty schools form a cluster in which joint training and monitoring takes place with teachers. School management committees are responsible for the water and sanitation activities (and other educational reform activities) at the school level. Training or orientation has been given (and sometimes retraining) for more than 10 categories of personnel.

The timeline for project implementation in a school is about two years. Particular attention is paid to monitoring and visiting the schools. There are monthly meetings at the sub-district (block) level and regularly scheduled meetings from district to school level.

Baselines are done for each school at the beginning. A detailed KAP study was conducted and is repeated to follow the progress of a small number (40) schools in detail. Lessons learned from this are rolled back into the project.

Construction has included: toilets and urinals, handpumps, rainwater harvesting, hand-washing facilities, drainage and solid waste disposal.

In the district 2,272 schools had been covered by the end of 2002.

Master Plan for School Sanitation, West Bengal
(Northwestern India)

Key features:
As in all states, there is a state coordination committee for water and sanitation, but West Bengal also has an active standing Task Force that manages the SSHE programme. The Task Force for School Sanitation is composed of senior civil servants, the secretaries/directors of departments of School Education, Rural Development, UNICEF, Public Health Engineering and the education reform programmes DPEP/SSA.

By 2002 the programme had enabled 31% of schools to have sanitation facilities and 69% to have water facilities. The programme seeks to cover all 51,000 primary schools in West Bengal by the end of 2004.
Total number of primary schools: **51,022**, (Source: Dept. of School Sanitation)

The programme delivery mechanism is based on local government (the panchayat system) in close collaboration with one of a number of NGOs and the local Education Department. Special attention is given to networking of teachers, school committees, panchayats and village education committees.

Training or orientation is given to district level officials, headmasters, teachers, village education committees, water committees, caretakers, masons and tube well drillers. In many cases the water committees are formed by the programme.

Technical aspects
- Technical innovation - Cost effective programme, local skills/resources used for construction, graduated from 2 units to 3 units

Basic unit: 2 urinals, 1 latrine, 1 water storage tank, handpump (Tara/IM III) and 1 washing platform
- Cost of the unit - Rs. 15,500
- Additional sanitary accessories are provided such as buckets, mugs, toilet brush, brooms.

Socio-Economic Units Foundation (SEUF), Kerala
(Southern India)

NGO with many activities in water supply, hygiene, sanitation, solid waste, and so on. The school programme was financed by a grant from UNICEF.

Key features:
The focus of this project was on hygiene behaviours and sustained use of school facilities through school health clubs.
Focus on teacher training and periodic retraining.

The programme was completed in 1000 schools in one district.

The SEUF writes this about the programme:
50% to 80% of the schools were successful in changing behaviours. This can be seen in areas such as:
-Children use toilet facilities in schools
-They are aware about washing hands with soap after defecation

- Children influence their parents for construction of toilets and for keeping them clean
- School health clubs help speed up the implementation of household sanitation (toilets in the district

It is necessary to have monitoring and support for the schools for at least 3 years so that the school health clubs and their activities will become institutionalised.

Children can play the role of 'change agent' for the community. We also recognised the ability of the child to observe, learn and transfer knowledge more deftly than the adult.

Teachers play a crucial role in making the school health club (SHC) effective. It is very important to plan and carry out good participatory training and retraining of teachers for the sustainability of the school health clubs.

It is important for local government to support the SHC and to coordinate with various line government departments.

These examples, a very small number of the total in the country, share several features showing:
- the importance of inter-agency and inter-departmental coordination;
- the importance of capacity development in the form of training, joint planning, etc.;
- the need for good management;
- the potential of children to stimulate change in the community and at home.

6. Challenge: construction is not enough

A consensus is gradually growing that SSHE must include, but move beyond, construction. It should have two components:

Hardware component: total package of drinking water, hand-washing and sanitary facilities. Elements of this should include: construction of adequate quality and designs that fit norms (number of girls/boy pupils, soil conditions}.

Software component: This is the more ambitious component of the SSHE effort. It should include:
- health and hygiene activities to promote healthy conditions at school and healthy practices of school staff and children;
- active and trained school management group, trained teachers;
- consistent use of facilities for hand washing, drinking and toilet use;
- repair and maintenance of these facilities by the school management/parent teacher groups, together with cleaning the facilities through a roster of responsibilities for children (irrespective of caste and class);
- health check-ups and de-worming;
- education: life skills education, school themes, curriculum development, classroom teaching, exposure visits, child-to-child activities;
- linking to homes, information activities in the community;
- Monitoring schools and community.

It is not difficult to implement effective hardware and software components in a small number of schools or within a small geographic area. Scaling up, and in particular, scaling up with quality, to whole districts and states is far more challenging. It implies,

for many institutions in districts and states, a fundamental shift from the earlier emphasis on provision of sanitation and water facilities alone towards combining this with promotion of behavioural changes to ensure a lasting impact on children's lives.

How does government, and its partners, such as UNICEF, work to promote this fundamental shift?
To support the quality of the SSHE programming, the central government and its partners have developed several mechanisms. Five of these are described in the following paragraphs.

7. Collaboration

School water supply is managed by a different agency from sanitation in many states. Schools themselves, and nursery provision, are administered by different institutions. The recent changes in the national constitution statutorily bring local government into provision of education.

Thus in each state a Water and Sanitation Mission has been constituted with representation of various departments such as education, health, local government, rural development, public health engineering and women and child development. This is meant to function as a task force and to help develop state level action plans.

At the district level, reflecting the new national policies, there are district committees to coordinate and supervise the water and sanitation reforms. The composition of these committees is, in a broad way, arranged so that it ensures coordination, including between the key district departments and even non-governmental organisations. These committees are mirrored at the sub-district and community level.

8. Capacity building

Moving beyond a pure construction orientation implies the need for capacity development at all levels, and includes building the capacity for capacity development. Central government has identified four regional resource centres: Safai Vidyalaya (Gujarat), Rama Krishnan Mission (West Bengal), Gandigram Rural University (Tamil Nadu) and the State Insititute of Panchayats and Rural Development (West Bengal). These are meant to provide training to the state level and district level resource institutions for the SSHE programme.

In turn, the states are expected to identify their own state level resource centres and to develop them with a view to increasing the capacity of district resource people, district and sub-district civil servants, NGO staff and educators. Similarly, the districts are asked to identify resource centres for training, such as, for example, the institution usually called the District Institute for Education and Training.

9. Manpower support

Finding manpower to carry out new programmes is often a problem. In the water and sanitation reforms each state is allowed to hire three or four professional consultants to be paid for from state or UNICEF funds. One additional consultant can be hired at the district level with the financial support of the total sanitation programme. These consultants deal with water and sanitation reforms as a whole but they can also help to focus attention on the schools programme.

10. Action plan

One interesting central government initiative has been the distribution of a template on which the State Action Plans for SSHE are to be prepared. The template provides the tables and explanations that emphasise the need to move beyond construction of water sources and toilets, to include training and mobilisation activities (workshops and seminars). It also includes an example of a school health education plan and plans for repair and maintenance of facilities. For training, the template includes a calendar to be filled out, showing the key stakeholders and the type and duration of training for each. This template serves to draw the attention of those who carry out the programme to the need for treating the software requirements of the programme seriously.

11. National and state workshops

Under the direction of the Total Sanitation Programme and the Sector Reform for Water and Sanitation, there have been several national seminars and workshops to develop the capacity of leaders at the state and district level and, perhaps even more importantly, to provide platforms for the sharing and transfer of experiences.

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WASH Campaign in Kerala - A holistic approach for the reduction of infant and child morbidity

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Abstract

Diarrhoea claims the lives of 2 million children around the world every year, while one million children in India die of diarrhoeal diseases annually directly as a result of drinking unsafe water and living in unhygienic conditions. The health profile of Kerala is said to be low mortality-high morbidity syndrome. Although the State has a high literacy rate and widespread health services the reported diarrhoeal morbidity and mortality rate is unacceptably high. It was observed that poor socio-economic status and a lack of protected water supply and toilet facilities were the major risk factors of diarrhoeal diseases in Kerala. The Centre for Community Health Research (CCHR), Kerala, conducted an in-depth investigation into the causes of drinking water contamination and its possible impacts on and implications for the health status of the people in Kerala. It was observed that all drinking water sources in the Kollam region (Kerala), including open dug wells, tube wells and all tap water sources were not safe for drinking and were highly contaminated with high percentages of fecal and total coliforms. Non-sanitary latrines, dumping of domestic wastes, lack of drainage facilities, proximity of dug wells and latrines, a water-logged environment, open defecation, lapses in drinking water disinfection and source protection were found to be the main causes of this large scale contamination. This leads to a high rate of water-borne and water-related diseases. Instances of diarrhoea , gastroenteritis, worm diseases, typhoid, cholera, polio and amoebic dysentery were recorded during the course of the investigation. In this context, WSSCC- India Chapter and the Centre for Community Health Research jointly launched a programme called 'WASH Campaign' as part of a global programme on water, sanitation and hygiene for all. The main objective of the programme is to reduce the present water-borne morbidity in the State of Kerala. The programme is multi-sectoral and participatory.

1. Introduction

At the global level it has been estimated that 1099 million people lack access to safe water. In India 125 million people lack access to safe water. It has been pointed out that globally, 2403 million people defecate in the open. In India, 700 million people lack access to sanitation facilities and resort to defecating in the open. Diarrhoea claims the lives of 2 million children around the world every year. One million children in India die of diarrhoeal diseases each year directly as a result of drinking unsafe water and living in unhygienic conditions (WSSCC 2000). The Government of India has reported that water-borne diseases have serious health implications due to the prevalence of high morbidity and mortality. Further, young children bear the main disease burden. Each year India loses about 400,000 children under five years of age, mainly due to diarrhoea (Panda 2003). A remarkable observation made recently by the Central Bureau of Health Intelligence, Government of India, was that, while massive investments have been made by the central

and state governments over the last five decades, morbidity and mortality due to waterborne and water-related diseases have not declined proportionately to the extent of increase in the availability of potable water. The inference was that the availability of potable water may not result in a significant fall in waterborne disease unless the quality of the water is properly ensured and unless there are improvements in handling practices, personal hygiene and environmental sanitation.

Several studies in Kerala have indicated that poor drinking water quality is a major risk factor in the overall morbidity profile of the state. The health profile of Kerala is said to be low mortality-high morbidity syndrome. It has been observed that Kerala, with 3 million wells, has the highest concentration of dug wells of any region in the world. Most people in Kerala prefer to drink well water because of its good taste. Therefore, protection of dug wells should be of paramount importance in order to protect health, particularly of the rural mass. A study on the bacterial quality of water in selected wells in Kerala revealed that water in none of the open wells investigated was of drinking water quality standard as prescribed by the Bureau of Indian Standards. None of the water was safe for drinking (SEU 1991). This was a startling observation since, for more than 50 percent of the population of Kerala, dug well water remains the only source of water for drinking. The co-existence of the diseases of poverty with diseases of affluence is the picture characterising the morbidity profile of the state. Diarrhoeal diseases, gastroenteritis, dysentery, cholera, infectious hepatitis, malaria, worm diseases, typhoid, polio, rotavirus infections, E-coli infections, Japanese encephalitis, dengue fever, conjunctivitis, weils disease and skin ulcers have been identified as the common water-borne and water-related diseases in the area. In addition the emerging trends of HIV/AIDS positive cases are further major threats to public health in Kerala.

Recently the Centre for Community Health Research (CCHR), Kerala, conducted an in-depth investigation into the causes of drinking water contamination and its possible implications for the health of people in Kerala. It was revealed that all drinking water sources in the state, including open dug wells, tube wells and all tap water sources, were highly contaminated and unsafe for drinking. Non-sanitary latrines, dumping of domestic wastes, lack of drainage facilities, proximity of dug wells and water sources, a water-logged environment, open defecation, lapses in drinking water disinfection and source protection were found to be the main causes of this universal contamination of the drinking water sources. The same study recorded a high level of water-borne disease in the area and a significant lack of awareness in the local population of the concepts of safe drinking water and safe sanitation and hygiene practices. In this context, WSSCC - India Chapter and the Centre for Community Health Research jointly launched a programme in mid-2002 called 'WASH Campaign' as part of a global programme on water, sanitation and hygiene for all.

2. Present morbidity profile

The Centre for Community Health Research (Kerala) carried out an epidemiological survey in Kollam (South Kerala) in order to establish the impact of drinking water quality on the health status of the population. It was observed that 33 percent of waterborne diseases in the area were diarrhoea, 30 percent gastroenteritis, 16 percent ascariasis, 8 percent typhoid, 7 percent enterobiasis, 2 percent cholera, 2 percent polio and 1 percent amoebic dysentry (fig.1). Water-related diseases reported in Kollam municipal corporation are presented in fig.2, showing that 36 percent of water-related diseases were registered as conjunctivitis, 25 percent as allergies, 24 percent as malaria and 15 percent as skin ulcers (Roy and Prakasam 2003).

The study highlighted the dominant association between poor drinking water quality and high rates of both waterborne and water-related diseases in the study area. It was further noticed that the incidence of both waterborne and water-related disease was strongly linked to socio-economic status. Disease incidence was higher in the lower socio-economic groups, indicating that the poor are more vulnerable to all sorts of diseases associated with water and sanitation. As well as lacking access to clean drinking water and adequate sanitation these groups tend to be unaware of the health implications when such facilities are lacking.

3. Programme strategy

The programme is multi-sectoral and participatory at grassroots level. The main stakeholders of the WASH Programme are local self-governments (PRIs), NGOs, CBOs, self-help groups, neighbourhood groups, women's groups, Anganwadis, primary schools, PHCs, ICDS, WATSAN committees, state and national governments and international organisations like WaterAid and the Water Supply & Sanitation Collaborative Council (WSSCC). Intensive training will be provided to volunteers as well as to representatives of stakeholder organisations. Afterwards, training materials for awareness campaigns will be distributed to the trainees. These materials, including WASH posters, will be exhibited in all relevant institutions in rural and urban areas. Volunteers and representatives will explain the various components of the WASH campaign.

WSSCC - India Chapter and WaterAid -India have jointly designed and produced nine posters in English for the WASH campaign in India. The main focus areas of the posters are: Sanitation –ways within our means; Simplepractices for a healthy life; The Facts and the Solutions; Timely Action Saves Lives; Hand Washing; Faecal–oral Transmission Route; Kitchen Gardens; Our Children are the future and Who is responsible?.

4. Programme components

(a) **Sanitation – ways within our means**: This illustrates various aspects of a 'clean village' and an 'unclean village . The clean village is depicted as 'heaven on the earth' and the unclean village as 'hell on the earth'. In an unclean village, there is illustration of open defecation, water stagnation, waste accumulation, and various sources of drinking water contamination in wells, ponds and other drinking water sources. In a clean village, there is a water and sanitation committee (WASAN)/ village development committee (VDC) for making decisions and for empowering the local communities. There are also depictions of sanitary latrines, a compost pit, use of wastewater for the kitchen garden, good hand pumps/ sanitary wells, etc.

(b) **Simple practices for a healthy life:** This poster illustrates various means of hygiene promotion for a healthy life. Depictions of key hygiene behaviours include water handling, personal hygiene, safe disposal of human faeces, food hygiene, safe disposal of animal and solid waste, safe disposal of liquid waste and village sanitation. In water handling pictures explain the importance of a safe water source for drinking water collection, keeping of water containers in the home and the necessity of a ladle/tap/tilt to pour drinking water in order to avoid dipping hands in water. There are three pictures in personal hygiene to explain the benefit of hand washing. In safe disposal of human faeces there are illustrations of a sanitary latrine for defecation, disposal of child faeces and safe disposal of faeces if a latrine is yet to be built. Pictures of food hygiene depict safe food storage, cleaning of vegetables before cooking and how to cook pork meat, etc. Illustrations of safe disposal of animal and solid wastes explain how to dispose of animal wastes away from water

sources and dwelling areas, disposal of animal and other biodegradable wastes in a compost pit and the safe disposal of non-degradable waste in the household environment. Safe disposal of liquid waste shows how to raise a kitchen garden with wastewater from the household, use of a soak pit to dispose of wastewater and regular maintenance of drainage canals in order to ensure free flow of wastewater. Three pictures explain the various aspects of village sanitation. They illustrate the need to protect water sources by avoiding open defecation and washing of animals near the sources. Promotion of village committees, maintenance of village sanitation and regular cleaning are other main components of this section.

(c) **The Facts and the Solutions:** In this section there is a comparison of the global and Indian scenarios on safe drinking water, sanitation, hygiene and health. It is noted that, globally, 1099 million people lack access to safe drinking water whereas in India the figure is 125 million. In terms of open defecation, 2403 million people in the world as a whole resort to that practice while in India 700 million people lack access to sanitation facilities and defecate in the open. Diarrhoea claims the lives of 2 million children around the world each year but 1 million of those child deaths are in India. Solutions to these problems are illustrated with pictures of safe drinking water, sanitary latrines and hand washing with soap.

