Concept Paper

School sanitation and hygiene education: a background paper

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1. A shared vision for a clean and healthy world

Despite enormous achievements over the past two decades, an estimated one billion of the earth's citizens still lack safe drinking water while almost three billion do not have adequate sanitation. More than two million children die each year from sanitation-related diseases. (Vision 21, iii, 2000)

Over the next generation, what should life be like on our earth? A vision of what could – and should—be achieved was developed by the Water Supply and Sanitation Collaborative Council, following consultations around the world with people in communities, in NGOs, professional organisations and governments. *Vision 21,* as it is called*,* describes a future for water, sanitation and hygiene that could be like this by 2025:

*Virtually every man, woman and child on the planet knows the importance of hygiene and enjoys safe and adequate water and sanitation. People work closely with local government and non-governmental organisations to manage water and sanitation systems so as to meet basic needs while protecting the environment…. Everywhere in the world, people live in clean and healthy environments. Communities and governments benefit from the resulting improved health and the related economic development (*Vision 21, vi, 2000)

The children of today will be the adults of 2025, central to this vision of the future. By focusing on children today, by giving them tools and knowledge to change behaviours today, future generations can be stronger and healthier.

2. Defining school sanitation and hygiene education (SSHE)

School sanitation and hygiene refers to the combination of hardware and software components that are necessary to produce a healthy school environment and to develop or support safe hygiene behaviours. The hardware components include drinking water, handwashing and sanitary facilities in and around the school compound. The software components are the activities that promote conditions at school and practices of school staff and children that help to prevent water and sanitation-related diseases and parasites such as worms (UNICEF and IRC, 1998).

The framework for school sanitation and hygiene education will, of course, change depending on the situation. However these issues are usually benchmarks of:

Effective school sanitation and hygiene education in a school:

⇒ a healthy physical environment

- Keeping the compound and classrooms clean and free of waste and faecal matter
- Providing toilets that are designed for children (boys and girls)
- Providing convenient hand washing facilities
- Providing safe drinking water

⇒ Active and organized children

- Clean and convenient use of facilities by all children and teachers
- Consistent and organised cleaning and maintenance of toilets, hand washing and drinking water facilities by all children
- Roles for older children to help and monitor younger children is using facilities and maintaining school cleanliness

⇒ Trained and committed school personnel

- Head teacher and key teachers have been trained/oriented
- Learning in the classroom which is relevant and strives to be child-centred
- Educators make and carry out a plan for organizing children in use, monitoring and maintenance of facilities and in personal hygiene
- Planned programme exists for hygiene education, for example, involving school health clubs.

⇒ Links to home and community

- Key health and hygiene information and behaviours flow to the home
- Children and school are good examples and enter the community for special activities related to health and hygiene
- Families and community provides finance and other support for maintenance and repair of school facilities

Other important issues might include: school lighting, ventilation, warmth, and basic furniture which children need for a healthy learning environment.

Unfortunately, the promises of school health and hygiene programmes have not always been fulfilled. In many countries, schools are not safe for children. These schools often 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 handwashing facilities; Children with poor hygiene habits and handwashing 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 of children affects their ability to learn and therefore influences their perspective in life. The following box cites that water-related diseases caused an estimated 3.4 million deaths in 1998 alone.

Box 1: Data on water-related mortality

Disease	Death (000)
Diarrhoeal Diseases	2,219
Malaria	1,110
Trypanosomiasis	40
Intestinal worm infections	15
Dengue	15
Schistosomiasis	7
The majority of these deaths were children.	

Source: WHO 1999.

2.1 School sanitation and hygiene education (SSHE): What and Why?

The pre-school and the school are obvious focal points for reaching future generations with organized programmes that can instil health-creating behaviours and responsible attitudes. As compared to adults, children are more receptive to new ideas and can more easily change their behaviour. School children can spread important health messages and practices from school to home and are potential agents of change within their homes and communities. School children are tomorrow's parents. If they learn and practice good health knowledge and skills now and develop caring attitudes now they are likely to carry these forward to the next generation.