(d) **Timely Action Saves Lives – Treat Dehydration With ORS/SSS:** Poster pictures here explain how to prepare ORS and Sugar Salt Solution (SSS). One of the very important points illustrated is the need to wash hands and all utensils before preparing ORS/SSS. Other essential points made are that vessels containing the ORS/SSS must be covered and the prepared solutions of ORS must not be stored or used for more than 24 hours and SSS for more than 8 hours. Directions are given for those affected with diarrhoea; they should have a diet supplemented with fruit juice, buttermilk, black tea with lemon, tender coconut water, rice or dhal porridge. Further, lactating mothers should continue to breast feed children affected with diarrhoea.

(e) **Hand Washing –Washing away germs, preventing diseases:** Hands are the body's feeders and cleaners. They help to eat and keep the body clean, including after defecation. If hands are not washed at critical times, particularly after handling human faeces, faecal germs can be transmitted, leading to diarrhoeal diseases. There are pictures to depict the 'critical times' when hand washing should be practiced. They show that the principal critical times are: after disposing of child faeces, after defecation and anal cleaning, after washing children's bottoms, after agricultural work, after any cleaning activity, after children's play, before cooking or serving food, before eating and before feeding children. Practising hand washing can prevent diseases like diarrhoea, cholera, jaundice, typhoid, amoebiasis and skin diseases. Soap, ash, soap nut powder and soil can be used as cleaning agents for washing hands.

(f) **Faecal – oral Transmission Route:** These posters depict the common components of the faecal-oral transmission route - faeces, flies, pets, animals, fields, fluids (water), fingers and food. Illustrations of how to block the faecal-oral transmission route are given, including use of a toilet, proper hand washing, using safe water sources and good handling practices, and adopting good food hygiene practices. Diarrhoea, dysentery, cholera, typhoid, polio, jaundice, gastroenteritis and intestinal worms are common diseases caused by slight contact with and transfer of germs from faeces.

(g) **Kitchen Gardens:** This session demonstrates the advantages of using wastewater from households and other sources for generating nutritious food. One distinct

advantage is that this beneficial use helps to eliminate pools of stagnant wastewater that are the breeding grounds for the mosquitoes that carry many life-threatening diseases. Wastewater can be channelled to raise a kitchen garden where abundant nutritious vegetables and greens can be grown. Kitchen gardens can be raised near the sources of wastewater disposal such as bathrooms, hand pumps, tap stands, sanitary wells, etc. Vegetables and greens produced in kitchen gardens can help to prevent malnutrition and promote good health. They can also be sold to generate income and, apart from their role in safely disposing of wastewater and reducing mosquito breeding, they can help to produce the clean and green surroundings that make for a better quality of life.

(h) **Our Children are the future. Can we afford to exclude them:** This is a message to society and to all stakeholders in this sector that children are the future and it is the responsibility of all to prevent the death of 2 million children every year due to water-borne diseases. Further, it is everyone's duty and responsibility to provide access to water and sanitation facilities in all schools and to enable children to learn and practise their proper use and management. We can make a difference through education and raising the awareness of children to the practice of good hygiene behaviours. Then, through the children, we can reach the community. We must make children active partners in all water and sanitation programmes in schools.

(i) **Who is responsible? - "We are" :** Finally, in addressing the issue of responsibility for the pitiful situation on water, sanitation and health we demonstrate that nobody other than 'we' are responsible for managing, maintaining and operating the systems. Capacity building by providing proper training will create the foundation for addressing the problems.

5. Programme outcome

Environmental health interventions are regulatory in nature and the benefits accrued are indirect. Interventions are exclusively preventive and benefits can be realised over a long period. Environmental health interventions also have the potential to convey considerable non-health socio-economic benefits.

The WASH campaign is now in full swing. We have been receiving very good responses from all stakeholders. The final output of the programme will be assessed at the end of 2004.

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Integrated Water, Environment, and Sanitation Management for Community-Based, Participatory, and Sustainable School Planning: The Case of Nairobi, Kenya

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Abstract

Progress in children's welfare will only occur if they receive affordable, quality services of water, sanitation, health, and education. Inadequate water, environmental-and sanitary management, and unsuitable technology choice relative to, rapid urban growth and poor urban planning has lead in sub-Saharan Africa to a near unmanageable situation. Local authorities fall short to deliver basic services affecting groups at risk especially i.e. school children. Water, environment, and sanitation (WES) are children's rights. The impact of cities on children's health largely depends on provision of safe drinking water, waste disposal, and favourable environmentally-and sanitary conditions. Evidence shows, that a child-friendly school has positive effects on concentration, learning, and health. Thus, WES systems and school planning should be integrated to reach education for all (EFA) by 2015. WES and education are Millennium Goals to be realized while protecting the environment. Schools can play a guiding role in creating awareness, understanding, and action on sustainable development, WES and health. This paper addresses the need for an integrated approach and increased investment effort to WES management and community-based school planning in sub-Saharan Africa. Findings are discussed of research on Nairobi City Council primary schools and the implications for schools in Kenya and other sub-Saharan EFA countries.

1. Case of Growing Up in Nairobi

Nairobi's conditions create hurdles for children to get quality education, and forms barriers to school planning [Dierkx RJ 2001]: Many schools are pure business opportunities to fetch fees, and levies. Most schools do not meet basic standards of health and inspections rarely take place [Daily Nation, March 2000]. Authorities are biased to 'modern', expensive, building methods. Use of sustainable methods is marginal. Architects and the building code form barriers, even if energy-efficient and affordable options are available [Njuguna DG, 1997].

Many schools are run-down as maintenance lacks behind. The government kept back from financing education, leaving it to communities. But, the impact of 'cost sharing' seems not to have been positive [Daily Nation, April 2000]. Education is costly: parents pay for fees, uniform, books, furniture, transport, (+ illegal extra-tuition). This is supposed to end with the free, universal primary education (UPE). Yet, prior to UPE, costs and logistics were not well planned. Thus, many schools cope with a pupil/teacher ratio of 60-70 (even 110). More teachers are needed, but they refuse working in insecure areas. Despite 2 million people (60%-Nairobi's citizens) live in slums, no new schools were built since 1990 [IRIN, 2004].

Public transport exposes children to speeding vehicles. There is an increase in incidents of pupils as road crossings, fly-over or traffic lights are absent [Daily Nation, July, 2000]. Burst sewers and waste dumps create health hazards as waste floods schools in the rainy season. Factories and traffic create excessive noise and pollution, causing concentration and respiratory problems. Non- maintained public space causes problems with dust when schools have no trees and vegetation. There is serious environmental degradation at many schools. Gangs terrorise schools, causing stress, fear, and decline of educational standards. Schoolchildren are not spared the cost of crime and moral vice (incest, rape, child prostitution) in slums. [East African Standard, 1999].

There is lack of consultation and participation of communities. Top-down approaches are used in school planning, and innovation of climate/cultural-fit and cost-effective school plans lacks behind. The plans mostly from 1970/80s have not been adapted to improve on energy-efficiency, cost-effectiveness, aesthetics, flexibility and adaptability to suit current learning systems, and comfort of the users. Yet, the government acknowledges a need for better school environments. A Commission of Inquiry on Kenya's education system (1999) attributed declining standards in education in part to poor school environments [Koech DK 1999]. These barriers influence the quality of learning-and school environments. They are often interlinked. Analysing and solving them simultaneously, needs mutual effort of multidisciplinary teams, necessary for child-friendly environmental school planning.

2. Field Survey, Baseline Assessment and Children's School Design Workshop

The survey took place in 2000 in Nairobi [Dierkx RJ, 2002]. A sample of 80 schools was drawn out of a total of 240. The questionnaire being used touched upon:

- Environmental state of the school and school ground– including hygiene and sanitation, physical condition, and comfort level– and their relation to health of pupils and teachers;

- Community members' access to and knowledge of inclusive school environments and sustainable development and their relationship to education;

- Community members' perception of methods and materials used in school development.

For the workshop I selected 8 schools, representing a range of socio-economic areas, and choose Standard 8 pupils (13 year old). Arts-and-Crafts teachers were requested to select ten pupils. The children designed a safe, healthy and inclusive school. Instructions defined safety, health and environmental awareness, describing their importance, and gave children specific questions. I instructed pupils to make drawings of their schools, and write a short essay explaining their impressions. We carried out the workshops during school hours and children finished their projects after school.

I conducted an in-depth assessment of the workshop schools, and verified actual school conditions, collecting primary data on technical conditions; crowding; conditions of toilets, sinks and water sources; conditions of equipment and technology available; types, and condition of building materials being used; and solar control.

3. Key Survey and Workshop Findings

Correlations were found amid student ill-health and adverse environmental conditions: flooded schools; excessive noise (traffic, industry); excessive odour (dumps, industry); solid/ fluid waste (small enterprises, sewers); polluted rivers (toxic waste); poor school conditions; and poor municipal services. Adverse environmental conditions often occur in combination with poor sanitation and water from unclean sources (water vendors). The data also revealed that information about sustainable building is not available. Developing pilot schools may increase understanding of such technologies by communities. Introducing and use of sustainable building materials (vs. conventional materials) will depend on the following criteria: that ease of maintenance, affordability, durability, availability, and appearance are equal or comparable to what is already used; and guidelines should be clear. The respondents do not favour City Council schools. They wish more variety, flexibility, affordability and ease of maintenance. They favour participation and control of the school planning process, together with architects.

During the workshops the children produced an array of projects. On the whole, the essays were more informative, giving more details than the drawings. In their drawings, the children focused on self-contained classrooms. Many drew separate buildings for classrooms, library, toilets, staff room, etc. Many included details about places for sports; playground space; outdoor lunch; storm drainage; and secure fencing. Children at Wangu Primary School (inner-city slum) and Buru Buru Primary School (higher-income estate), showed significant detail in environmental aspects of school: compost-pits, vegetable/flower gardens, fish ponds, rainwater harvesting, and landscaping. In their essays, most children were explicit about unfavourable conditions in-and outside schools: excessive noise and odour, lack of sanitation, lack of trees for shade, flooded playgrounds, gloomy and poorly maintained schools, violent street children, and unsafe roads (no pedestrian crossings, traffic lights, speeding cars).

4. Towards Child Friendly School Planning and Design

The design of Mukuru School with a group of Standard 8 children is a new approach to community-based WES and school planning in Kenya. The following contributes to the school's inclusiveness. (i) Application of new building technologies (local building innovation). (ii) Spatial organisation of the learning environment beyond the nucleus classroom. (iii) Integration of architecture with surrounding landscape and climate. (iv) Participation of local communities with assistance of local school advisors (involve community groups, residents, enterprises). (v) Finally, using architecture as a tool for learning (eco-orchard, eco-garden, water harvesting/filtering/recycling, solar power/water, and lab). Developing the learning program (architecture as learning tool, phased re-socialisation program, Basic Life Skills, income-generating skills) is left to the local community, school management, and authorities.

Hence, given the interrelatedness of aspects described earlier, the hypothesis here is that:

Creating Affordable, Safe, Healthy, and Environmentally Friendly Schools means, addressing in an inclusive way, underlying causes of poverty, safety, water, sanitation, education, health, and environmental problems, since it is simply not possible to resolve and deal adequately with each aspect in isolation

5. Paradigm of Whole

Since the problems are interrelated, an integrated approach, focusing on the development of the whole child on the way to school, in and after school, may possibly be the best way forward. We distinct 3 main aspects of this whole development in WES and school planning:

- The School as a 3D-Textbook (Whole Learning) aims to integrate the school, school ground, learning programme, users, wider community and environment. The children learn via different learning processes across body, mind, and spirit;

- The School as an Eco-system (Whole Settlement) sees the school as part of a wider goal of child-friendly human settlement development. It aims (i) to integrate WES systems with the landscaping and climate (eco-garden, eco-orchard, rainwater harvesting, water filtering, tree nursery, solid/fluid waste management); (ii) it sees school architecture as a tool for learning sustainability principles (outdoor learning, leisure space, and sports);

- The School as a Tool for Community Development (Whole Society) aims to integrate social, cultural, and human resources with the learning programme.

The whole approach has implications how schools are planned and used. Planning school WES systems via school sanitation, hygiene-and environmental education in learning programmes is one, important, aspect. However, current practice in most sub-Saharan countries is their focus on the "software in education" i.e. education policy-and curriculum development, learning programmes, training, and educational materials, with the aims to increase enrolment, improve access and academic performance, and lower dropout rates. Hence, the "hardware in education" - school environment - i.e. school buildings, school environment is virtually ignored [World Bank, 2003; Dierkx RJ, 2003]. Hence, we need a more balanced and increased investment effort to water, environmental, and sanitation management and community-based school planning in sub-Saharan Africa.

6. Implications

Nairobi's children face myriad challenges to become educated. Urban children face unique challenges that prevent many from even entering primary school. International advisory groups advocate for safe, healthy, and environmentally inclusive school environments, yet local authorities rarely implement these recommendations. The case described in this paper illustrate the feasibility of spreading information about sustainable development and the application of sustainable practices through community-based school design projects. This paper illustrates the potential of community participation in WES system and school planning. To make this happen, the following recommendations are offered:

- Develop pilot schools as best practices to increase understanding and use of such practices;
- Update guidelines, procedures, and norms for WES systems and school planning:
- WES system and school planning should be based on the geographical, socio-economic, and cultural context of areas. School advisors should be trained to assist with school planning;
- Develop a "culture of maintenance": ensure maintenance becomes affordable and routine;

- Involve Parent-Teacher Associations, administrators, residents, small-business owners, etc.;
- Finance school expansion for increased enrolment in Kenya, and finance their refurbishment;
- Strengthen local building-and infrastructure research institutes: establish research agendas to conduct studies on traditional, appropriate, and new technologies and WES systems
- Build local capacity of the infrastructure and construction sector, research and science education. Promote effective links amid universities and private sector;
- Reduce disparities amid communities; guarantee that strategies protect the environment, promote eradication of poverty and stimulate small-scale enterprise development.

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Setting standards – Children as ambassadors for change

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Most of the schools in the Eastern Highlands Province of Papua New Guinea are in a state of general decay with school boards having few options for development. Nor do the boards have much access to the resources that could assist them to provide the safe drinking water and toilets needed to maintain a safe and healthy school environment.

In late 1999 AT Projects started a project on assisting rural schools to construct much needed classrooms using locally available materials. As part of this project the AT Projects architectural staff visited 16 rural schools and on their return recommended that AT Projects also look at designing an appropriate toilet for these schools.

Most of the current toilet facilities are a health risk but the students using them believe such facilities to be the 'norm'. This has a really negative impact on their understanding of general health and sanitation standards.

Addressing this problem has been a time consuming exercise but, using the range of health and architectural skills at AT Projects, we have been able to develop what we believe to be an appropriate solution and have, over the past four years, been working with schools to build the "ATloos"

The "ATloo Project" aims to create lasting improvements in the health and hygiene behaviour of teachers and children in the 216 community and primary schools in the Eastern Highlands Province, with approximately 60,000 beneficiaries (teachers and students).

The ATloo building process involves the school children as this develops a sense of ownership. We have been able to build ATloos in a number of rural schools. The current project is carried out in partnership with Water For Survival/Oxfam New Zealand.

The ATloo is designed to use local materials that are supplied by the school communities. The three main parts of the ATloo (the floor, walls and roof) are bolted together so that, once the pit is full, the ATloo can be easily moved to a new site. Other features of particular interest are:

- It is comfortable to use.
- Because of its conical shape, the pedestal does not get fouled or need cleaning inside.
- The smooth concrete finish imparted by the use of fibreglass moulds makes the cubicle easy to clean.
- The sitting design means the cubicle is unlikely to become fouled with excrement.
- It does not smell.
- There are no flies.

- It is an attractive design that the community and the schools are proud of and proud to maintain.

- The timber and matting can easily be replaced.

- Apart from cement, reinforcing steel, bolts, nails, hinges and varnish, it is all made from readily available local materials. Even the vent pipe, normally in plastic, can be made from locally available bamboo!

AT Projects targets school children since young children are the most vulnerable to mortality associated with hygiene-related illnesses. Furthermore, establishing sound personal hygiene habits at a young age sets a pattern for adult life and prepares children as ambassadors for change within the wider community.

AT Projects ensures that communities are provided with information, project designs, management and basic technical support. We also aim to develop an understanding within the community of the importance of operation and maintenance of the school assets after construction. In addition the projects equip communities to build their own facilities based on the examples provided.

1. Setting the scene

In the late 1940's most rural people in the Eastern Highlands Province were still living as they had done for thousands of years. The outside world and its technology had made little impact on these communities. People lived a life that could best be described as 'Stone Age'.

Life was basic and, until the Australian Colonial Administration began introducing pit toilets, people used 'the bush' as their toilet. While there were strict rules about where people could go to the toilet (away from gardens and sources of drinking water for example), in general it was a case of finding a discreet place when the need arose.

As the Australian Colonial Administration began to develop its supervision of the Highlands through a system of Kiaps (Patrol Officers), it was able to introduce a range of government services, including health-based programmes. One such programme focused on the introduction of basic pit latrines.