The goals: The goal of SSHE is social, environmental and individual health. *School sanitation and hygiene education focuses on development of life-skills, a healthy and safe school environment and outreach to families and communities.*
In essence school health promotion is an investment in our *future.* Its benefits can include:

- **Effective learning:** Children perform better if surrounded by a hygienic and clean environment.
- **Enrolment of girls:** The lack of private sanitary facilities for girls can discourage parents from sending girls to school and contribute to the drop out of girls, particularly at puberty.
- **Reduced disease and worm infestation:** If school sanitation and hygiene facilities are absent, or are badly maintained and used, schools become health hazards.
- **Environmental cleanliness:** Proper facilities will prevent pollution of the environment and limit health hazards for the community at large.
- **Implementing children's rights:** Children have the right to be as healthy and happy as possible. Good health and sanitation contribute to a happy childhood.

3. SSHE experience: a world-wide movement

It is almost impossible to imagine a school system or preschool which is not concerned with the health and hygiene of children. Personal hygiene and hygiene education continue to be given prominent places in schools and pre-schools in most industrialized countries. The roots of this are to be found, among others, during the early 19th century in the Scandinavian continuing education movement and the early school curricula of North American schools. Education in these continents was initially based on personal hygiene and hygiene education and only later was there a focus on the facilities themselves.

The early programmes, developed in the post-colonial periods within many African, Asian and South American nations similarly emphasized learning about personal hygiene. There were many instances, for example, when children learned (and sometimes still do) about the importance of hand washing and using latrines or toilets when these were not available in the school.

It is little wonder that many of the water and sanitation programmes for schools in the 1980s focused largely on construction and meeting construction targets. Some construction-oriented programmes did not sufficiently emphasize teacher training, the organizational needs of the school, and the hygiene education needs of the children, which are all crucial to effective use and maintenance of the water and sanitation facilities.

In addition to the above points, there are two further developments over the last 50 years which have made it difficult to create effective school sanitation and hygiene education programmes. First, school systems in many countries have retained a largely academic orientation, despite many efforts at reform. These are led, to a lesser or greater extent, by examination syllabi that do not include life skills such as hygiene or health education. As a result, these subjects are sometimes under-emphasised or omitted. Secondly, the growth of mass education has brought hundreds of millions of children into schools who would never have been able to attend in earlier generations. The influx has been so great that education systems could not provide sufficient facilities for hygiene and water.

Now this is changing. Many educational strategies which can support strong health and hygiene education are beginning to be implanted within the school. These include the development of the school as resource base, peer learning and peer teaching, programmes that stimulate child-to child education, child to family learning, school to community transfer. A good school sanitation and hygiene programme can benefit from these strategies *and* can support them. The new policy of the RCRSP, described later in this paper, is an excellent example of this.

3.1 SSHE and UNICEF role world-wide

Before 1982, UNICEF and its partners focused on hygiene education, and on angawadi and school sanitation (that is, on software, children and linking sanitation directly to children's health). There was in this early period no focus on sanitation hardware or technology within UNICEF itself. UNICEF itself became involved in sanitation construction projects for the first time in 1982, when it initiated a rural sanitation programme with three NGOs in West Bengal (Samanta, and Van Wijk, 1998).

In the 1992-1995 Medium-Term Plan, UNICEF promoted the linkages with other child related sector, including health and education. Instead of a purely sectoral approach, the child centred right-based programming became a *new paradigm* which included a focus on school sanitation.

Currently school sanitation is an integral part of more than 30 UNICEF country programmes and in many more programmes schools are involved in one way or another. Different approaches have been tried by UNICEF in different countries, ranging from the mere provision of facilities to hygiene promotion and broader environmental education. Valuable experiences on the development of children as potential agents of change within their homes and communities through their knowledge and use of sanitation and hygiene practices learnt at school, the training of teachers and other community members and the construction of separate schools sanitation facilities for boys and girls to increase enrolment and attendance of girls. Working with schools requires an integrated holistic approach with collaboration among different sectors, addressing issues of health, education, nutrition and water and sanitation.

One of the focus areas of UNICEF's intervention in this new decade is *"helping all children to enter and remain in school, by giving them the chance to learn in a child-friendly environment, to master basic education and to develop the social and intellectual skills needed for responsible life in a free society…"*. 'Child-friendly' and 'girl-friendly' school projects have already been initiated in a number of countries.

4. India: Water and sanitation coverage in India

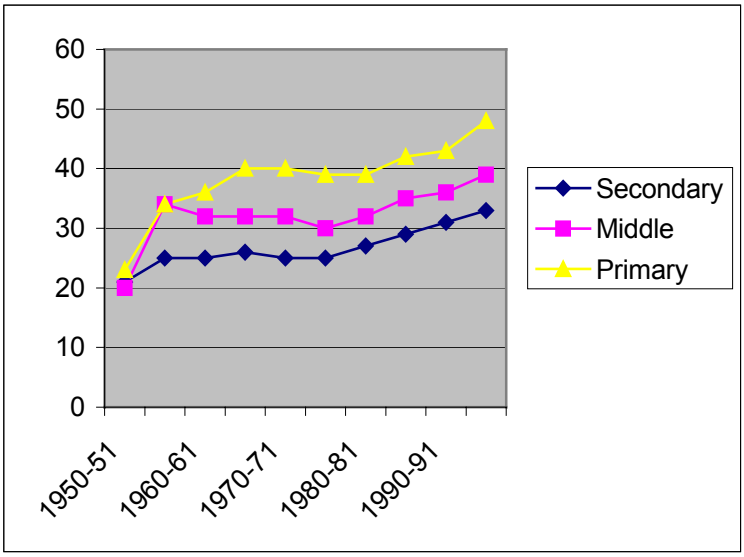
The tremendous achievements in India, and the enormous potential for material improvement are demonstrated by the fact that both real per capita income and life expectancy have doubled since independence. A challenging task remains, however, to ensure a decent life for all. One in six households in the rural areas still does not have what the GOI considers to be an acceptable water supply ("full coverage"), and sanitation coverage only reaches about one quarter of the people in rural and urban areas combined. Diarrhoea and other water and sanitation-related diseases still account for nearly 400,000 child deaths in India annually. There remain large differences in life expectancy, literacy, and other measures of well-being between the advantaged and disadvantaged people (Samanta, and Van Wijk, 1998).

As elsewhere in the world, progress in sanitation coverage has been much slower than that of water supply, particularly in rural areas. Rural sanitation coverage has increased very slowly and was estimated to be around 18% in 1994, meaning that more than 100 million rural households were without sanitation facilities (WHO, 1994).

4.1 SSHE in India

School hygiene education is not new in India. In the late 1950s through the 1960s, it was, for example, one of the tasks assigned to the multipurpose worker in the National Rural Development Programme. The relevance of SSHE is greater as India has achieved high and increasing enrolment rates across the nation. Unfortunately as the following graph indicates the ratio of number of pupils to teacher is schools has increased over the decades.

Graph 1: Pupil-teacher ratio in schools in percentages



Source: National Institute of Public Co-operation and Child Development, 1997.

5. Policy and programming

The literature regarding policies reveals that many countries specifically in the Asian context do not mention schools or teachers in their WES programme objectives. The 'Community Water Supply and Sanitation in South-East Asia Region' reviewed achievement and prospective policies for the 1990s among ten nations in Asia including India. Only two countries (Bhutan and Nepal) mentioned the theme of schools and teachers (WHO, 1993).

5.1 Current policy and programming in India

In the past SSHE has not been supported by a strong national policy. However this has now changed. The Restructured Centrally Sponsored Rural Sanitation Programme (RCRSP) has identified covering schools in rural areas with sanitation facilities as one of its six major objectives. Schools are central to its interesting new strategy

Rural school sanitation will be introduced as a major component and entry point for wider acceptance of sanitation by the rural masses.

Restructured Centrally Sponsored Sanitation Programme, 1998

The RCRSP has highlighted school sanitation and hygiene promotion in this way:

> *"Children are more receptive to new ideas and therefore the school is the best suitable institution in changing the conditioned habits of people from open defecation to the use of lavatory, through motivation & education. The experience gained by children through use of toilets in school and sanitation education imparted by teachers would definitely be carried home and passed on to parents, in most cases who do not have formal education. This has long been neglected. The Tenth Finance Commission had also drawn attention to this issue and has provided funds for toilet facilities in primary and upper primary schools. This initiative needs to be supported and pushed further."* (RCRSP, 1998)

In 1998, UNICEF and the Government of India agreed on a programme for the period 1999-2002. In the programme chapter 5 titled *Childs' Environment : Sanitation, Hygiene and Water Supply,* two main points of the programmes visualised by UNICEF are: focussing on educational institutions for behavioural change; and a more integrated approach to health. The programme calls for an Convergent Community Action (CCA) that is a promising approach to maximising the benefits from improved provision of related services. An examples include: convergence with education services (through improved school facilities, curriculum review, promotion of gender awareness, and community outreach) and health improvements (through diarrhoea control, community management of health and hygiene, community-based monitoring of measurable risk reduction).