Communities were in fact "ordered" to build pit latrines and communities that did not comply were often punished by way of fines (or worse). Although the programme was authoritarian and domineering it did result in almost every community having clean, usable pit latrines.

That programme continued until Papua New Guinea gained independence in 1975, when the Australian Kiaps left. Their duties were taken over by Papua New Guinean Officers who were generally not equipped to continue the work left behind by their expatriate predecessors. In a very short time rural communities abandoned their pit latrines and returned to using the bush.

While some attempts to reintroduce pit latrines (in particular VIP latrines) have since been made, these programmes have often been under-funded and relatively short term. The result is that, in almost all the villages in the Highlands there is a lack of toilets and, more often that not, children grow up without proper toilets and believe that using the bush is the norm.

The situation is similar in rural (and sometimes urban) schools, where the toilets are commonly in a general state of decay and often filthy, presenting a major health risk to children. It is interesting to note that school teaching staff (some of the most educated people in these rural communities) use toilets that are just as filthy as the student toilets.

Furthermore these toilets are often built a long way from the classrooms, meaning that, in many cases, they are "out of sight and out of mind".

2. Working to improve the situation

AT Projects Inc. (a local NGO) was formed in 1998 and is based in Goroka, Eastern Highlands Province. It works with both district and provincial governments, churches, rural communities and other NGOs in the Eastern Highlands Province.

Its aim is to enable rural people to use appropriate technologies that give them more control over their lives and that contribute to the sustainable development of their communities. AT Projects provides a number of project development services and is one of the few organisations in PNG offering practical technical support at a district level.

In late 1999 AT Projects started a project on assisting rural schools to construct much needed classrooms using locally available materials. As part of this project the AT Projects architectural staff visited 16 rural schools and on their return recommended that AT Projects also look at designing an appropriate toilet for these schools.

This recommendation was also influenced by the fact that Papua New Guinea ranks amongst the bottom 10 nations worldwide for access to clean, safe water and toilet facilities and many communities have little knowledge of hygiene and its implications for public health.

The two pictures on the previous page show a 'girls toilet' at Ufeto Primary School, a rural school in the Eastern Highlands Province.

This toilet is representative of many school toilets in the province. It is open on three sides and is often visited by local village pigs!

While most of these toilets have a dirt floor, this particular unit has a standard Department of Health concrete slab. These slabs were introduced by a donor-funded project and mirror the design for the standard 'squat' toilet.

Such slabs have the serious fault of not providing a base for the toilet building to be anchored to.

The main problem is that, once a child misses the hole and soils the slab other children will not use the hole and, as in the picture, they will then use the rest of the slab to defecate.

This problem is worse in boys' toilets as most boys stand to urinate and, more often that not, miss the hole. This encourages other children to use the the slab to defecate.

Given the broad range of skills and development experience of AT Projects staff, the process of designing a suitable toilet was in many ways innovative because our architects could work alongside our health and community development staff, allowing for building, health and cultural issues to be taken into consideration.

The two pictures above show the use of local materials in the ATloo.
Building ATloos involves the school children as this develops a sense of ownership. AT Projects staff spend up to four weeks at each school and integrate the toilet building process into the normal school timetable, reinforcing the idea that good toilets are part of everyday school life.

The project has been able to build ATloos in a number of rural schools. The theme of ownership is again applied in relation to the School Board's responsibility to provide local materials used in the construction of the ATloos.

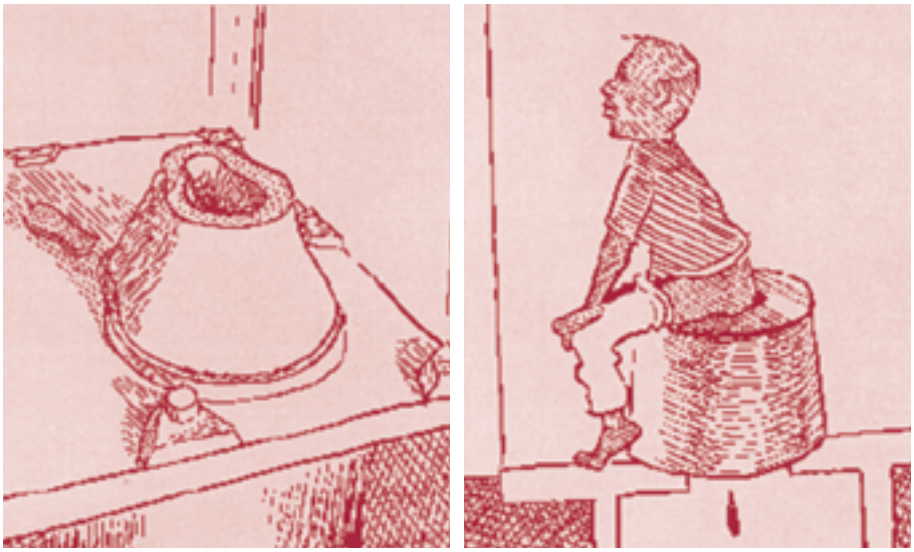
3. Children as ambassadors for change

As previously mentioned, school children develop a sense of ownership in the project because the solution to part of the sanitation problem at the school – the provision of new toilets - is provided by themselves.

But construction is only part of the project. Before any building work is carried out a general health and hygiene baseline survey is made. The survey is aimed at grades 4

and 6/7/8, and provides a picture of what is happening in the community (and in the children's homes) in relation to a range of health and hygiene issues.

Once the project is under way, printed material in the form of PNG grassroots type cartoons is distributed to the school children to reinforce the practical lessons learned (see example below).



The project aims to return to the schools six months after the new ATloos have been built. Then we conduct another survey and compare the students' responses as a 'before and after' review.

The project includes other components of a participatory approach. For example, at the end of the toilet construction stage, a day-long workshop is held with the School Board. Here both teachers and Board members are informed of their responsibilities in terms of the health and hygiene requirements at the school.
Here again PNG grassroots-type cartoons are used as many of the School Board members have little or no formal western education.

It is important to note that neither teachers nor head teachers receive any formal training in relation to the health and hygiene aspects of school management and most staff are unaware of the Education Act that applies to these issues. It is therefore not surprising that these matters can often be pushed to one side as being too difficult to address.

This participatory process is time consuming and, in terms of funds, relatively expensive, but the outcomes are very positive. We are seeing school children being allocated toilets by class and gender and in almost all cases these new ATloos are being looked after and cleaned. It is only where insufficient numbers have been built that we see some cleaning problems arise.

There is no doubt that the project is slowly having an effect on the standard of toilet facilities in schools and on their use by students. At the same time the project is helping the school community and the Division of Education to focus on the need for better toilets in schools.

Perhaps the more important question, regarding the impact of this project on the wider community, has yet to be answered. But, if change is to take place, the project is providing an important example for the future ambassadors of change.

CHAST "Children hygiene and sanitation training" in Somalia

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Abstract

CHAST is based on the proven premise that personal hygiene practices are usually acquired during childhood – and that it is much easier to change the habits of children than those of adults. Because the PHAST approach was initially designed for adults it has been carefully revised and adapted to suit the needs of young children. While children have less knowledge and experience, fewer responsibilities and a different conception of time and the future, they are also naturally inquisitive and eager to learn. The CHAST approach takes advantage of these natural attributes.

CHAST encourages children to actively participate in open discussions and, wherever possible, to share their experiences and ideas with their peers.

Three characters – Aisha, Jama and Ali – have been created to encourage the children to speak out on specific topics, while a puppet named Luuf is passed around to encourage young or shier children to take part in the discussions.

In the CHAST exercises, children are encouraged to work independently in pairs or in small groups and then to present their thoughts and findings to the larger group. Above all else CHAST tools are meant to be fun – involving games, exercises and role-plays that prompt the children to discuss and genuinely understand the key issues related to personal cleanliness and hygiene.

1. An introduction to CHAST

Children's Hygiene And Sanitation Training (CHAST) is a newly developed approach for promoting personal hygiene among children living in the rural areas of Somalia. Based upon the well-established Participatory Hygiene And Sanitation Transformation (PHAST) approach, CHAST uses a variety of exercises and educational games to teach children aged between 5 and 12 about the links between personal hygiene and health. The approach is based upon the premise that hygiene practices are largely acquired during childhood – and that it is much easier to change children's habits than those of adults.

CHAST grew out of a series of sessions with schoolchildren in Northwest Somalia (Somaliland) in the latter half of 2002, during which the exercises and lessons of PHAST were reviewed and adapted to suit the needs and natural understanding of young Somali children. The resulting exercises seek to deliver fundamental hygiene lessons and information in a fun and memorable way – and a way that is conducive to the hygiene-conscious practices of daily Somali life and traditional Islamic culture. By giving children practical lessons and tips on improving their own cleanliness and hygiene, CHAST aims to create an important channel for delivering these messages directly into local homes.

CHAST uses a 'child-to-child' approach to encourage children to actively participate in open discussions and, wherever possible, to share their experiences and ideas with

their peers. Three characters – Aisha, Jama and Ali – have been created to encourage the children to speak out on specific (often sensitive) subjects, while a puppet called Luuf is passed around to encourage young or shier children to take part in these discussions. In the CHAST exercises, children are encouraged to work independently in pairs or in small groups, before presenting their thoughts and findings to the larger group. Above all else, CHAST tools are meant to be fun – involving games, exercises and role-plays that prompt the children to discuss and genuinely understand key issues related to cleanliness and hygiene.

2. PHAST in Somalia

PHAST (Participatory Hygiene And Sanitation Transformation) is a joint programme developed by WHO and the UNDP/World Bank Water and Sanitation Programme. PHAST is based on the fact that lasting behavioural changes require a proper understanding of the links between poor hygiene and poor health. The approach involves specific participatory activities, using visual aids and other tools for community groups to discover for themselves the faecal-oral contamination routes of disease. They can then analyse their own hygiene behaviour in the light of this information and plan how to block these 'disease routes'.

The PHAST approach for Somalia is based upon the PHAST Step-by-Step Guide: A Participatory Approach for the Control of Diarrhoeal Disease (Wood S., Sawyer R. and Simpson-Hébert M., World Health Organization, Geneva, WHO/EOS/98.3). The steps described in the guide utilise drawings from the CD PHAST: Drawings for Use in Somalia, which was produced by Caritas Switzerland with funding from the European Union. The original PHAST approach was adapted to the local Somali situation in a joint venture between Caritas Switzerland and Luxembourg (operating under the name SwissGroup), Oxfam GB, SCF UK and COOPI. In the further development of the PHAST approach for Somaliland many other international, local and UN organisations participated in training workshops facilitated by Caritas Switzerland, which took a leading role and now acts as a focal point in coordinating hygiene and sanitation activities between local authorities, international and local organisations all over Somalia.

Different PHAST tools were adapted to the specific social and cultural environment in Somalia, including illustrations of typical Somali settings and role-plays linking development with H&S issues. A series of posters was designed with typical Somali characters devised by local artists. Caritas's experiences have shown that, with a few key modifications, the PHAST methodology can easily and effectively be replicated in the Somali context.

Many of the seven steps of PHAST find their counterparts in CHAST. Different to PHAST the CHAST approach misses activities like mapping, planning and selecting options. Instead there are methods like colouring drawings, playing games and exercising hygienic activities more suitable to the children.

3. The framework of CHAST

chast — Children's Hygiene And Sanitation Training
Five Steps for Changing Children's Hygienic Behaviour

STEPS	ACTIVITIES	TOOLS
1. Introduction	1. Introducing yourself 2. Stories about everyday life	1. Character posters 2. The puppet Luuf 3. Drawings for colouring
2. Problem Identification	1. Good and bad hygiene behaviour	1. Two-pile sorting
3. Problem Analysis	1. Review of good and bad hygiene behaviour 2. How diseases are spread 3. How flies spread disease	1. Memory and Pass the Buck card games 2. Short story 3. The 'Flies' role-play
4. Practising Good Behaviour	1. Blocking the spread of disease 2. Review of disease blocking 3. Hand-washing Tooth-brushing Food handling Toilet use 4. Closing session	1. Practical hygiene demonstrations and exercises 2. Role-plays 3. Puppet shows 4. Awarding of stickers
5. Monitoring	1. Baseline survey 2. Collection of data 3. Review and adaptation of tools	1. Interviews 2. Observation of children's H&S practices

Step 1: Introduction

This step is meant as an icebreaker and allows the children to become familiar with the facilitators and the methods they will use.

Activities: 1. Participants introduce themselves
2. Everyday stories

During the first activity, the children introduce themselves with the help of the puppet Luuf, which is combined with the introduction of the facilitators, the objectives of the course, the characters and the tools.

The second activity allows the children to reflect on their daily lives by telling stories with the help of drawings. To make it more suitable for children, the storytelling can be linked with the colouring of drawings.

Step 2: Problem identification

Activity: 1. Good and bad habits

This activity focuses on common health and hygiene problems. This tool is used with two-pile sorting as the problem analysis of good and bad hygiene behaviours. They show either a good or a bad behaviour and many of them form corresponding pairs. Used with the children they first have to classify them, afterwards they try to find all possible pairs. It compares good and bad habits and focuses on hygiene behaviour that can cause the spread of diseases.

Step 3: Problem analysis

Activities: 1. Revision of good and bad habits
2. How germs are spread
3. Germs are spread by flies

The first activity is a revision of the problem identification. It is performed as a card game: Pass the Buck for older children, and Memory for younger ones.

The second and third activities give an explanation of some of the common diseases that children can suffer from. This is done by telling a short story based on posters, and by a role play done by some of the children after instruction from the facilitators.

Step 4: Practising good behaviour

Activities: 1. Blocking the routes of germs
2. Hand-washing exercise
3. Toilet use exercise
4. Tooth-brushing exercise
5. Food handling exercise
6. Closing ceremony

This step demonstrates different actions for blocking the spread of diseases and concentrates on practical training in good hygiene behaviour, combined with role-plays and puppet shows. All the activities connect knowledge about the spread of diseases, and about their prevention, to better hygiene behaviour. Practical exercises in small groups are carried out. During the final session, all of the participating children receive an award.

Step 5: Monitoring

Activities: 1. Baseline surveys
2. Collecting data
3. Review and adaptation of tools

Monitoring needs to be planned from the beginning with a proper baseline survey. The monitoring and follow-up should demonstrate the impact of CHAST and provide suggestions on how to improve its methods and tools.

4. The CHAST tools

The CHAST sessions utilise a variety of enjoyable games and tools to encourage children to explore and discuss different elements of their own hygiene and sanitation. The main tools include:

Coloured posters
The more than 100 posters are generally of A4 size and are laminated to make them more solid and durable. Coloured posters are much more attractive and easier to recognise than black-and-white ones.

The posters may be used for the following purposes:
To introduce the three characters of Aisha, Jama and Ali, who will guide the children through the CHAST course.
To start the CHAST sessions. These are mainly posters showing the characters involved in different situations within each topic.
To show Somali children involved in good and poor hygiene behaviour (for 'two-pile sorting' exercises).
To illustrate short stories told by the children about hygiene problems and solutions.
To illustrate more wide-ranging H&S presentations by groups of children.

Drawings for colouring
Simple black-and-white drawings illustrating situations related to each exercise can serve as a useful and fun introduction to each topic – or be used as an 'ice-breaker' for the children to introduce themselves to the facilitator and the other children.

Puppets
The puppet Luuf can be successfully used by both facilitators and children to contribute to discussions about
important hygiene and sanitation issues – particularly by young girls and quiet children, who may otherwise be shy about taking part in such discussions.

Although the use of puppets is a new concept in Somali education, Luuf has already proved a particularly popular addition to CHAST exercises in Northwest Somalia – and it has now been joined by a second puppet, Timiro.

Puppet shows
A puppet show is a special type of role-play through which young children are encouraged to follow and take part in the scripted antics of the talking puppet, Luuf. The use of a puppet – rather than a person – to raise sensitive subjects and activities (e.g latrine use) makes it much easier for children to discuss previously 'untouchable' subjects. Puppets can also be used to criticise traditions or other sacrosanct issues.

Humour should be an important part of a puppet show, helping to break down any embarrassment the children may feel in discussing sensitive subjects – and encouraging them to engage in freer conversations during and after the show.

Role-plays
In general role-plays are used in the context of awareness raising and encouraging interaction between groups of children who previously did not know each other. In CHAST sessions they can be used to illustrate situations from everyday life in order to raise awareness about common hygiene problems, to support decision-making processes, and to create a positive environment for the discussion of more sensitive topics. Because role-plays do not require obvious acting skills they can successfully be used to help children enact and honestly describe real-life situations.

Card games
Two card games have been designed to reinforce lessons about good and poor hygiene behaviour. Memory is used to help younger children remember good hygiene practices, while Pass the Buck (isdhaafi kaadhka gaarka ah) encourages older players to find two cards illustrating the right and wrong ways of conducting their personal hygiene.

The CHAST characters
Three characters – Aisha, Jama and Ali – have been created to encourage the children to discuss specific hygiene and sanitation topics. These characters have been carefully designed so that Somali children can identify with them and their attitudes and actions.