5.2 Lessons learned

The wisdom of the future builds on lessons learned from the past. For SSHE, some of the key lessons from SSHE are outlined in the box below. In several nations these lessons learned are being incorporated into policies and programmes:

- **Sustainability** must be a major focus of the SSHE programme. A central SSHE objective is sustained behaviours and sustained facilities that are consistently used.
- **Safe water and sanitation facilities** should be in all schools.
- **More actors** are involved in the successful programmes. These can include: PTAs, parents, children, religious groups, CBOs, education, health and NGO personnel, WES programme personnel. They need clear and feasible roles that share authority and responsibility.
- **Integration or coordination of inputs and outputs.** The inputs and cooperation of different groups, at the right times, result in a programme which has qualitatively superior components for realistic investments (education, health, water and sanitation). This is particularly necessary:
  - among different departments in government,
  - among different disciplines,
  - among hardware inputs, educational software and community organisation.
- **Subsidized but demand-based**: Schools and communities cover some of the costs and demonstrate their demand in the programme. Finance often comes from various sources but must not be too complicated or bureaucratic to activate.
- **Flexible models and standards** work better because they can be adapted or developed based on local conditions and the water and sanitation and health environment.
- **Competition and control** are needed in construction. Construction monopolies (such as Government DPHEs or large contractors) are not always the most efficient, least costly or most honest in the construction for school programmes.
- **Capacity building and monitoring** with appropriate learning methods are essential for school and pre-school teachers and their supervisors. Relevant learning materials are needed. Most important, however, is the follow-up by supervisors and trainers at the school level. Lack of follow-up after one short training event has seriously weakened programming in many places.

It is crucial to review and incorporate the lessons from national and local programmes creatively and flexibly into future programming and policy.

The following box focuses on some of the main SSHE issues for policy makers. The policy maker has an important role in ensuring the success of SSHE. SSHE can be a popular programme among politicians because it shows concrete results in communities and is often popular with the constituents.

Box 2: Key issues for policy makers

Some of the special roles and issues for policy decision-makers in SSHE are:

⇨ *Political support and commitment*

- SSHE is *demand-based (not free).* Communities must contribute and participate.
- *SSHE is more than construction and coverage.* The impact of the programme comes through sustaining the facilities, using them as intended, developing healthy behaviours. Thus, SSHE is basically an education programme with some construction. This point needs to be accepted – and supported—by state and local government, by WES and education personnel, by the public at large. In successful programmes, people agree that SSHE is more than construction and includes hygiene education, continued maintenance, development of new behaviours, links with community. The politician and policy maker has a crucial role in advocating for this.

⇨ *Co-ordination and commitment*

Policy makers can stimulate *co-ordinated approaches and commitment* among different departments and specialisations. At same time implementation must be co-ordinated. Both safe water and sanitation facilities are needed. Construction must be controlled so that it is timed correctly with training and community mobilization. The policy maker can stimulate implementers to follow these guidelines.

⇨ *Clearing blockages*

Policy makers and managers can *clear away blockages.* This could be needed, for example, in the case where financing comes from different sources which can be complex. In the RCRSP sanitation subsidy (which dos not include water), the GOI/State share is 60% and 30% respectively with the balance 10% coming from the Panchayats/beneficiaries.

⇨ *Setting up minimum objectives, coverage and standards*

Policy makers help set the minimum objectives, coverage and standards. Flexibility is needed. Experience has shown that one uniform construction plan and model can not be relevant in all situations. The design and the decisions about who constructs depends on the situation. Small schools in active communities may wish to have all construction done locally. Larger schools might want to identify their own designs.

6. Education: issues and hygiene education

After the family, schools are most important learning settings for children and are central to life in the society and community. Schools can – and should- be stimulating environments for children. Schools can also influence communities through outreach activities, through their students, who are in touch with the whole community. Through schools, children can develop as learners, teachers, development agents and responsible adults. For SSHE, this implies that the programme should be organized within and outside the classroom with clear roles and tasks for all children in maintaining personal cleanliness, using facilities correctly, helping younger children to do the same, in cleaning the facilities themselves, among many other possibilities.