Somali songs
As an important part of traditional Somali culture the act of singing well-known songs is a fun way to end a CHAST session – and one that is often hard to end! In some situations it may be possible to use local songs – or to create new ones – that carry messages related to cleanliness or personal hygiene.

Al Hadiths
Al Hadiths are Islamic proverbs from the Koran. They are put on the top of the drawings that are coloured by the children during several exercises. Around 20 Al Hadiths that are related to personal hygiene, have been chosen. The others are more general or not suitable for children.

بركة الطعام الوضوء قبله والوضوء بعده

"Allah's messenger said: the blessing of food is (received by) washing (the hands) before and washing (the hands) after."

نهى (ص): ان يبال في الماء الراكد

"The messenger of Allah said: let not one of you urinate in stagnant water."

Presentations
Many activities can be successfully 'wrapped up' with a presentation of the main lessons learned by the children themselves. In making such a presentation, children should be encouraged to follow the easy steps described as the '3 **T**s':

Turn: Face the audience and look directly at them
Touch: Point to a poster or flipchart highlighting the points you are presenting
Talk: Take a deep breath and start your presentation with an introductory sentence, such as,
"I / We want to explain to you this poster, which shows…"

5. Implementation

At the moment the CHAST approach is different from the teaching methodology used in the schools of Somalia. Although the CHAST approach is fundamentally different from that of PHAST, it initially calls for trained PHAST facilitators to introduce its sessions to Somali children. Negotiations are currently ongoing with the Ministry of Education in Hargeisa, Somaliland, and with UN agencies, for the incorporation of CHAST tools into the formal primary school curriculum in Somaliland.

The manual, Children's Hygiene And Sanitation Training (CHAST): A Practical Guide (Caritas Switzerland/Caritas Luxembourg, Hargeisa, 2003), is designed to provide CHAST/PHAST facilitators with a detailed methodology for Children's Hygiene And Sanitation Training (CHAST), together with step-by-step instructions for facilitating each session and using each exercise and tool. An accompanying compact disc contains easily replicable illustrations of the CHAST characters and posters, instructions for building the puppet Luuf, and other useful training tips. The 'child-to-child' approach extends the usual definition of the term, ensuring that children's training on hygiene and sanitation will also have an impact on their families and peer groups.

The steps described in the guide, and the drawings, therefore provide a complete package of tools for launching a comprehensive H&S promotion programme for primary school children. However, before using the tools with children, it is vital that facilitators seek proper training in using the CHAST methodology – in order to ensure that they will deliver an effective programme that will bring about positive behavioural change.

Caritas Switzerland is successfully implementing the CHAST and PHAST approaches in the rural areas of Somaliland in combination with construction of school buildings and water and sanitation facilities. Other organisations are also implementing these approaches in other regions and urban areas. Caritas implements CHAST in villages where the community facilitators are also taking up PHAST activities with the adult villagers. A bigger impact is achieved by working on different but parallel levels and in combination with hardware provision.

The CHAST methodology is developed by Caritas Luxembourg and Caritas Switzerland under the operational name of SwissGroup, and is funded by the European Union and the Governments of Switzerland and Luxembourg.

Key challenges and possible solutions on SSHE

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UNICEF Somalia

1. Background

Somalia continues to have a complex and volatile political, social and economic landscape. Twelve years after the collapse of the central government the country remains beset by conflict and division. It is also prone to drought, vulnerable to floods and subject to some of the worst Millennium Development Goal indicators in the world. Some regions of Somalia, such as Somaliland in the Northwest Zone and Puntland in the Northeast are nevertheless experiencing political development and economic recovery. Others continue to be plagued by emergencies. Somalia was, and still remains, one of the poorest countries in the world, where the majority of people struggle to meet their basic needs.

Primary school enrolments show that less than 10% of the total enrolments are girls. One of the reasons for this is the lack of separate ablution facilities for girls in schools.

2. Water, Hygiene and Environmental Sanitation Situation: a quick glance

Several studies, including the KAP survey in 1999, a school survey in 1999 and the 1999 MICS study of water and environmental sanitation across the country, revealed that the hygiene and environmental sanitation situation in Somalia in general is very critical, as indicated below:

- Diarrhoea, malaria and respiratory infections are the leading causes of child morbidity and mortality.
- Somalia is known to be a country where the incidence of water and environmental hygiene-related diseases is high.
- 72% of the population of Somalia have no access to safe drinking water.
- 48% of the population have access to and use sanitary means of excreta disposal in their premises.
- 49% of schools indicate that they have no adequate latrines and the latrine-per-student ratio is generally above 1:150.
- 59% of school children have no access to safe water in their school compound.
- 95% of mothers interviewed in selected communities revealed that levels of hygiene education, knowledge and understanding are very low.

Source: UNDP Human Development Report, UNICEF MICS 1999, Zonal Reports

3. SSHE interventions

In recent years SSHE has received more attention in UNICEF's water and environmental sanitation programmes throughout the world. Many UNICEF country programmes have included SSHE as the main activity within the WES programme. UNICEF Somalia has been involved in SSHE programmes since the 1990s. These programmes have included both the hardware and software aspects of the Water and Environmental Sanitation Programme.

This paper briefly describes the SSHE programme UNICEF Somalia WES section has carried out in the last seven years in the Northwest Zone of Somalia. The Northwest Zone has been seen as stable and secure compared to the rest of Somalia, followed by the Northeast where similar programmes have been launched.

Since the establishment of the programme in the Northwest Zone at least 78 primary schools in both rural and urban areas of the Somaliland region in that zone have shown benefit. The enrolment of girl students in these schools increased to 37% from 23% prior to the intervention. This activity still remains one of the main focuses within the UNICEF Somalia WES programme in the new UNICEF Somalia Country Programme 2004-2008.

In general School Sanitation & Hygiene Education (SSHE) focuses on the development of life skills, a healthy, safe, school environment and outreach to families and communities, all based on improving sanitation and hygiene habits within the schools. This in turn can be seen as an investment capable of making a vital contribution to the short- and longer term well-being of future generations of school children and their families.

Experience has shown that clean water alone leads only to minor health improvements. The essential factor is personal hygiene as a core issue in its own right, with adequate sanitation and clean water as supporting components. Each of the three components, taken singly, has some health benefit, but their combined effect is far greater.

In light of the above, UNICEF Somalia first initiated the SSHE programme in Borama District of the Northwest Zone.

The baseline data collection and needs assessment survey conducted in six primary schools in Borama town and six nearby villages showed the following.

- There were 3,236 students, of which 37.7% were girls. There were 106 teachers.
- Total facilities for those schools were 22 latrines.
- There were no water facilities in the school compounds.
- Ratio of students to latrines was 1:147.
- There were no separate latrines for girls.
- No students were using the latrines.

So as to achieve the target goals of the programme UNICEF Somalia supported implementing partners (Community Education Committees - CECs) in all activities geared towards the improvement of school sanitary conditions and children's personal hygiene, and to encouraging sanitation and hygiene promotion in the general community. The package consisted of both hardware and software interventions such as:

- construction of latrines and hand washing facilities;
- provision of sanitation tools;
- teacher training on hygiene education;
- formation of WES committees in schools;
- sustaining water delivery mechanisms in the school compounds.

Local community education committees (CEC) were the implementing partners.

During implementation of the project the major constraint faced was the lack of water sustainability for the schools because Borama (the pilot location) was suffering from a scarcity of water at the time of the intervention, making it impossible to connect the schools to piped water systems. Much discussion took place within the CECs, seeking a solution to this problem.

Prior to the implementation of the programme the school authorities accepted responsibility for provision of regular water supplies but, when it came to the time for implementation, they could not meet their commitment and the programme had to run without water for some time.

To solve this problem UNICEF Somalia initiated a meeting of all stakeholders, including school headmasters, teachers, regional education authorities and the mayor of Borama municipality. As a result of the meeting a permanent solution for water delivery to the schools was agreed, based on the following steps:

- The Municipality of Borama would provide two drums of water to each school on a daily basis and meet the cost of the water from its own revenues.
- The regional education authority would provide a donkey to pull the cart and take responsibility for paying the salary of the caretaker.
- UNICEF Somalia would support them with a cart for water transportation to six schools in Borama town. For four schools in neighbouring villages UNICEF Somalia would support the construction of roof water harvesting infrastructure.

On the basis of this experience UNICEF Somalia expanded the programme to other parts of Somaliland and, in this way, a total of 78 primary schools have been equipped with latrines (including separate units for girls) and hand-washing facilities.
The WES committees have played a major role in the upkeep of the sanitation facilities. Each school has one such committee, with a membership consisting of teachers, students and parents. Committee roles include:

- ensuring sanitation and hygiene facilities are kept clean and are used (teachers, students, parents);
- inspection of students' personal hygiene on inspection days (teachers, parents);
- introduction of ways to tackle hygiene problems related to poor hygiene (teachers);
- organising cleaning campaigns in the schoolyards on a regular basis (teachers, students);
- setting up timetables for classroom cleaning (students).

Although the project has not yet been externally evaluated, some clear indications of positive changes have been observed during the regular monitoring conducted by the UNICEF Somalia WES programme section. These observations as analysed by the WES section are as follows:

- Most schools have managed water availability in a systematic way.
- Some of the schools have noticed that the provision of sanitation facilities has increased students' attendance in class.
- The ratio of students per latrine has decreased from 147 to 100.
- 81% of the study schools have water in the compound.
- 73% of the boys use the latrines.
- 95% of the study schools have separate latrines for girls.
- 46% of the girls use the latrines.
- There is general hygiene awareness among students.
- School compounds are being cleaned regularly.

Source: Monitoring reports UNICEF Somalia, Zonal Report

4. Lessons learned

- Water is absolutely indispensable for the implementation of SSHE programmes in Somalia as communities do not use latrines without water.
- The role of CECs is crucial to the effective management, operation and upkeep of the programmes.
- The support of the authorities is vital to the sustainability of programmes.
- Adolescent girls are still not using school latrines. After visiting several schools where SSHE had been implemented it was observed that the older girls do not use the latrines because they are shy of asking permission from the male teachers. The younger girls of lower grades do commonly use the latrines and do not feel shy.

5. Challenges

- Absence of effective local authorities and partners leads to a lack of political will for advocating SSHE.
- Community-based management of basic services is quite a new approach for Somali communities. For a long period since independence they have been used to relying on and enjoying free government-financed social services.
- Student-latrine ratio still remains high at 1:100.
- The cultural taboo of older girls feeling shy to seek permission from male teachers continues, while female teacher numbers remain at a minimum.

Sanitation, health and hygiene education to enhance the quality of life – The Ozwathini case

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Abstract

Poets and painters have often been inspired by water's life giving properties. Water seems to have a new, fresh, almost magical quality that makes it a powerful symbol of life. But, to secure our future and that of the next generation, we must use our water wisely. No single measure can do more to reduce poverty, reduce disease and save lives than providing safe water along with adequate sanitation and hygiene awareness/education to all our people. Umgeni Water is not just a supplier of water. We can also boast one of Africa's most innovative approaches to water education programmes.

The programmes, which are designed to encourage learners both to be motivated and to think more critically about water-related issues, have been the work of dedicated water educationalists who run the organisation's highly successful External Education Services (EES) Section. The long-term challenge of EES is to help people to become water literate and to educate the public about the problems and complexities resulting from contamination of water through poor practices. The demand for EES water education programmes continues to increase. The programmes are aimed at raising public awareness about environmental issues, minimising pollution in catchments and helping schools and communities to be more water wise by better management of this scarce natural resource.

Our vision is that, through the water education initiatives of the External Education Services Section, we will build bridges of knowledge and understanding between students and communities to ensure safer water for all in the future. Our locally designed education resources enable students and communities to analyse the quality of their water, thus reinforcing concepts learned in the classroom, assisting in acquiring new skills and forging new links between the diverse communities found in Southern Africa. External Education Services is our contribution to promoting a spirit of water awareness and conservation for a brighter future.

This paper gives an overview of the sanitation, health and hygiene education programmes and materials/resources that are designed, developed and implemented. The successful impact of the education programmes is demonstrated by using the work done in Ozwathini (a rural area in the province of Kwa Zulu Natal, South Africa) as a case study.

1. Overview of the External Education Services Unit

History/Background

Umgeni Water pioneered water education in South Africa. This led to an enormous demand for our water education materials nationwide. The section started in 1990 as Project W.A.T.E.R (Water Education through Educational Response.) and changed to External Education Services in 1993. We are currently looking at a name change again,

to Environmental Education Services, as this better describes the sort of services that we offer. The programmes are primarily demand driven, but we also work proactively, liasing with schools and other organisations to inform them of our services and to form partnerships with them. Materials are also sometimes developed with project partners.

Achievements

1992 Finalist in the Green Trust Award (Corporate Category)
1993 Finalist in the International Water Supply Congress held in Budapest (Water Educating the Young Category)
1995 Winner at the 20th International Water Supply Congress held in Durban (Most Effective Water Education Poster)
1995 "In Search of the Mayfly Nymph" won the international award for the best environmental education video
1995 IWSA Public Relations Award in "The essential service – Keeping the customer informed".
1996 Winner of the Green Trust Award (Water Conservation Category)
1997 IWSA Award in "The essential service – Audio-visual".
2001 Finalist of the Green Trust Award in the Water Awareness Category.

Services offered

- Water education outreach programmes. Water Educationalists visit schools, industries and communities to run water workshops on water-related issues such as sanitation, health and hygiene, pollution, conservation, water supply and water treatment.

- Water education materials, including videos, teacher guides, posters, manuals, etc., some of which have won international awards.

- Mail Order Catalogue. This mail order service has the most comprehensive collection of water education materials in South Africa. Materials are charged at cost.

Schools and community benefits

- Cross-curricula resource materials
- Skilled and experienced staff to run workshops and presentations and to train trainers
- Hands-on experience on solving water-related problems
- Educational tours to waterworks and wastewater works
- Assistance in conducting river clean-ups
- Assistance with water-related projects

2. The water education classroom

Background

The Water Education Classroom at the Durban Heights Waterworks was the first of its kind to open its doors in Southern Africa. It allows a completely flexible approach to

learning about the local environment. Since its inception in May 1996 the classroom has had nearly 35,000 visitors. Due to the success of the Durban Heights classroom two other classrooms have since been opened - at the Midmar Waterworks and the Darvil Wastewater Works.

Aim

To create learning opportunities for children to investigate the water treatment process at Durban
Heights Waterworks.

Objectives

To develop a day's activities based on the school curriculum and integrated with the pupil's school project work to:

- extend the children's knowledge and understanding of the environment;
- introduce the children to new skills and develop their existing skills;
- promote positive attitudes to environmental issues;
- promote an understanding of the water treatment process.
- encourage a cross-curriculum approach to water education.

Facilities

The classroom is fully equipped with audio-visual facilities and has seating for a maximum of 45 people. Activities are organised and supervised by a resident teacher and the visit is without charge to the school.

Programmes

The programmes are designed to suit the age group (senior primary, high school, tertiary groups and other special interest groups) and to stimulate pupils to investigate:

- Our water supply
- Water treatment
- Water conservation
- Water pollution
- Waterborne diseases
- The water cycle
- Water and the community
- Habitats

Methodology used in the classroom

Learners are involved in group discussions that focus on various water issues such as water supply and treatment, pollution, sanitation, health and hygiene, waterborne diseases and conservation. There is recognition of their prior knowledge. This is achieved by using guided questioning to find out what the learners already know. This process also helps to stimulate discussion and find solutions to problems. These discussions are supplemented by the water education videos. Due to time constraints, copies of

worksheets and other activities are sent back to school with the educators. Educators use the visit to the classroom either as a preamble to their lessons on water or to conclude/round up the theme. Since the water classroom is at a waterworks, the highlight of the visit is a tour of the site. This offers a very practical, hands-on illustration of the purification process and the learners gain a better understanding of water treatment and why it is important for us to pay our water bills.

3. The Ozwathini Case

As already mentioned, one of the services offered is water education outreach programmes. Water educationalists visit schools, industries and communities to run water workshops about water-related issues such as sanitation, health and hygiene, pollution, conservation, water supply and water treatment.

To demonstrate the effectiveness of these programmes, reference will be made to the project that was run in the Ozwathini Area.

Location

The Ozwathini area is within the district municipalities of Illembe and Umgungundlovu in the province of KwaZulu Natal in South Africa. This area is to be provided with potable water as an RDP scheme in the near future. The scheme is still in the planning stage and will eventually supply a population of approximately 58,000 people with borehole water as the source. Stewart Scott is the consultant and Umgeni Water is acting as implementing agent. The location of Ozwathini in which the Umgeni Water operational area is divided
between the Izintaba and Ulwandle Umgeni water regions.

Pre-scheme water quality survey

A survey of pre-scheme water sources in use in the area showed significant bacteriological contamination in both the source waters and in the containers being used by the community. Consumption of water contaminated to this extent is a serious health risk and can lead to severe gastro-intestinal infections.

In summary, 38% of the water sources were classified as being unsuitable for consumption without treatment and 50% were of marginal quality. Only 12.5% of the sources were satisfactory for consumption without treatment. A surprising result was that water in 63% of the community water storage containers surveyed was classified as being unsuitable for consumption, which effectively meant that poor storage of the water by the community was resulting in further bacteriological contamination and increasing the health risk. A summary of these results is given in table 1.

Table 1: Percentage of Ozwathini raw water sources and community containers in each water quality category

	Raw water sources	Community containers
Ideal water quality – suitable for consumption	12.5%	0%
Good water quality – suitable for use, rare instances of negative effects	0%	0%
Marginal water quality – conditionally acceptable. Negative effects may occur in some sensitive groups.	50%	37.5%
Poor water quality – unsuitable for use without treatment. Chronic effects may occur.	25%	25%
Dangerous water quality – totally unsuitable for use. Acute effects may occur.	12.5%	37.5%

School education campaign

In the light of these deeply disturbing results it was decided that a community health and hygiene education programme, focussing on water care, should be carried out. Schoolchildren would be targeted as being the most cost-effective link to mass education.

Methodology

The approach to providing water care education at the 46 schools identified in the Ozwathini area was to begin with the junior schools as the senior schools were preparing for examinations late in 2002. The Department of Health at Ndwedwe was approached for assistance in contacting the schools and accompanying and assisting Umgeni Water staff with the presentations. Two teams were formed to provide the education programmes at the primary and high schools.

Ozwathini is divided into four tribal wards, namely Mathulini, Mlamula, Nodwengu and Kwagcwensa. Each team had to cover two wards. Team A covered Nodwengu and Kwagcwensa, Team B covered Mlamula and Mathulini. The approach used was to arrange appointments by personal visits to the schools. It was necessary to drive to the schools since those in the rural areas had ill-defined postal addresses, and many did not have telephones. The list of schools visited may be seen in table 2 (see the Appendix of Figures and Tables at the end of the paper).

The presentations focused on issues such as the importance of water, pollution, causes of and ways to prevent pollution, purification of water and how to save water. The Health Officers spoke on water-related diseases, sanitation and hygiene. The talks were followed with a video on health and hygiene and the presentation concluded with an open floor discussion and question session. Students were then asked questions to assess the effectiveness of the presentations. Three different types of poster were left in each classroom, dealing respectively with sanitation, bilharzia and cholera.

Pre- and post-education questionnaires were prepared for the learners to fill in, in order to assess the effectiveness of the campaign. The questionnaires are shown in appendices 1 and 2. Pre-assessment questionnaires were given to the principals of the schools while arranging appointments. The principal and teachers were asked to select pupils randomly from the different grades to answer the questionnaires. The post-assessment questionnaires were left at the schools after the presentations for later collection.

Results

The results of the pre- and post-questionnaires for the primary and high schools are given in tables 3 and 4 (see the Appendix of Figures and Tables at the end of this paper).

The pre-education questionnaire was divided into five sections, namely:

1. General water health knowledge
2. Looking after toilets
3. Handling of water
4. Handling of food
5. Waste management

Similarly, the post-education questionnaire was comprised of four sections, namely:

1. Handling of water
2. Looking after a toilet
3. Handling of food
4. What has been learnt

Each section of the questionnaires was scored and then overall percentages calculated.

From assessment of the pre-education questionnaire it was evident that the level of the respondents' knowledge was quite high. It was subsequently learnt that the Environmental Health Officers had been conducting workshops in the area as there had been outbreaks of cholera. This meant that the respondents had the necessary information, but were not putting it into practice. A problem area was the use and maintenance of toilets. Additional attention was given to this issue. One of the schools had had a bilharzia episode. The timing of the campaign was therefore fortuitous as it explained the reason for this disease occurring and the importance of treating it.

The results of the post-education questionnaires showed that there was an increase in knowledge in the areas covered. There was a keen interest in having more talks of the same nature for the whole community and in covering particular aspects of health such as HIV/AIDS. The impression gained was that the learners would welcome follow-up campaigns. There was now a link established between behaviour at home and at school. This had previously been an area of concern for the pupils as they believed that what they did at school should be different from what they did at home. In other words, practise good habits at school but not at home.

In summary, 28 primary and combined schools with 14,000 pupils and 18 high schools with 8,900 pupils were visited and exposed to the presentations. The teaching was well received and the objective of the campaign was achieved.

Discussion of problems encountered

A number of problems were encountered in this education drive. They are listed below, to be taken into account in future campaigns:

- Appointments were made at schools, but sometimes on arrival there were no contact teachers or principals available. This resulted in delays.
- Lack of commitment from the teachers. When programme staff arrive at school the students are not ready. Only then do they start cleaning and setting up the venue/hall. This delays the programme.

- Time given by the principal to spend with students is not enough. This can mean it is difficult to engage students in activities like PHAST tools.
- At some schools, the hall was not big enough to accommodate all the pupils, which resulted in the pupils being divided into groups, leading to further delays due to multiple presentations.
- At other schools the pupils would be forced into a hall too small, resulting in overcrowding. Then some pupils could not see the video adequately.
- There was a big problem in getting the pre- and post-questionnaires filled in. At some schools the pre-questionnaires were not filled in before the presentations commenced. Collection of the post-questionnaires was also problematic, with forms being lost or the contact teachers or principals being absent at collection time.

As a result, of the 46 schools visited, there were just 30 returns of pre-questionnaires and 20 returns of post-questionnaires.

Recommendations

- It is recommended that a re-survey of water quality in the community homes and storage containers be carried out six months after the introduction of the water supply scheme.
- At the same time, health records from the local clinics for the pre- and post-scheme introduction periods could be compared to assess health and education benefits.
- A workshop with teachers, principals and environmental educators is needed to discuss problems encountered and how these problems will be tackled for future progress.
- Environmental educators need to look at the effectiveness of the different approaches they are using ('talk and chalk', outcomes-based approach, active learning, constructivism).
- Educators need to introduce activities that will get the learners actively involved.

Approach used with community awareness programmes

- PHAST (Participatory Hygiene and Sanitation Transformation) tools are used to help encourage the community to participate throughout the workshop and to discuss their sanitation problems and health and hygiene practices as a group. This results in sharing of information and in the community identifying, recognising and solving its own problems.

- Research statistics show that students learn more easily if learning is fun and interactive. Educators can design competitions, role-plays, drama, experiments, etc. Individual students and communities as a whole learn more easily if they discover/identify problems/situations themselves rather than being told.

- Environmental educators must abandon the traditional approach of suggesting what they believe to be the problem or the needs of the community. People in the community need to identify problems themselves and relate them to their local environment. The same approach may be used with school students.

APPENDIX I: Figures and Tables

Table 1: Percentage of Ozwathini raw water sources and community containers in each water quality category

	Raw water sources	Community containers
Ideal water quality – suitable for consumption	12.5%	0%
Good water quality – suitable for use, rare instances of negative effects	0%	0%
Marginal water quality – conditionally acceptable. Negative effects may occur in some sensitive groups.	50%	37.5%
Poor water quality – unsuitable for use without treatment. Chronic effects may occur.	25%	25%
Dangerous water quality – totally unsuitable for use. Acute effects may occur.	12.5%	37.5%

Table 2: List of schools visited

Primary and Combined Schools	High Schools
Nodwengu Tribal Authority	Nodwengu Tribal Authority
Montobello C.P School (Our Lady of the Rosary)	Montobello High School
Nhlangakazi C.P School	Khanyisa Secondary School
Nondabula C.P School	Sotobe Secondary School
Ozwathini C.P School	Dumane Commercial School
Maqokomela C.P School	
Dikwayo C.P School	
Kwa-gcwensa Tribal Authority	Kwa-gcwensa Tribal Authority
Ndabenhle Primary School	Simunye Secondary School
Emkhambeni Primary School	Ndukwenhle Secondary School
Dalibo Primary School	Lukhasi Secondary School
Amabutho Primary School	Amahlubi Secondary School
Nsuze Gcwensa Primary School	Manaba Secondary School
Wewe Primary School	
Manzamhlophe Primary School	
Mathulini Tribal Authority	Mathulini Tribal Authority
Inqolayolwazi Primary School	Mjele High School
Appelsbosch Primary School	Mthuli High School
Amathuli Primary School	Sikhulile High School
Bulawayo Primary School	Nondemse High School
Sibongile Primary School	
Kwelifuphi Primary School	
Mlamula Tribal Authority	Mlamula Tribal Authority
Ngayiphi Primary School	Siyaphumula Secondary School
Sogidi Primary School	Chief Ngonyama Secondary School

Mlamulankunzi Primary School Deda Primary School Qhubakahle Primary School Noodsberg Primary School Sion Primary School Phambela Primary School Chibini Primary School	Ngcongangconga Secondary School Qalakahle Secondary School Ntuli Secondary School

Table 3: Pre and post-questionnaire results for primary schools

Pre-questionnaire for Primary Schools					
Name of school	**General water health knowledge**	**Looking after toilets**	**Handling of water**	**Handling of food**	**Waste manage-ment**
Mlamulankunzi	80%	75%	80%	80%	70%
Amathuli	70%	80%	60%	65%	60%
Dalibo	80%	60%	70%	80%	70%
Amabutho	80%	60%	80%	80%	80%
Nsuze-Gcwensa	80%	60%	80%	80%	80%
Manzamhlophe	90%	50%	80%	80%	80%
Mantobelo	90%	80%	90%	90%	90%
Nhlangakazi	70%	60%	70%	70%	60%
Nondabulo	90%	60%	80%	80%	90%
Ozwathini	90%	60%	80%	80%	80%
Maqokomelo	80%	60%	60%	80%	70%
Dikwayo	70%	80%	80%	80%	80%
Sogidi	70%	60%	70%	80%	70%
Ndabeni	80%	75%	80%	90%	80%
Noodsberg	80%	75%	80%	90%	80%
Qhubakahle	60%	60%	90%	90%	100%
Average	**79%**	**66%**	**77%**	**81%**	**78%**
Overall	**76%**				

Post-questionnaire for Primary Schools				
Name of school	**Handling of water**	**Looking after a toilet**	**Handling of food**	**What has been learnt**
Nondabula	100%	95%	100%	100%
Qhubakahle	100%	100%	95%	100%
Ozwathini	100%	95%	100%	100%
Maqokomela	100%	100%	95%	100%
Kwelifuphi	100%	100%	100%	100%
Inqolayolwazi	100%	95%	100%	100%
Manzamhlophe	100%	100%	95%	95%
Insuze-Gcwensa	100%	100%	100%	100%
Ngayiphi	100%	95%	100%	100%
Wewe	100%	90%	95%	100%
Average	**100%**	**97%**	**98%**	**100%**
Overall	**99%**			

Table 4: Pre and post-questionnaire results for high schools

Pre-questionnaire for High Schools					
Name of school	**General water health knowledge**	**Looking after yoilets**	**Handling of water**	**Handling of food**	**Waste manage-ment**
Dumane	90%	70%	70%	100%	85%
Lady of the Rosary (Mantobelo)	80%	65%	70%	100%	80%
Sotobe	75%	65%	70%	80%	90%
Qalakahle	90%	70%	75%	100%	85%
Ngcongangconga	95%	70%	75%	100%	80%
Khanyisa	90%	70%	80%	100%	95%
Indukwentsha	90%	60%	65%	80%	85%
Mahlubi	90%	75%	95%	100%	95%
Mjele	85%	70%	95%	100%	90%
Simunye	85%	85%	90%	100%	90%
Manaba	85%	65%	90%	100%	90%
Nondenisa	85%	80%	65%	100%	95%
Sikhulile	60%	75%	70%	90%	80%
Siyaphumula	85%	65%	70%	90%	80%
Average	**85%**	**70%**	**77%**	**96%**	**87%**
Overall	**83%**				

Post-questionnaire for High Schools				
Name of school	**Handling of water**	**Looking after a toilet**	**Handling of food**	**What has been learnt**
Mahlubi	100%	65%	100%	95%
Indukwentsha	100%	60%	100%	100%
Mjele	100%	70%	100%	100%
Siyaphumula	95%	75%	100%	95%
Sikhulile	95%	65%	90%	100%
Qalakahle	100%	70%	100%	100%
Mthuli	85%	60%	90%	100%
Simunye	100%	70%	95%	100%
Ngcongangconga	100%	60%	75%	100%
Lukhasi	100%	75%	100%	100%
Average	**98%**	**67%**	**95%**	**99%**
Overall	**90%**			

Appendix 2: Pre-questionnaire

General

1. Where do you relieve yourselves?
   - **Toilet**
   - **Bush**
   - **Other**
2. If the toilet is not there, do you see any need for it? No/Yes. Give a brief explanation.
3. How does it help to have a toilet?
4. Do you wash your hands after being in the toilet?
5. What do you use to wash your hands?
6. What diseases are caused by improper sanitation?
7. Why are flies dangerous?
8. How do you avoid flies?
9. Where can toddlers relieve themselves?
10. What causes obstructions in a toilet? Name the obstructions.

Cleaning of the toilet

1. Do you clean the toilet?
2. How do you clean the toilet?
3. Do you throw the remains from cleaning the toilet into the pit?

Safe water

1. Where do you fetch water?
2. What do you do to the water before drinking it?
3. How do you keep the water clean?
4. What do you use to clean water?
5. In what condition should water containers be kept?
6. How is unclean water dangerous?
   - **From where is it fetched?**
   - **At home?**
   - **In the field?**
7. How is water disinfected?
8. What amount of disinfectant is necessary for the water?

Food handling

1. What do we have to do before handling food?
2. How do we keep food free from germs?
3. What do we do with the dishes after finishing the food?

Waste disposal

1. Where do we dispose of waste?
2. What do we do with the pit when it is full?
3. Why is it important to burn waste?
4. What are other uses of waste?
5. Do you have gardens?

Appendix 3: Post-questionnaire

General

1. How do we avoid water-borne diseases?
2. In order to prevent contracting water-borne diseases, what do you and your family have to do to the water fetched from the river?
3. How is it important to drink clean water? Explain briefly.
4. Why do we have to cover drinking water containers?

Cleaning of the toilet

1. Is it necessary to clean the toilet?
2. How do we get rid of toilet odours?
3. Why is it important not to throw the remains from cleaning the toilet into the pit?

Food handling

1. What do we have to do after being in the toilet?
2. What kind of water should be used in preparing food?
3. Why is it important to cover food?
4. What is the important thing to do after changing a baby's nappy?

What you have learned

1. What have you learned from this educational programme?
2. Have you informed your family about what you have learned?
3. Do you apply your acquired knowledge at home?
4. Would you like to attend another educational programme?
5. What would you like the programme to deal with?

Primary school baseline study on water supply, sanitation and hygiene education in Lubombo and Shiselweni regions of Swaziland – Lessons learned

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Umgeni Water, South Africa

1. Introduction

A study, funded under the UNICEF/Government of Swaziland (GoS) Water Supply, Sanitation and Environment Programme, was undertaken between 1999 and 2000. The broad aim of the collaboration between UNICEF and the government was to promote a clean environment, safe water supply and good hygiene practices. Specifically, however, the purpose of the study was to collect, analyse and assess data on water supply, sanitation and hygiene education in primary schools in the drought and poverty stricken rural regions of the country, with a view to providing baseline data on the situation in the schools and drawing lessons from programme implementation.

At the time the Ministry of Health and Social Welfare Management Information System (MIS) revealed that 52% of schools countrywide had access to safe water supply and 80% had some form of sanitation. Information on the condition of the water and sanitation facilities, such as state of repair and quantity and quality of the supplied water, was not available.

This paper presents the findings of the Baseline Study on Water Supply, Sanitation and Hygiene Education in all Primary Schools of the Lubombo and Shiselweni Regions of Swaziland, with the aim of drawing lessons from the UNICEF and GoS funded project.

Statement of the problem

The Water, Environment and Sanitation Programme, under the auspices of UNICEF and GoS through the project secretariat and its specific sub-committees, carried out an exercise aimed at the provision of safe water and latrines and hygiene education in schools in drought stricken areas. In both Lubombo and Shiselweni regions, it was reported that these activities were being carried out properly, especially with respect to the latrine construction and hygiene education.

However, optimum project success and replication and implementation in other parts of the country were hampered by a number of factors that made it difficult to pursue the proper planning of further activities.

Some of these factors in the case of the schools in the Lubombo and Shiselweni regions are as follows:

- Lack of baseline information on existing sanitary facilities in schools
- Lack of baseline data on existing water facilities
- Lack of baseline information on hygiene education provision
- Lack of standards in place for sanitation facilities
- Lack of coordination among the stakeholders involved in water supply, sanitation and hygiene provision

It was against this background that a study was proposed to collect, analyse and assess baseline data on water, sanitation and hygiene education in all primary schools in the Lubombo and Shiselweni regions.