A survey among school children in India revealed that about half of the ailments found are related to unsanitary conditions and lack of personal hygiene. Children are future parents and what they learn is likely to be applied in the rest of their lives. They have important roles in the household, taking care of younger brothers and sisters, and depending on the culture, they may also question existing practices in the household. If children are brought into the development process as active participants, they can become change agents within their families and a stimulus to community development. They are eager to learn and help, and if they consider environmental care and their role in this as important, they will take care of their own health and the health of others. Being tomorrow's parents, children are also likely to ensure the sustainability of a programme's impact. To achieve this, teachers must be able, in simple ways at least, to become ***guides*** and ***motivators*** fulfilling the promise of the school as a resource base, providing opportunities for peer learning child-to child, school child to non-school going child, child to family, school to community support.

The SSHE programme can also help education systems achieve their own goals. SSHE will improve school facilities, can improve the health education programme, enrich the opportunities for personal growth among children by bringing life education into the classroom. At the same time, there are weaknesses and challenges that appear in many programmes. These include: rapid run-down of facilities, irrelevant curriculum, poor organization so that maintenance does not take place, lack of interest among supervisory staff in education department, little ability to visit schools for supervision because of weak organization or lack of transportation.

The following box indicates some of the key SSHE issues for educators.

Box 3: Key issues for educators

The following are some of the main special issues which educators in relation to SSHE need to keep in mind, namely:

- *Focusing on sustainability*
  At the school level, that facilities must continue to function, remain clean but be used as agreed by children. This implies a major focus among head-teachers and selected teachers in organising and training the children. School health clubs can also be useful here.

- *Identifying and emphasising hygiene behaviour*
  Identify and emphasise the most important **hygiene behaviours**. In some schools, for example, there is emphasis on nail-cutting but not on washing both. The priority should be reversed. At the community and school level, plans need to be made and carried out for repair of facilities, payment for repairs, preventive maintenance, ensuring participation of all children in cleaning (not just the poor children or low-cast children).

- *Developing capacities*
  High quality training of teachers, headteachers and community representatives is needed that uses appealing and effective methodologies. This implies that the old-fashioned 'guest lecturer' way of organising training needs to be changed. Experience shows that periodic training is far more effective in a programme than one-time events. Orientation of supervisors and headteachers who support the programme is also essential.

- *Focusing on supervision for teachers*
  This includes follow-up through a supervisory system and periodic visits to schools.

- *Developing education methods in the classroom and outside*
  Active learning including child-to-child experiences.

- *Concentrating on links to curriculum and testing*:
  This includes reviewing the syllabus and examination questions: teachers, head teachers and supervisors must believe it is important. This may include a review of the curriculum.

Within the context of India, there are some major constraints that can operate against the quality of any SSHE programme. These include:

- *Logistics*
  Educational staff, including supervisors often lack transport facilities needed to go for training or to monitor activities in schools scattered over a wide geographic area. This is a great challenge.

- *Size of SSHE programmes*
  Sheer size of the SSHE programme mitigates against qualitative excellence. In terms of schools within the rural Indian context, with an average of one teacher for every 50 children it is not usual to find the teacher/children ratios of 1 to 70. We must be careful not to expect or demand too much in such situations. Furthermore, the building of schools, classrooms and

water supply and sanitation facilities has not kept pace with the increase in numbers of children. Therefore the basic school facilities are not always sufficient to provide a healthy environment for children.

- *Facilities for teachers*
  Experience in India and other nations has shown that the needs of the teachers themselves must be taken into account in SSHE. Specifically, if there are no separate toilets or latrines for teachers, they will often appropriate one or two of the children's facilities. This can not, in fact, be controlled. Therefore it is important to take this into account when deciding on the number of latrines being constructed.

Early planning, before programme implementation, can help anticipate problems arising from the above issues specifically logistics and the sheer size of the programme in India.

7. Health: issues and hygiene education

Having access to a safe water source or a latrine does not automatically mean that hygiene and health will improve. The crucial issue is human behaviour, that is, what people do. Investigations have shown that even in the absence of latrines, diarrhoeal disease can be reduced through improved hygiene behaviour (WHO, 1993).