2. Background

The kingdom of Swaziland covers a land area of 17,364 km^2, lies between 600 m and 4,800 m above sea level and is situated about 30º south of the Equator. It is a landlocked country in south-eastern Africa, surrounded to the north, west and south by the Republic of South Africa and to the east by the Republic of Mozambique. The country can be divided into five physiographic regions with respect to geology, climate, landforms and vegetation. These are the Highveld, the Upper Middleveld, the Lower Middleveld, the Lowveld and the Lubombo Range. There are two modes of land ownership: 44 percent of the total land area is classified as Title Deed Land (TDL) and is transferable; the remaining 56 percent is Swazi Nation Land (SNL), communal land held in trust for the nation by the King and administered by chiefs.

The majority of the Swazi population lives on subsistence agriculture. The most commonly grown crop is maize, which is also the staple food of the Swazis. The Lubombo region is under large-scale sugar cane plantations. Sugar is a major earner of foreign currency – much of the crop goes for export. Cotton is also grown as a cash crop. Timber plantations largely cover the Highveld.

The country has a good road infrastructure. Most of the roads joining major towns are tarred.

Health services

As a means of implementing its primary health care strategy, the Ministry of Health and Social Welfare (MOHSW) initiated mechanisms for service decentralisation in 1986. Construction of a network of clinics and public health units was consequently accelerated, side-by-side with promotion of the work of community-based rural health motivators (RHMs). In each region there is a regional health management team (RHMT). The role of the RHMT is to coordinate all health activities in the region. The country is reported (UNFPA 1997) to have 172 outreach posts and sites and 166 healthcare facilities, made up of 7 hospitals, 8 public health units, 10 health centres and 141 clinics. In Spring 1995 it was estimated that 81% of the population lived within one hour's travel of a health facility.

Burden of disease

The national health profile (WHO 1996) identified communicable diseases related to the environment as the main cause of illness and death in the country. Such diseases were found to account for over half of all outpatient visits and more than 20% of all admissions to inpatient healthcare facilities. In terms of overall mortality, accidents and injuries are the leading cause of death. Next in ranking come the killer diseases associated with the consumption of poor quality water, and/or with inadequate environmental sanitation in households and around human settlements.

Between 1984 and 1994 national totals for outpatient visits showed the leading causes of visits in each year to be acute respiratory infection (ARI), diarrhoeal disease and skin

disorders. In 1996 the combination of these three disorders caused 50% of all outpatient visits (National Health Statistics Report 1996). In particular, the frequency of diarrhoeal diseases increased from an average of 10% of all outpatient visits between 1984 and 1991, to a mean of 15% for the period 1992-94. It is worth noting that high proportions of these diseases were reported in the under 15 age group.

Two other water-related diseases, malaria and bilharzia, have been of concern in recent years, with over 25% of children estimated in 1994 to be suffering from the latter (UNICEF/GOS, 1998). The prevalence of many of the foregoing diseases is related to poor hygiene practices and the low water supply and sanitation coverage noted below. To a significant extent, therefore, the nation's morbidity-mortality burden could be reduced by concerted efforts targeting improvements in water supply, sanitation and personal hygiene. In a participatory poverty assessment project (GOS.1997), the poor themselves considered easy access to potable water to be the first step towards alleviation of poverty.

Major indicators

	1998	2002
Infant Mortality Rate	72/1000 live births	106/1000
Maternal Mortality Rate	229/100,000	230/100,000
Life Expectancy	61 years	36 years*
Population Growth Rate	2.7%	1.9%
Per Capita Expenditure on health	US$70	US$56
Malnutrition	8%	12%
Access to potable water supply:	Rural 50%	Rural 52.5%
	Urban 80%	
	Peri-Urban 58%	
Access to sanitation	Rural 59%	Rural 39.6%
	Urban 80%	
	Peri-Urban 43%	

* Note reduced life expectancy due to HIV/AIDS epidemic

Water and sanitation coverage figures, especially in the rural areas of Swaziland, are not reliable, nor are they regularly and systematically collected/updated and analysed for strategic decision-making and planning. Although the sanitation figures appear to be high, the standard of the facilities is questionable.

Education indicators

Primary Enrolment Ratio (%):	Total	77
	Male	80
	Female	94
Secondary Enrolment Ratio (%):	Total	43
	Male	40
	Female	47
Primary Drop-out Rate (%)	Male	17.6
	Female	12.7
Secondary Repetition Rates (%)	Male	10.0
	Female	10.6

(Source: Education Statistics, CSO, 1997)

Water supply and sanitation intervention at schools

In 1995 the UNICEF programme of cooperation with the Government of Swaziland funded some activities in the water and sanitation sector. Then in 1996 the UNICEF and Government of Swaziland funded the Water, Environment and Sanitation project as part of the five-year Programme of Cooperation (1996 – 2000). The project was an integrated package of hygiene and environmental education, sanitation and water supply for schools in the rural areas (mainly in the Shiselweni and Lubombo regions) of Swaziland.

The Ministry of Education (MOE) was also funding water supply and sanitation projects for schools. A number of non-governmental organisations were involved in the schools' water supply and sanitation project, e.g., World Vision, Lutheran Development Service, etc.

3. Study findings

The study identified a set of critical concerns, including:
- absence of water points and latrines in schools,
- lack of personnel qualified in hygiene education,
- lack of national policies on health education;
- inadequate resources at schools e.g. training equipment.

Among the reasons identified for this state of affairs is the lack of importance placed on school sanitation facilities by national institutions, and the divergence between what is taught at school and the realities of life in the home and community. When sanitation structures are available at schools they are often far removed from anything families can afford to build. It was noted that, increasingly, communities are taking responsibility for improvement and maintenance of the school environment. This could be attributed to the fact that communities are becoming aware of the importance both of education and of a healthy learning environment.

One of the major constraints to the quality of hygiene education is the fact that the teachers themselves hardly ever receive adequate training in the subject. Another problem is that hygiene education has no specific slot in the curriculum and is not adequately addressed through other subjects. A third constraint to effective hygiene education is the lack of appropriate teaching methodologies and materials. Finally, teachers find it difficult to teach hygiene behaviours that cannot be applied within the school because there are no sanitary facilities. A hand-washing lesson has little impact when no hand-washing facilities are available.

Recommendations

The first step towards improving the situation should be the adoption of a coherent national policy on school environmental sanitation and hygiene education. Such a policy should clearly demand that all new schools be provided with adequate numbers of safe water points, latrines and hand-washing installations. It should also make a commitment to the improvement of water supply and environmental sanitation in existing schools and plan how these improvements are to take place. The policy should include an acceptance of the need to define minimum acceptable standards. Flexible guidelines should be prepared and distributed, providing simple guidance on the following:

(i) Approximately how many latrines, water points and hand-washing installations should be available for any given number of boys or girls

(ii)The standard design for an acceptable latrine or flush toilet for pupils

Several possibilities for action that would improve sanitation and hygiene education in schools were identified as follows:

- It is apparent that there is a great need for the hygiene education programme. It should therefore be strengthened and extended to all schools in the country.
- Hygiene education should not be treated as an extra-curricular activity but should be included in the schools curriculum as a subject in its own right. It should be given a period per week on the school timetable.
- Schools inspectors, school health nurses and environmental health officers should play a more visible role in evaluating the achievements of teachers and in monitoring cleanliness. They can also foster effective collaboration between government and communities by disseminating information and supporting community action.
- The most effective role of government and concerned non-governmental organisations and inter-governmental agencies is to support schools and communities in their efforts to improve the school environment and the teaching of hygiene.

While it may be over-simplistic to suggest that a healthier school environment will directly and immediately improve the health of school-aged children, there is hardly any doubt that an improved school environment, combined with health education and efforts to teach the wider community, can have a long-term effect on the population. Childhood is the best time to learn hygiene behaviours. But an effective school environmental health programme does not simply offer children an opportunity to learn personal behaviours; it can also help children to see themselves as important members of the community. Pupils' involvement in school health promotion work and their pride in a healthy school environment can lead to lasting behavioural changes and social improvement.

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Cross-transfer of school sanitation and hygiene education to communities

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1. Background of UMURDA

Uganda Muslim Rural Development Association (UMURDA) is a local organisation that was founded in 1992 in Bugiri District. The organisation is registered with the Ministry of Internal Affairs, NGO-Board -Reg. No S5914/2217, and is mandated to operate countrywide.
It is a faith-based organisation carrying out development activities in the country irrespective of colour, religion, age, sex or political affiliation.
UMURDA's **vision** is to:

"Have a healthy skilled and informed self-reliant rural community"
and the **mission** is to:
"Build capacities of rural communities to influence change for sustainable development through training, information sharing, provision of credit and support"
The ultimate **goal is** to:
"Mobilise and organise the target group to enable them to identify their needs and assist them to organise programmes to address the identified problems of poverty, ignorance and disease"

2. Services provided by UMURDA

UMURDA's services focus on the following objectives:
- Capacity building of rural communities
- Encouraging community-based facilities
- Promoting the welfare of rural communities
- Alleviating poverty in rural populations

3. UMURDA's experience in the water and sanitation sector

UMURDA has been involved in the water and sanitation sector since 1997/1998. It started by carrying out a needs assessment in 10 primary schools in Bugiri District and developed a proposal that was funded by the District Health Support Project (DHSP), the Ministry of Health and the World Bank. Several five-stance pit latrines and hand-washing facilities have been constructed.

UWASNET

UMURDA was a taskforce member in the formation of Uganda Water and Sanitation NGO Network in 2001. It is now on the Executive Committee of UWASNET, representing the Eastern Region of 11 districts.

Regional coordinator

UMURDA is currently the regional coordinator of seven districts in the capacity building framework of NGOs/CBOs in the water and sanitation sector. UMURDA's role in capacity building entails linking NGOs and CBOs, organisational development, provision of specific technical thematic support and gender mainstreaming and process facilitation.

4. Cross-transfer of school sanitation and hygiene education to communities

Introduction

In Uganda school sanitation and hygiene education has always presented a big challenge to several actors in the health, education, water supply and sanitation sectors. The current high and ever increasing enrolment in all schools in the country as a result of universal primary education (UPE) has made sanitation an issue for national attention. At the end of the Sanitation Forum in October 1997, the Kampala Declaration on Sanitation was adopted and the district leaders declared that:
"We shall ensure that every primary school and all other institutions of learning have adequate facilities (latrines, safe drinking water supply and with hand-washing facilities, with separate facilities for girls)"
(Action point No.5, Kampala Declaration on Sanitation.)

The Ministry of Education Policy on UPE of 1997 also emphasises that all primary schools shall have school health programmes.

Outcome

School sanitation and hygiene education programmes have been initiated by several organisations in the water supply and sanitation (WSS) sector, such as UNICEF/WES and RUWASA.
Large investments have been made, mainly into providing schools with hand-washing facilities and two five-stance pit latrines, one for boys and one for girls, together with hygiene promotion packages.
Issues such as: structures to adequately cater for girls' hygiene needs, especially the adolescent girls' during menstruation; the special needs of people with disabilities (PWDs); the temporary nature of the pit latrine based on drop and store technology; and innovations on reusable facilities and ecological sanitation, were/are being explored within the school environment.

The unsatisfactory fact is that these SSHE interventions are limited to the school environment, ignoring the children's homes and the communities where they live (see photographs attached).

The construction contracts normally go to government registered private construction companies, which have no interest in involving the communities where the school children live in sanitation and hygiene education. These contractors are paid for fulfilling the formal programme of construction activities defined in their contract rather than for the impact of the works on the community.

Study background

The investment by the government and donors in SSHE is enormous but, according to medical reports, most reported ailments continue to be water and sanitation-related. The hypothesis statement developed was that: "The number of water and sanitation facilities in schools, together with hygiene promotion, has increased, but the number of pupils suffering from water and sanitation-related diseases is on the increase in rural communities."

Study objective

Obtain information that would be useful in identifying the kinds of problems children face in order to design programmes that will lead to the reduction of water and sanitation related diseases.
Create awareness of the need for cross-transfer of SSHE to pupils' homes.
Serve as a channel to stimulate discussions among parents, children, policy makers, professionals and the public at large, on SSHE for all.

Research findings

Background information was gathered from UNICEF, DWD and RUWASA regarding the guidelines used in implementing the SSHE. In addition discussions were held with the teachers, medical personnel, parents, local leaders and the pupils. The procedure for selecting respondents for the study was based on visiting the schools that benefited from the programmes, the nearby health units and the homes of parents with children in the schools.

This paper sets out below some background issues that need to be addressed in order to devise strategies for promoting hygiene education practices in schools and in the local communities, that can help to prevent water and sanitation-related diseases and encourage healthy behaviour in the future generation of adults.

The word sanitation is often interpreted as meaning latrines or toilets but the definition of sanitation is actually much broader (ranging from solid waste disposal to drainage). In this paper the focus is on hygiene practice and latrine usage.

The 'Cinderella' of the water supply and sanitation sector has long been sanitation. Although sanitation is accepted by most as of critical importance, it is water supply and toilet construction that take precedence in terms of resource allocation, sector goals, priority actions and political will. This is mainly because direct construction has tangible outputs for political accountability, while sanitation is a public investment mainly concerned with promoting hygiene practice and latrine usage. But improvements in water supply quality and latrine coverage in schools do not alone make a big impact on the transmission of communicable diseases such as diarrhoea unless they are combined with improvements in hygiene behaviour and sanitation in the schools and in the communities where the children live.

If health impact is one of the main objectives of the water supply and sanitation sector, then the investments currently being made in improving water supply and sanitation in schools cannot be justified unless comparable efforts are directed towards improving hygiene and sanitation in the communities where the pupils live.

Often poor householders who are the parents of school children only receive improvements to water quality when water is collected from standpoints. They are therefore in greater need of hygiene and sanitation improvements to ensure a health impact.

In the past many WSS projects and projects implemented by the larger NGOs did in fact show commitment to hygiene and sanitation promotion in association with water supply improvements. Larger organisations such as RUWASA and WES/UNICEF have long experience in developing hygiene and sanitation strategies but even these support only local schools and are limited by the project approach as the funding and much of the personnel support are only available for the duration of the project.

Many changes have taken place in the water supply and sanitation sector, including a number of reforms in line with a sector wide approach (SWAP) and decentralisation process. These changes have brought into question some issues of institutional responsibility for sanitation, particularly regarding WHO SHOULD FUND SANITATION AT THE HOUSEHOLD LEVEL?

Responsibilities

In December 2001 a memorandum of understanding (MOU) on sanitation was signed between three ministries; the Ministry of Health (MOH), the Ministry of Water, Land and Environment (MWLE) and the Ministry of Education and Sports (**MOES).** Specific areas of responsibility in relation to sanitation and hygiene promotion were:

- MWLE for planning investments in sewerage services and public facilities in towns and rural growth centres;
- MOH for household hygiene and sanitation;
- MOES for school latrine construction and hygiene education.

The preliminary estimates of levels of funding for sanitation and hygiene promotion are as follows:

Rough estimates of elements of sanitation funding for 1998-2002

U Shs in millions					
Source	**1998/99**	**1999/00**	**2000/01**	**2001/02**	**2002/03**
DWD (MWLE) budget	3,464	2,808	11,091	5,585	5,818
MOH budget	251	241	665	438	587
MOES budget	1,462	3,237	4,368	6,277	6,367
TOTAL	**5,177**	**6,286**	**16,124**	**12,300**	**12,772**

(Source: WELL scoping study)

As can be seen, the MOH, with the largest mandate to provide hygiene promotion and sanitation, has the smallest budget compared to the MOES and MWLE.

In practice it appears that in many cases hygiene and sanitation promotion is not done at all at the household level. Even mobilisation for water points is often neglected. The pressure on the districts is to deliver water supply and the construction of water points. Planning is therefore centred more on the needs of contracting than software activities. District water offices have a mandate to promote sanitation to households in the community at least until construction is completed and the water comes on line.

District health offices (DHO) have few activities related to the promotion of hygiene and sanitation to rural or urban households. The emphasis at the DHO is on curative activities rather than preventive. Most of the cost of sanitation is payment to contractors to construct latrines in schools and urban centres. No systematic and regular analysis is done to try to determine the cause of poor environmental health or to develop strategies to improve sanitation.

In primary schools hygiene is a topic in the science curriculum and it is the science teachers who teach it to the pupils. As a result neither the children nor the local communities realise the potential health benefits of introduced facilities. There is therefore a need for tools and techniques for designing, implementing and monitoring hygiene promotion activities in the schools and for extending those efforts into the local communities in order to achieve sustainable health promotion in schools and after school. Hand/washing facilities, shower places, latrines and dish racks need to be installed in rural homes and their advantages to health fully explained.

Because of the dominant ideology that divides children into 'good' and 'bad', children cannot insist on teaching hygiene education to parents because they will risk being thought of as bad mannered. As the saying goes: 'Charity begins at home'. Even the practice of silence of children starts at home. Talking about sanitation and hygiene in rural communities is not seen as acceptable behaviour. Looking back at African history, it is unbelievable that most parents used to live without boiling water or pit latrines, and even personal hygiene was unheard of, and yet there was minimal illness. In African culture adults assume the responsibility of stating what societal norms are and what the young ones are expected to do. The young who have been introduced to SSHE are rarely heard at home.