Table 1: Impact of the promotion of personal and domestic hygiene on diarrhoeal disease

Location	% reduction in diarrhoeal disease
Handwashing	
Burma	
USA	30
Bangladesh (urban)	48
Combination of practices	35*
Bangladesh (urban)	26
Bangladesh (rural)	>40**
Guatemala	14
Zaire	11

* Impact on Shigellosis
** Impact seen in both interventions and control areas; reduction due to interventions is approximately 17%
Source: WHO, 1993

This comparison of studies from different countries shows reductions in diarrhoeal disease which range from 11% in Zaire to 48% in the USA. In Bangladesh, studies show that children with more contaminated hands were three times as likely to have diarrhoea than those with less contaminated hands (Henry and Rahim, 1990). There also is a strong correlation between mothers not washing hands before food preparation (Clemens and Stannton, 1987) or following cleaning a child after defecation (Saran and Gaur, 1981) and an increased risk of diarrhoea. In addition research shows that the quantity of water used for domestic and personal hygiene plays a very important role in reducing the incidence of diarrhoea (Huttley, 1992). All of this demonstrates the importance of hygiene behaviour and the point that sanitation goes far beyond implementing hardware. Building facilities cannot be the single indicator to measure the success or failure of a sanitation and SSHE program (Samanta, B., and Van Wijk, C, 1998).

The role of the health sector in SHHE programmes also goes beyond prevention of diarrheal disease. It can relate to issues such as the following:

- School health surveillance with input from health sector professionals, teacher training and mobilization of children

- Dental screening for fluorosis, the results of which ***must*** be acted on. This can require co-operation between WES officials and health department personnel.

- Prevention of parasites and deworming. It is common for 1 in 4 children to have parasites. In some societies as many as 90% of the children have worms. See following box about the role of the school in this.

- Anaemia can be caused by sheer poverty, by parasites, by lack of knowledge about healthy eating practices, among others. Anaemia surveillance is relatively easy to undertake although it requires training of teachers and a sensible programme for improving the situation.

- Some research (in Malaysia during the 1970s, for example) has shown that intestinal parasites can be transmitted through food vendors outside school compounds. Monitoring school vendors is important although it can be a difficult task.

- Quality of the school construction/design. Some schools are designed centrally and may not be suitable for the local environment. Others may just be in such bad repair that they endanger children. Challenges can include: temperature (too hot/too cold), flooding in rainy season, holes in the roof, lack of desks/chairs/furniture, lack of safe storage space for learning materials and school property. These challenges are unfortunately often easier to identify than to solve.

The following are some of the key issues which the health department should keep in mind.

Box 4: Key issues for health departments and professionals

There is a variety of support which the health department can give at the institutional, financial, and/or social level.

- ⇨ policies need to be in place which ensures that the health department policy enables support for SSHE. Those working in the health department should also be empowered to take action on the part of the school.
- ⇨ problems related to the physical school building as well as the training of health staff who can then train and orient school educators and/or assist school children themselves need to be tackled.

8. Organisational and management issues

There are a number of aspects to be considered in terms of organisational and management issues. Key issue for the SSHE manager, at the national, state or district level include:

- *Defining clear roles of all the actors directly or indirectly involved in SSHE;*
- *Focusing on close monitoring of these actors*
- *Organising regular visit to schools to monitor and evaluation the SSHE situation*
- *Developing and implementing refresher training courses for teachers*
- *Ensuring efficient release and deployment of funds for water and sanitation facilities as well as training*

Another element which is essential for SSHE managers is a clear insight to creating and working with *demand-based SSHE programmes*. One of the main challenges of SSHE remains the need for different professions involved in the sector to take a more multi-disciplinary and integrated approach to assessing, and planning to meet, the effective SSHE demands of communities. Ensuring demand responsiveness requires a coherent set of programmes and project rules and supportive implementation and operational procedures. Careful attention needs to be paid to the design of appropriate institutional and financing options and to mechanisms for channelling information to communities and to other stakeholders.

9. Facilities: issues regarding quality and standards

Many countries have focused on developing standard school and classroom designs. Yet results have often been poor either because their authors did not recognise that conditions on the ground are not standard, or because provision for complementary aspects such as water and sanitation facilities, security, furniture and maintenance were neglected (WHO, 1997).

In terms of facilities for schools within the Indian context, the focus should be on 'sustainable' use. The focus of SSHE facilities should be a 'minimal' design. A 'minimal' design in this context means that it is simple and can easily be adapted. By having a 'minimal' design it is possible to adapt the facilities according to the specific school. At present most schools around India have standardised/minimal models. These models are characterised by easy operation and maintenance, year round operation, as well as being user friendly[1].

In term of construction, there are a number of issues with specific reference to India, namely:

- costs and cost control
- construction quality, spares, repairs,
- who constructs
- training of small contractors and masons
- varying the plan: availability of water, difficult conditions

The underlining issue is that poor or deteriorating school environment is not conducive to the good health of pupil.

[1] In terms of schemes on the actual construction of the school sanitation facilities, the Rajiv Gandhi National Drinking Water Mission Guidelines has proposed that the school authorities and Parents Teacher Association (PTA) should be responsible for mobilising an initial corpus of 5% of the unit cost. The unit cost should not exceed Rs.20000/- (RGNDWM, 2000). Once this is in position, the construction of the unit can be taken up. A sample design with cost estimates are given in Appendix 1.

10. Conclusion

- **There are major links between school sanitation and hygiene education and development.** If SSHE continues to improve in India, various health, social and economic benefits would also accrue. Besides the number of deaths which would be avoided, children will have the chance for a better education. Increasing number and standard of school latrine facilities would decrease the dropout rates especially for adolescent girls. Together, these improvement would also result in increased personal dignity and a greater sense of national pride. No other single intervention could do so much to improve health and socio-economic development.

- **More research** in needed to solve the following SSHE problems specifically regarding

⇨ **Hygiene promotion techniques** which emphasis the role of the child. Until now little research exists focusing on the various types of techniques which could be used to promote hygiene education specifically related to the school child.

⇨ **Technical designs for difficult water and sanitation conditions** as some schools require special attention due to high water table areas, hard-rock areas or other difficult topographical issues. More focus should also be placed on recycling options for excreta, solid and liquid wastes.

- **National level work on legislation, policy and guidelines which should focus on** increasing inter-sectoral collaboration between the various stakeholders in SSHE. This would include research and development in SSHE, technical designs and hygiene promotion techniques.

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Appendix 1: General Guidelines for Implementation of Restructured Centrally: Sponsored Rural Sanitation Programme (RCRSP) during the 9th Plan.

The Table-1 below gives the percentage share of the allocation (i.e. the total approved TSC project cost) for different components of a TSC and the GOI/State/UTs share and the beneficiary contribution towards each component.

Table - 1

Sl. No.	TSC Components	Amount earmarked (as %age) from the total TSC project cost*	Contribution (as % age) ---------- GOI	State	Beneficiary
a.	Start-up Activities (Preliminary Surveys, Initial Publicity, etc.)	Upto 5%	100	0	0
b.	IEC (motivational campaigns, advocacy kits, incentive to motivators/TSC village etc.)	At least 15%	80	20	0
c.	Alternate Delivery Mechanism (PCs/RSMs)	Upto 5% - Minimum of Rs.35 lakhs per district @ Rs.3.5 lakh/ PC/RSM	80	20	0
d.	Provision of Hardware ♦ (individual household latrines and Sanitary Complexes for Women)	Upto 60%	60	20	20
e.	School Sanitation (Hardware and support services)	Up to 10%	60	30	10
f.	Administrative Charges including training, staff, support services, M&E etc.	Up to 5%	80	20	0

* Criteria for Allocation of Central Assistance to States/Uts for Implementation of "Allocation Based" Sanitation Programme and its Utilisation by States Of these funds: up to 60% can be utilised for giving the GOI share of the subsidy required for individual sanitary latrines for BPL beneficiaries and or institutional latrines; and at least 5% to be used for School Sanitation

Source: Guidelines : Restructured Centrally Sponsored Rural Sanitation Programme (RCRSP) / India. Rajiv Gandhi National Drinking Water Mission -IN. - New Delhi, India: Rajiv Gandhi National Drinking Water Mission, 1998. – p.32.

Appendix 2: Case studies on SSHE from Asia, Africa and South America

Case study 1: A school for a growing population: Bogotá, Colombia

Background: The capital of Colombia, Bogotá, is a classic example of a Latin American city which, over the last 30 years, has undergone a dramatic transformation through the large scale and rapid growth in informal settlements. The Barrio Vista Hermosa is in one of the oldest part of Ciuda Bolivar and is around 30 years old. The school of San Rafael was formed by a committee of parents in Barrio Vista Hermosa early in the life of the settlement. In many ways it is typical of an urban school in Latin America. The original school building was built by the community, and over the years, the school has spread up the steeply sloping sites in a piecemeal way. There are now 19 classrooms. The school now has 1400 pupils ranging from 5 to 14 years old. They are taught in two shifts of 700 pupils each by 22 teachers. Unfortunately, at the school, there is one toilet for the teachers a further 20 for the pupils. Approximately 30% of these toilets are in some way damaged but the rest are functioning.