In this research we sought to learn at first hand the pupils views and their perceived solutions to healthy behaviour in future. The pupils said they know that older persons disapprove of their knowing about sanitation and hygiene, but they had in fact learned about these matters in school.
However, a few parents do talk to their children about the dangers of poor sanitation and the consequences.

In one district in the research area children said that they learned some words from peers, such as okunia (defecate) and okunaala (urinate), but surprisingly, in their respective homes, they used okweyamba (to help oneself) and it was bad manners to mention the former words. The point here is not to shock people with the rudest words but to encourage parents, children, men and women to talk about them in ways that are not uncomfortable to them. This is normal even in the Western world where other words seen as more socially acceptable are often substituted for urinate or defecate.

Sanitation and hygiene education aimed at transformation must break this silence by involving children and parents in SSHE in the home setting. When children can discuss sanitation and hygiene education with parents and peers (out-of-school youth), and the consequences to their health, then they will not remain as vehicles of unchanging attitudes when they become adults.

5. School-to-Home Approach

The **School-to-Home Approach** was explored to find out the relationship between the SSHE in schools and the surrounding communities. The focus of the study was five schools where UNICEF and RUWASA had carried out SSHE in the Eastern Region of Uganda. Pupils in these schools were selected at random and a visit made to their respective homes.

The study revealed that 80% of the children lacked pit latrines in their homes, 15% had pit latrines in poor state and 3% had pit latrines in good condition but with no hand/washing facilities. Only 2% had pit latrines that matched the facilities at school.

6. Recommendations

There is a clear need to define the roles and responsibilities for sanitation and hygiene promotion at the local government level.
There is a need to establish sanitation committees at the district level with funds for their operation.
NGOs/CBOs need to be empowered to bring the 'voices of the poor' into the dialogue in the sector through capacity building programmes.
NGOs should take on more of the responsibilities currently held by governments for project implementation in SSHE.
Adequate capacitybuilding support should be provided to the NGO sector for the School-to-Home Approach to be sustainable.

7. Conclusion

The millennium goal is to alleviate poverty through the provision of universal access to safe water and effective sanitation by the year 2015. If this is to be achieved we must amend the current practice of concentrating effort and resources solely on the provision of water supply and pit latrines in schools while ignoring the sanitation needs of the associated rural communities.

The **School-to-Home Approach,** if explored further, will help to reduce water and sanitation-related disease by extending the reach of the SSHE messages acquired at school. This **Participatory Hygiene and Sanitation Transformation (PHAST) approach** can lead to sustainable change in the hygiene-related behaviour of children both at home and at school.

The distinct role played by NGOs as independent participants in development, needs to be recognised, valued and strengthened by donors.

CEI experience in closing the gap in school sanitation and hygiene education: case study of Mabale Parish, Nkoma Sub-County, Kamwenge District, Western Uganda

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Community Empowerment Initiative (CEI) is a local NGO in Western Uganda. CEI's mission is to empower the marginalised and needy among the community to attain sustainable, low cost and gender responsive solutions to their problems. The vision is of improving the living conditions of the community through implementation of long-term sustainable programmes. CEI deals with water supply and sanitation projects in the districts of Kabarole, Kamwenge and Kyenjojo in Western Uganda.

The environmental sanitation status in Western Uganda falls below the expected standards. Sanitation-related diseases are the greatest cause of illness and death among the population. Recent studies show that sanitation-related diseases like malaria, cholera, diarrhoea and intestinal worms (to mention a few) are among the top killer diseases in our area of operation.

The Ugandan government targets 100% water and sanitation coverage by the year 2015 against current national coverage of 58%. The government is also promoting universal primary education, for which donors have injected substantial funds. Current enrolment stands at 96%, an increased figure which puts considerable stress on school sanitation. On average the pupil to latrine ratio stands at 1:100 as opposed to the recommended 1:40. There is also a lack of adequate water to ensure proper hygiene and sanitation in schools. This issue of inadequacy especially affects the girl child, and more so the girls in upper primary schools who need private wash rooms and an adequate supply of water, especially during menstruation. It can be said that these older girls are more educated in personal hygiene and they are checked weekly by senior women teachers. Boys are not catered for in this way and this is a gap which needs to be addressed.

Nationally there are many players involved in the WES sector but, as a result of the government policy of privatisation and decentralisation, most funds are channeled through districts and the districts in turn tender out all the works. Construction of hardware facilities is given more emphasis than the software aspects of interventions in schools. Promoting good hygiene behaviour requires more time than hardware activities. This scenario has left facilities poorly maintained and, in the worst cases, misused and vandalised. Hardware activities are those concerned with construction work. Software activities focus on hygiene and sanitation training through seminars and workshops, use of hygiene and sanitation demonstration facilities and instruction in operation and maintenance procedures. The pupils are, to some extent, involved in hygiene and sanitation during classes, as evidenced by CEI assessment in the schools, which has noted appropriate lessons in the curricula. These lessons are based more on theory than on practice, but girls in schools are obliged to practise personal hygiene as taught in class and they are checked weekly by senior women teachers. No such provision is made for boys. This is a gap which the NGO voice might fill by using the NGO Network known as Uganda Water and Sanitation Network (UWASNET). UWASNET is an NGO in Uganda that coordinates all WES NGOs. When the NGOs talk with one voice through this organisation it can be heard by the government and can lead to the Ministry of Education making adjustments to the curriculum.

CEI, in collaboration with UNICEF and HEWASA, installed rainwater tanks in the primary schools of Mabale parish, Nkoma sub-county, Kamwenge district. Western Uganda. No funds were available for software. Funding was limited to only installation of the tanks, which became poorly maintained after some time.

CEI itself intervened to fill some manageable gaps on the software side after CEI hygiene promoters had carried out an assessment in those schools to obtain data on SSHE. The above intervention arose from this assessment. CEI invited school teachers to be trained on various school sanitation and hygiene activities, including operation and maintenance of the water tanks and practical lessons concerning the latrines and washing facilities. These practical lessons were given in one of the schools by technical persons hired to demonstrate the requirements to all teachers of schools in the area. These teachers could then return with that information to practise it in their schools. CEI has carried out follow-up activities in those schools and found that teachers have practised what they were trained to do. For example, water and sanitation facilities that were not previously maintained are now being kept in good order.

1. CEI opportunities to improve on SSHE

To cover the gaps in the hygiene promotion and to implement community water and sanitation in that same parish, CEI secured funds from an international donor based in the Netherlands, known as **SIMAVI** . In this process CEI made sure that the school teachers attended all the community hygiene and sanitation training sessions so that they could pass the information to the pupils they teach, in order for the pupils to practise proper hygiene and sanitation behaviours.

Through Uganda Water and Sanitation NGO Network (UWASNET) all the NGOs in WES can speak with one voice to the Government of Uganda, which can advise the Ministry to adjust the schools curriculum.

Another opportunity to increase the much-needed efforts to promote SSHE arises because other developmental partners are willing to contribute towards the process.

2. Lessons learnt

- Unless separate resources for SSHE are mobilised, there will not be a big improvement in SSHE. If separate resources are mobilised there will be tangible results because everybody will evaluate the investment and the results.
- Unless strong partnerships/networks are created amongst NGOs and the government, sharing common interests, there will be no improvement in SSHE. There is a need for joint planning involving all stakeholders.

3. Recommendations

- Special training of teachers on how to train the pupils in the use and maintenance of placed structures like water taps and constructed pit latrines. In the long run pupils are the ambassadors in their homes.
- There is a big need to train the pupils on how to use and maintain the constructed sanitation facilities. This can be done more easily by emphasising the child to child approach through sanitation committees at schools or at village level.

- Development partners should increase their support to the organisations they support.
- Development partners should build the capacity for the organisations they support.
- Development partners should emphasise separate budget lines and activities for schools in case they are funding both community and institutional interventions.
- Implementers should share the experiences in SSHE among themselves.

4. Conclusion

Promotion of SSHE in all institutions of learning presents a special opportunity to ensure that pupils at all levels - primary, secondary and tertiary - have adequate SSHE. Special attention should be given to the primary schools, where good hygiene behaviours can be instilled in the young children.

Focusing Resources on Effective School Health - the FRESH framework: FRESH in practice (Zambia) and FRESH in the context of EFA

Celia Maier- The Partnership for Child Development &
Cindy Joerger- UNESCO

1. Focusing Resources on Effective School Health: A FRESH Framework

Ensuring that children are healthy and able to learn is an essential component of an effective education system. This is especially relevant to efforts to achieve education for all in the most deprived areas. Increased enrolment and reduced absenteeism and dropout bring more of the poorest and most disadvantaged children to school, many of whom are girls. It is these children, often the least healthy and most malnourished, who have the most to gain educationally from improved health. School health programmes that are developed as part of community partnerships provide one of the most cost-effective ways to reach school-age youth and the broader community and are a sustainable means of promoting healthy practices.
Good health and nutrition are not only essential inputs but also important outcomes of basic education of good quality. On the one hand, children must be healthy and well nourished in order to fully participate in education and gain its maximum benefits. Early childhood care programmes and primary schools that improve children's health and nutrition can enhance their learning and educational outcomes. On the other hand, education of good quality can lead to better health and nutrition outcomes for children, especially girls, and thus for the next generation of children as well. In addition, a healthy, safe and secure school environment can help protect children from health hazards, abuse and exclusion.
Improving the health and learning of school children through school-based health and nutrition programmes is not a new concept. Many countries have school health programmes, and many agencies have decades of experience. These common experiences suggest an opportunity for concerted action by a partnership of agencies to broaden the scope of school health programmes and make them more effective. Effective school health programmes will contribute to the development of child-friendly schools and thus to the promotion of education for all.

Positive experiences by WHO, UNICEF, UNESCO and the World Bank have suggested that there is a core group of cost effective activities that can form the basis for intensified and joint action to make schools healthier places for children. These agencies developed a partnership for Focusing Resources on Effective School Health – the FRESH Partnership. This FRESH Start approach was launched at the World Education Forum in Senegal, April 2000. Since the launch this partnership now also includes the Partnership for Child Development (PCD), Education International (EI), the Education Development Centre (EDC) and an increasing number of agencies, organisations and governments that support this approach.
The core framework contains four components, each already recommended by the participating agencies, which capture the best practices from programme experiences. These are:
- health-related school policies;
- provision of safe water and sanitation;
- skills-based approach to health, hygiene and nutrition education;
- school-based health and nutrition services.

Supporting activities that provide the context in which the interventions can be implemented include:
- effective partnerships between teachers and health workers;
- effective partnerships between the education and health sectors;
- effective community partnerships;
- pupil awareness and participation.

The FRESH framework is now regarded by an ever-growing number of international donors, agencies and other stakeholders as an effective framework for school health. The FRESH approach to school health programming has now been adopted by more than 20 countries in Africa and over a dozen in Asia and elsewhere in the world.

2. FRESH as a Strategy for Achieving Education for ALL

Education for All (EFA) is the commitment that countries around the world have made to ensure that every child and adult receives basic education of good quality. The EFA movement is based on recognition that education is a human right, and that it is essential not only for sustainable development, but also for peace and stability among nations.

The EFA movement was born in 1990 at the World Conference on Education for All in Jomtien, Thailand. There, participants pledged to provide primary education for all children and massively reduce adult illiteracy by the year 2000. As reported at the World Education Forum, the follow-up conference that took place in Dakar, Senegal in 2000, these goals were only partially attained during the nineties. The Dakar conference provided a forum for discussion of the obstacles to achieving the Education for All goals and resulted in a renewed commitment to this effort. Some 1,100 participants from 164 countries adopted the Dakar Framework for Action, committing themselves to achieve quality basic education for all by the year 2015.

The link between student health and nutrition status on the one hand, and educational outcomes on the other, was already clear in Jomtien. Information presented there demonstrated that poor health and malnutrition lead to low school enrolment, high absenteeism, poor classroom performance and educational wastage. In spite of this, the Framework for Action that resulted from Jomtien contained no specific goals for school health for the decade 1990-2000.

In the meantime, additional research and experience further clarified the relationships among health, cognition, school participation and academic achievement. It has been shown, for example, that nutritional deficiencies and parasite infections, which impair both physical and cognitive development, are causes of reduced school enrolment, absenteeism and individual learning impairment. Social and mental health issues such as violence, injury and suicide, and lifestyle behaviours such as drug and alcohol abuse, are now universally recognised as reasons for which young people are not in school or not learning while there. Sexual behaviours, especially unprotected sex that results in infection with HIV or other sexually transmitted diseases and unplanned pregnancy, affect both students' and teachers' participation in education. In some countries, malaria alone is the leading cause of school absenteeism due to ill health.

As part of the EFA 2000 Assessment, a special study on the relationship between health and education arrived at the following conclusions:

- School-based nutrition and health interventions can improve academic performance.
- Students' health and nutrition status affects their enrolment, retention, and absenteeism.
- Education benefits health.
- Education can reduce social and gender inequities.
- Health promotion for teachers benefits their health, morale, and quality of instruction.
- Health promotion and disease prevention programmes are cost effective.
- Treating youngsters in school can reduce disease in the community.
- Multiple coordinated strategies produce a greater effect than individual strategies, but multiple strategies for any one audience must be targeted carefully.
- Health education is most effective when it uses interactive methods in a skills-based approach.
- Trained teachers delivering health education produce more significant results in student health knowledge and skills than untrained teachers.

Six new goals were established in the Dakar Framework for Action:

(i) Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children

(ii) Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and are enabled to complete, a free and compulsory primary education of good quality

(iii) Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes

(iv) Achieving a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults

(v) Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality

(vi) Improving all aspects of the quality of education and ensuring the excellence of all aspects so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills

In the Expanded Commentary on the Dakar Framework, the link between health and education is formally recognised in the following paragraphs:

Para. 8: To achieve these goals, we the governments, organizations, agencies, groups and associations represented at the World Education Forum pledge ourselves to… create safe, healthy, inclusive and equitably resourced educational environments conducive to excellence in learning with clearly defined levels of achievement for all.

Para. 35: Young people, especially adolescent girls, face risks and threats which limit learning opportunities and challenge education systems. These include exploitative labour, the lack of employment, conflict and violence, drug abuse, school-age pregnancy and HIV/AIDS. Youth-friendly programmes must be made available which provide the information, skills, counselling and services needed to protect them from these risks.

Para. 44: Successful education programmes require… healthy, well-nourished and motivated students, and an environment that not only encourages learning but is welcoming, gender-sensitive, healthy and safe.

Para. 66: Learning environments should also be healthy, safe and protective. This should include: (1) adequate water and sanitation facilities, (2) access to or linkages with health and nutrition services, (3) policies and codes of conduct that enhance physical, psycho-social and emotional health of teachers and learners, and (4) education content and practices leading to knowledge, attitudes, values, and life skills needed for self-esteem, good health, and personal safety.

The Framework highlights in particular the connections between HIV/AIDS and access to and quality of basic education.

Para. 62: The HIV/AIDS pandemic is undermining progress towards Education for All in many parts of the world by seriously affecting educational demand, supply and quality. …Education systems must go through significant changes if they are to survive the impact of HIV/AIDS and counter its spread, especially in response to the impact on teacher supply and student demand.

Education for All means ensuring that all children have access to basic education of good quality. This implies creating an environment in schools and in basic education programmes in which children are both able and enabled to learn. Such an environment must be friendly and welcoming to children, healthy for children, effective with children, and protective of children. The development of such child-friendly learning environments is an essential part of the overall efforts by countries around the world to increase access to, and improve the quality of, their schools. By agreeing upon a common language for describing school health activities and endorsing a common set of recommendations for school health programming, the FRESH partner agencies aim to work more effectively together, and with education and health authorities at all levels, to improve the quantity and quality of school-based health programmes as one strategy for the achievement of Education for All.

3. FRESH in Action: The CHANGES school health and nutrition programme in Zambia

An example of a national school health programme that is currently being implemented using the FRESH framework, is the national SHN programme in Zambia. The programme is the Zambian Ministry of Education's National School Health and Nutrition Programme, known as CHANGES. CHANGES stands for: Community-based Health, AIDS, Nutrition, Gender and Equity in Schools.
CHANGES has four key elements:

- The Programme - using the FRESH Framework
- Enabling Partnerships, at local, district, provincial and national levels, which are essential for the implementation of the programme
- The Impact of the programme on the children's health, nutrition and educational status is monitored at key stages
- The programme also helps to build capacity and to guide the way for scaling up towards full national coverage

Using the FRESH framework, the CHANGES programme in Zambia began in Eastern Province, with preparatory work being carried out in the year 2000. The first step was to carry out a situation analysis to determine what the key health and nutrition issues for school age children were. The main problems found included:

- high prevalence of parasitic worm infection - mainly hookworm (55%) and Schistosoma haematobium (48%);
- anaemia (29%);
- vitamin A deficiency (36%);
- malaria;
- malnutrition;
- Inadequate health, hygiene and nutrition education in the majority of schools;
- inadequate access to safe water and sanitation facilities.

In the light of the situation analysis, the interventions selected included:
deworming (using albendazole for hookworm and praziquantel for shistosomiasis), iron supplementation and vitamin A supplements – all given by the teachers.