Conclusion: San Rafael is neither an exceptionally innovative school, nor particularly bad. But it illustrates that people on the margin of Latin American urban society are keen to have schools for their children and prepared to invest their time and resources to obtain them.

Source: WHO, 1997.

Case study 2: Schools in a hot, dry climate: Rajasthan, India

Background: The state of Rajasthan in north-western India has a typical desert climate: hoot and dry, with extreme temperature variation between night and day. Rajasthan has a population of about 47 million people, living in over 50 000 villages and smaller communities. Many of these are located far away from any road usable by motor vehicles. There are an estimated 10 million primary school-age children (6-14 years). Officially there are about 37 000 primary schools in Rajasthan. In addition, thousands of informal education centres cater for children unable to attend formal school.

Most of the schools consist of a stone or concrete building with two or three classrooms and a veranda on one side. Some schools have no classroom accommodation. Others have no more than a simple teaching space of mud and thatch. According to the Fifth All-India Educational Survey, there are more than 6000 schools without any building or with buildings made of non-permanent materials. About 5000 communities are not served by a school at all.

The standard classroom in Rajasthan has heavy masonry walls and small, shaded window openings. It is primarily designed to protect its users against excessive heat, yet for a large part of the year, temperatures inside these classrooms are far below what is required for comfort.

Conclusion: This case study shows that conventional primary-school buildings in Rajasthan are poor and potentially health threatening environments. Teachers and students are able to cope with cold, poor light and overcrowding by using a variety of open and semi-open teaching spaces. Other deficiencies, particularly lack of water and sanitary facilities and inadequate maintenance, require attention.
Attempts are being made, however, to reorder priorities through the Lok Jumbish Programme for Improvement of Primary Education in Rajasthan. Village education committees have been formed and village-based funds established for the repair and maintenance of school buildings. Between 1992 and 1996, building development work began in 800 villages. A large number of architectural and engineering consultant continue to participate in this unique research and development effort. The Lok Jumbish programme, with its emphasis on maintenance and repairs, construction of boundary walls and the creation of ‘gardens of learning’, is now beginning to have an impact on the general school building programme of the Rajasthan Government.

Source: WHO, 1997.

Case study 3: Schools made by people: Kenya

Background: Kenya shares many of the characteristics of other developing countries. More than 50% of its population is under 15 years old. The projected population growth indicates a doubling of the number of school-age children every 17 years. But where Kenya differs from many countries, is that rather than seeing this as a massive problem to resolve by central governments, Kenyans are using traditional methods of community self-help to tackle the problem from the bottom up.

The formal schooling system in Kenya was initiated by Christian missionaries in the mid-19th century. By 1950 three-quarters of schools were missionary schools. From the outset, the normal course was for the local community to provide land and buildings while the missionaries provided trained teachers and teaching materials. However, many communities became dissatisfied with the type of education offered and, since they were already providing the school facilities, decided to break free of the missionary system and set up their own schools.

To this day, the central government does not get involved in primary school construction (except in some exceptional circumstances, such as schools for nomadic groups). The Ministry of Works provides prototype designs for schools and there are regulations governing materials and standards. However, it is clear that these regulations are not rigidly imposed since many schools are built of mud and thatch which is explicitly prohibited. Also, unlike in many other countries, the Kenyan primary school is not a static creation; there is a steady process of gradual improvement. A school may start as a simple hut of mud and thatch but gradually become transformed into a complex of concrete and corrugated-iron classrooms.

Conclusion: Even though the Kenyan government has never financed the construction of primary schools, most communities now have sufficient basic facilities to ensure that their children receive eight years of schooling. While the standards of construction, furniture and maintenance cannot be described as high, they are in fact higher than in neighbouring countries where schools are provided by government. The conditions which have made Kenya's achievement possible can be listed as:

- The high priority given to education by local communities;
- The well-established tradition of communal self-help;
- A consistent government policy, since independence, giving the local community responsibility for the construction of schools and teachers' houses, the provision of furniture and maintenance;
- No government interference in design, choice of materials and construction methods.

Source:WHO,1997.

Appendix 3: Designs of school sanitation facilities