In addition to this, skills-based health and hygiene education was begun and, working with UNICEF and the local WASHE committees, a programme was started to ensure that all the schools would have adequate water and sanitation. Schools and local communities were also encouraged to apply for small grants that were available for microprojects – such as improving community water and sanitation facilities.

To enable these interventions to be implemented effectively, it was crucial that they were guided by sound operations research. This included the design and validation of a self-reported health questionnaire in the local language which, in Eastern Province, is Nyanja. Although children were asked about a range of health conditions, the main purpose of the questionnaire was to establish whether they had urinary schistosomiasis. This type of questionnaire has already been used successfully in a number of countries, including a large scale programme in Tanzania. However, for it to be reliable and successful, it is essential that it is developed in conjunction with teachers and local people, who can advise on local terms for particular health conditions and diseases.

The questionnaire was validated against microscopy study of eggs in urine, to compare reported with actual presence of schistosomiasis. Questionnaires for S. haematobium generally find that prevalence is under-reported by approximately 20%. In Eastern Province, the questionnaire underestimated schistosomiasis by approximately 15%. The WHO recommends mass treatment of a school when prevalence is 50% or higher. So, using the questionnaire, a reported prevalence of 35% or higher would indicate the need for mass treatment.

A tablet pole was developed for Zambia, as a quick and easy way of determining the correct dose of praziquantel, where the dose is given per kg of body weight. As height and weight are strongly correlated, instead of weighing each child, the child can stand against the pole, and the correct number of pills is read off from the pole.

Another core element of the programme is the enabling partnerships. These bring in support and expertise to enable the programme to work at all the different levels, from national to local community. In the CHANGES programme, the partners included:

- Ministry of Education
- Ministry of Health
- Ministry of Community Development
- International and local NGOs
- WASHE (Water & Sanitation), PTAs and other community groups (esp. small grants support)
- UTH (University Training Hospital)
- UNZA (University of Zambia)
- TDRC (Tropical Disease Research Centre)
- Partnership for Child Development (Imperial College, London)
- Successful Intelligence (Yale)
- EduAction (Durban, South Africa)
- Glaxo SmithKline
- Schistosomiasis Control Initiative (Imperial College, London)

Another important aspect of the programme design was impact assessment, to determine whether the interventions were having an impact on children's health and nutritional status and if that, in turn, was improving their educational achievement and their ability to learn.

To monitor these aspects of the CHANGES programme, phase 1 incorporated a three-year longitudinal study of a subset of schools, with a rolling programme of intervention and control groups (3,800 children). Immediately after the baseline survey, a basic 'health education and life skills development' package was implemented in all control and intervention schools (November 2001). Children in the intervention schools also received a package of drug interventions, involving praziquantel, albendazole, vitamin A and ferrous sulphate. To ensure that all children received all the interventions, the control group in one year joined the intervention group in the following year and a new control group was recruited.

The information gathered for the impact assessment included:

1. Anthropometric information:
   - Height
   - Weight
2. Nutritional information:
   - Haemoglobin levels and three additional measures of iron status (serum ferritin, transferring receptor, C-reactive protein)
   - and Vitamin A status (in years 1&2)
3. Parasitological information:
   - Stools
   - Urine
4. Cognition and educational achievement assessment

Deworming for both hookworm and schistosoma was found to have a good effect on reducing prevalence at 12-month follow-up, reducing prevalence from 55% to 16% for hookworm and from 48% to 13% for urinary schistosomiasis. (figure 1).

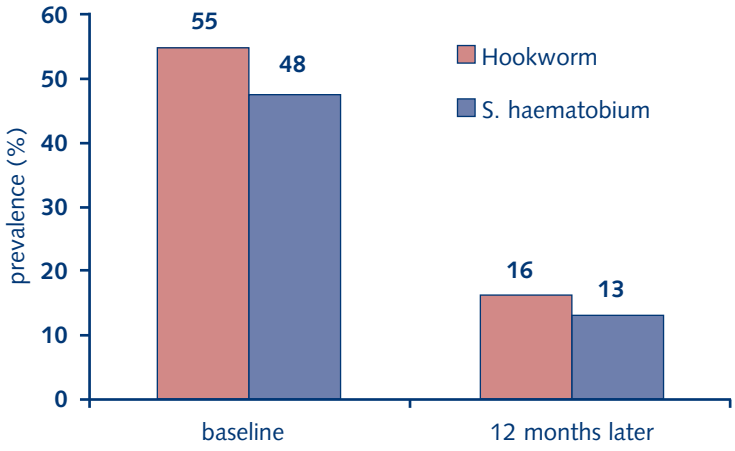

Figure 1. Prevalence of hookworm and schistosomiasis, at baseline and 12 months after deworming. Year 1 of CHANGES programme

Even more striking was the dramatic effect of repeated treatment. The second treatment with praziquantel, in year two, reduced the prevalence of schistosomiasis to just 1%. So repeated annual treatments have a very significant effect on reducing prevalence to almost negligible levels (figure 2). The same pattern was found for hookworm.

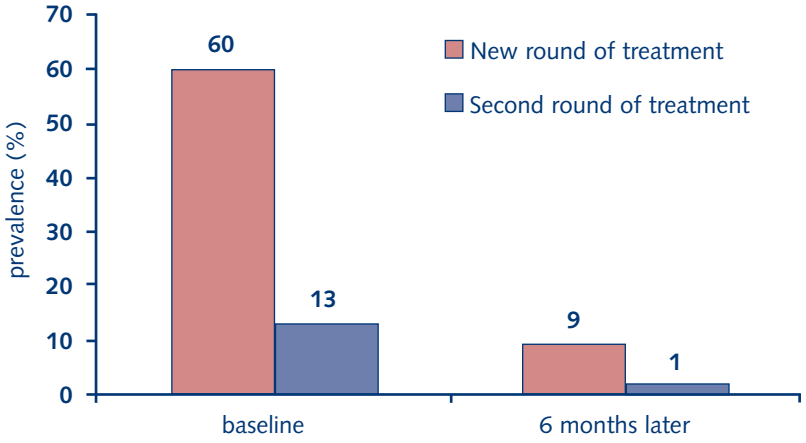

Figure 2. Prevalence of schistosomiasis, at baseline and 6 months after deworming. Year 2 of CHANGES programme: Comparison of new and repeat deworming treatments.

Although analysis of iron and vitamin A status is still taking place, the current results are much less clear cut, with no clear improvement in nutritional status yet being shown. The most likely explanation for this is that the first year of this programme coincided with a wide-spread famine in much of southern Africa. With complete crop failure in southern Zambia and much of Eastern Province for two years in a row, the children's general state of nutrition was so poor that micronutrient supplements in school were just a 'drop in the ocean'. Despite this, over the following year, Hb levels were beginning to rise again.

To assess the impact of the interventions on the children's educational ability, a new test was developed by partners at Yale University, called the Zambian Cognitive Assessment Instrument, or Z-CAI. The test, while being relatively quick and easy to administer by teachers, was designed to measure children's ability to learn, rather than their specific knowledge of, for example, Maths or English. Results from the Z-CAI were also highly correlated with the scores from the Grade 5 Zambian National Assessment Tests – but, for the purpose of assessing the impact of the programme interventions, the Z-CAI was much quicker to administer than the National Assessment Test.

There was a highly significant improvement in performance of the intervention group compared to the control group – despite the fact that the former group started off with lower scores, purely by chance, as a result of the randomised assignment of schools to each group. From this it was clear that something about being in the intervention group – whether it was the deworming, the micronutrient supplements or a combination of factors – seemed to have a very positive effect on the children's ability to learn (figure 3).

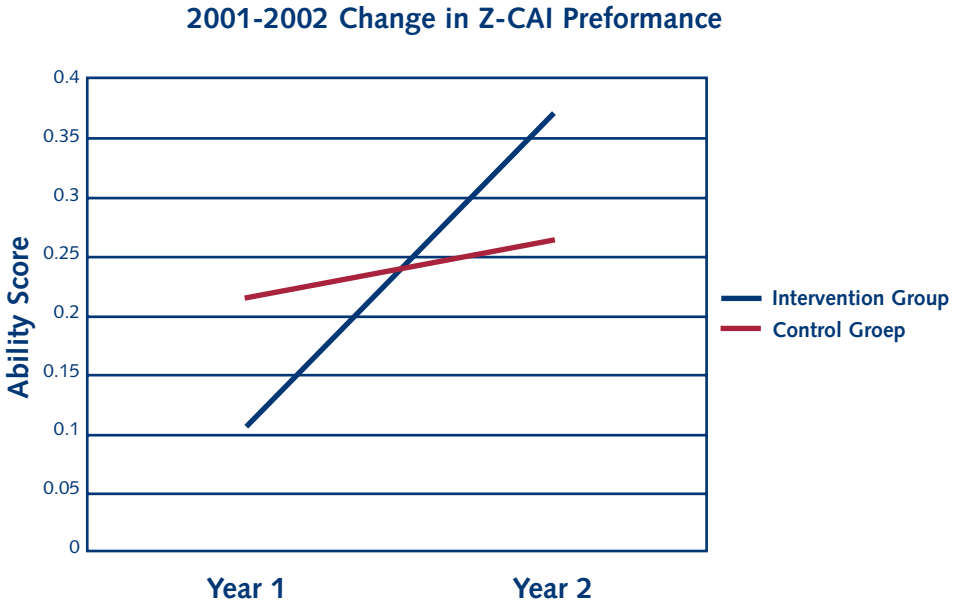

Figure 3. Z-CAI test scores in years 1 and 2 of CHANGES programme: Comparison of intervention and control groups.

Building capacity is a prerequisite for scaling up a programme. These are some of the areas in which this is being achieved for the CHANGES programme:

- Policy
  - SHN using the FRESH framework is now part of a five-year MoE strategic plan.
  - Specific school health policies are being developed.
- Development of training materials for life skills (especially HIV/AIDS prevention)
- Teacher training (pre and in-service)
- Targeting and delivery of interventions
- Partnerships
- Monitoring and evaluation

The evidence of the improvement in children's ability to learn, as a result of the CHANGES programme, persuaded the MoE to commit their own funds to:

- expand the programme to another four provinces by 2005;
- aim for full national coverage of the whole country by 2008.

4. FRESH in Action: A FRESH Toolkit

On behalf of all the FRESH partner agencies, UNESCO is now developing a FRESH 'Toolkit' in CD-ROM form. The purpose of this CD-ROM is twofold: first, to encourage those who plan school-based health programmes to use the FRESH approach; and second, to provide those who implement such programmes with a set of practical, easy to use, and easy to adapt tools for achieving the best results. The tools incorporated into the Toolkit have been extracted from publications by WHO,

UNESCO, UNICEF, the World Bank, Education International, Partnership for Child Development, Education Development Center and other international organisations. Six health issues are addressed in the initial version of the Toolkit: Food & Nutrition, Helminths & Hygiene; HIV/AIDS/STI; Malaria; Drug, Alcohol & Tobacco Prevention; and Violence.

The Toolkit provides access to all of the documents from which tools are extracted and aggregates related information and recommendations from these materials into a user-friendly format that makes it easy to customise a mix of interventions to develop effective school health programmes to address specific health issues using the FRESH framework. This joint effort demonstrates the extra value that can be obtained when agencies work collaboratively in support of school health.

Still in development, the proposed format for the FRESH CD-ROM Toolkit has been mounted as a Web site and can be viewed at the following address: http://www.unesco.org/education/fresh. Field testing of this draft version of the Toolkit is now underway, with distribution of the finalised CD-ROM scheduled for autumn 2004.

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Web Sites

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http://www2.edc.org/hhd/who/FRESH.htm
http://www.schoolsandhealth.org
http://www.freshschools.org

Annex B: Agenda

School Sanitation and Hygiene Education Symposium
The way forward: Construction is not enough!

DAY 1 TUESDAY 8 JUNE 2004

09.30-10.30 Introduction: SSHE the way forward

- Welcome by Mr. Paul van Koppen, Director of IRC, The Netherlands
- Opening of symposium and address by Ms. A. van Ardenne, Minister of Development Cooperation, Government of the Netherlands
- Ms. Vanessa Tobin, Chief, Water, Environment and Sanitation Section, United Nations Children's Fund (UNICEF), New York
- Mr. Darren Saywell, WSSCC-Programme Manager, Water Supply and Sanitation Collaborative Council (WSSCC), Switzerland

10.30-11.00 Tea/Coffee

11.00-11.30 Overview and objectives of the symposium

- Ms. Marielle Snel, IRC, The Netherlands

11.30-13.00 Keynote. The way forward: Opportunities and lessons learned

- Ms. Kathleen Shordt, IRC, The Netherlands (25-30 min)

- Panel discussion:
  Ms. Meena Raghunathan, Project Officer, Centre for Environment Education, India
  Ms. Belinda Abraham, Project Officer, WES-UNICEF, Malawi
  Mr. Ngo Quoc, Dung, Vietnam Program Manager, Church World Service - CWS, Vietnam
  Dr. Celia Maier, Partnership for Child Development, Imperial College Faculty of Medicine, London

13.00-14.30 Lunch

14.30-15.30 Development of SSHE from a global and national perspective

- Water, sanitation and hygiene in schools: Developments from a global perspective. Ms. Lizette Burgers, UNICEF-New York, USA
- SSHE in India: An investment in children. Ms. Sumita Ganguly, UNICEF-New Delhi, India

- Questions and comments from the audience.

15.30-16.00 Tea/Coffee

16.00-17.30 Review of themes and issues from the day

- Plenary feedback

DAY 2 WEDNESDAY 9 JUNE 2004

9.00-11.00 Educational strategies - Presentations

- Fresh initiative: Focusing Resources on Effective School Health. Ms. Celia Maier, Partnership for Child Development, UK
- Fresh Initiative on Internet. Ms. Cindy Joerger, Consultant, UNESCO

11.00-11.30 Tea/Coffee

11.30-13.00 Educational strategies - Presentations and discussion

- CHAST (Children's Hygiene and Sanitation Training) in Somalia. Ms. Esther de Vreede, Caritas Switzerland
- Joyful learning-Participatory Education Activities for Children and Educators (PEACE). Ms. Christine van Wijk, IRC, The Netherlands

13.00-14.30 Lunch

Launch of video 'SSHE PHASE programme' by PLAN International

14.30- 15.30 Case studies - Presentations and discussion

- CEI experience in closing the gap in school sanitation and hygiene education: Case study of Mable Parish, Nkoma sub-county, Kamwenge District, western Uganda. Mr. Kisembo Asuman, Community Empowerment Initiative (CEI), Uganda
- WASH campaign in Kerala- A holistic approach for the reduction of infant and child morbidity. Dr. M.K.P.Roy, Centre for Community Health Research, Kerala, India

15.30-15.45 Tea/Coffee

15.45- 16.30 Case studies - Presentations and discussion

- Sanitation, health and hygiene education to enhance the quality of life - The Ozwathini case. Ms. Sunita Doodhnath and Ms. Penny Gumede, Umgeni Water, South Africa.
- Primary school baseline study on water supply, sanitation and hygiene education in Lubombo and Shiselweni regions of Swaziland - Lessons learned. Ms. Poppy Dlamini and Ms. Khanyisile Mabuza, Umgeni Water, South Africa

16.30- 17.30 Discussion and review of themes

- Small group discussions and plenary feedback
- Consideration elements of a framework of action on SSHE

Evening: meeting of small groups for preliminary brainstorming over community of practice in SSHE.

DAY 3 THURSDAY 10 JUNE 2004

8.30-9.30 Presentations

Presentations of small groups' work on community of practice in SSHE.

9.30-11.30 Context of SSHE - Presentations and discussion

- Friendly and healthy school initiative. Mr. Felíx Hernandez, Ministry of Education, Nicaragua
- Integrated water, environment, and sanitation management for community-based, participatory, and sustainable school planning: The case of Nairobi, Kenya. Mr. René John Dierkx, Eindhoven University of Technology, The Netherlands
- Scaling up school sanitation and hygiene promotion and gender concerns. Ms. Rose Lidonde, WEDC, UK

11.30-12.30 Discussion of draft mini-declaration from working group

- Small group work on Framework for Action
- Plenary: improving the draft Framework for Action

12.30-13.30 Lunch

13.30-16.00 What are the next steps? Discovering possibilities for working together

- Group discussions

16.00-17.00 Closing remarks

- Presentation of the draft Framework of Action

Annex C: List of symposium participants

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Annex D: References

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Further information
More details on the symposium and the work of supporting partners in initiatives to respond to this statement can be found at:
www.irc.nl/sshe

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Other agencies supporting this initiative:
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- Caritas Switzerland;
- Centre for Environment Education (India);
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- Church World Service (Vietnam);
- Eindhoven University of Technology (the Netherlands);
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- Network for Water and Sanitation (NETWAS, Kenya);
- Partnership for Child Development (London);
- Plan International Headquarters, (London);
- Plan the Netherlands, (Amsterdam);
- SIMAVI;
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- Streams of Knowledge;
- Umgeni Water (South Africa);
- United Nations Educational, Scientific and Cultural Organisation;
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- World Health Organization.

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