

Seven Flags Approach of Total Sanitation (7FATS) in School: a conceptual frame work

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Abstract: Public health and economical productivity are just some of the things hampered due to poor sanitation. School sanitation with different approaches is one of the effective interventions in sanitation movement; however, these interventions mostly focus on controlling open defecation. Few approaches, on total sanitation have not shown any good results. Similar to other least developed countries, Nepal estimates 1650 deaths of children below the age of 5 every year due to poor sanitation, hygiene and lack of safe water supply. Additionally, there is no adequate monitoring mechanism for availability and continuity of WASH facilities and practices in schools. Keeping in mind the sustainable-development goal indicators on water and sanitation (Goal 6), a concept of seven flags approach of total sanitation(7FATS) has been suggested, where 7 implementation steps can be used as systematic approach to meet 7 major indicators of total sanitation, each with five sub-indicators. If a school meets the standard of each indicator, to a certain level, it will be declared a 7FATS school.

Keywords: School sanitation; hygiene; water; 7FATS

Introduction

It is estimated that each year over 800,000 children of age below 5 years die from diarrheal diseases, mostly in developing countries. This is 10.5% of the total estimated children (below 5), deaths of 7.6 million a year, which means about 2,200 children are dying every day (Liu, 2012). School children aged 5-15 years have the highest infection rate and suffer from worm burden that attributed by poor sanitation and hygiene (Luong, 2003). The simple act of washing hand with soap and water at critical times can reduce diarrhoea by one third, while improved sanitation and drinking-water quality, such as point-of-use disinfection reduces diarrhoea morbidity by 37.5% and 45 % respectively (UN, 2005). Access to sustainable sanitation facility and good sanitary behaviour not only ensures dignity of the individual but also positively impacts health, well-being, economic productivity and overall development of a nation (WHO 2004). For sustainable WASH, the sanitation system should meet different criteria such as being economically viable, socially acceptable, technically and institutionally appropriate, and protective of the environment and the natural resources (SuSanA, 2008).

Importance of school sanitation and hygiene is prioritized and elaborately described in different documents since a long back (UNICEF/IRC, 1998). But, many schools, even now, particularly those in rural areas, often completely lack safe drinking-water, sanitation facilities and hygiene education. If WASH facilities are absent, or are badly maintained or used in a school, students are at risk for diseases to be transmitted. Schools with poor water, sanitation and hygiene conditions, and intense levels of person to-person contact are at high-risk of environmental health hazards too. Girls suffer more because of inadequate sanitation and privacy concern during their menstruation period, which forces many school girls to be absent from school, and increase school drop-out (WHO, 2009, Lidonde, 2004). If WASH facilities in schools are in excellent condition, they can act as a model, and teachers and students can function as role models. Schools can influence communities through outreach activities as through their students, they are in touch with a large community. While students play a role as effective messengers in their community, they also learn and develop a lifelong skill that they are likely to maintain as adults and can pass on to their own children (WHO, 2009). Hence sanitation and hygiene is extremely important in school.

A concept of School Led Total Sanitation (SLTS) was developed in Nepal with a comprehensive program package to empower schools and communities for eliminating Open Defecation (OD) from schools' catchments and promoting Hygiene and Sanitation by using students as changing agent (Adhikari, 2010). As a result, SLTS played major role for declaring thousands of school catchments as OD free communities. School sanitation and hygiene needs to be implemented in an organized step-by step approach. WHO (2009) has set water, sanitation and hygiene standards for Schools in Low-cost settings; and different approaches (UNICEF & giz, 2013; Ganguly S 2004; Esther de Vreede 2004; Celia Maier and Cindy Joerger, 2004; WHO, 1998) to improve water, sanitation and effectiveness of hygiene behaviour in school, are in practice. In the context of Sustainable Development Goal (SDG), focus has been given to schools and health facilities and WASH sub-indicators are just being developed in national context. However, it is always challenging to make sustainable use of WASH facilities in school. Also, the existing total sanitation programs are not totally covering the WASH components. Hence, the concept "Seven Flags Approach of Total Sanitation (7FATS) in School" developed in this paper deems regular use of clean toilets, washing hands with soap and safe drinking water as the minimum requirements and also focuses on the following broad aspects of total sanitation:

- Each child washes both hands with soap after using the toilet and, highly desired, before eating.
- Each child will use a clean toilet or urinal consistently.
- Each child will be able to drink safe water supplied by the school.
- Adequate menstrual hygiene facilities will be available at school.
- All WASH facilities are equitably available to all students, regardless their physical and social condition
- Each child consumes hygienic and safe food
- The overall environment of the school is clean.

Material and Methods

This paper is limited to develop a concept and guideline for total sanitation in school in Nepal's context; hence, peer review of literatures on sustainable school sanitation globally and Nepal were carried out and a list of indicators, regarding total sanitation in school, were picked out. To achieve the indicators, a step-wise guideline has been suggested.

Sustainability of school sanitation

In most of cases, water supply is major cause leading to the failure of sanitation. Regrettably, despite increasing efforts to improve school sanitation and hygiene services for many years, in low and even medium-income countries, no remarkable change or improvement can be seen (Greene, et al., 2012; Lopez-Quintero, et al., 2009; Mathew, et al. 2009). Infrequent hand washing with soap, poorly maintained toilets and open defecations are often being observed within a time laps of intervention (Mathew, et al. 2009; Saboori, et al 2011). Normally the hand-washing practice in students is found to be better in the schools with necessary facilities than in schools without the facilities. However, there is evidence that in some schools the facilities are not used consistently and hence construction of facilities alone is not sufficient to ensure good WASH in schools (Njuguna, 2008).

WASH in School; Nepal experience

As per world health statistics and national demographic health data (WHO, 2015; NDHS 2011), it can be estimated that every year 1650 children of ages below 5 years die in Nepal from diarrhoea which is caused by unsafe water and poor sanitation. Although National Management Information Project (NMIP) and other national data have shown very good progress on sanitation, the MDG target on sanitation was not met (UN 2015). On top of that, as per Post Disaster Needs Assessment report PDNA (2015), 8242 community(public) schools have been severely affected by the April earthquake 2015 with damage done to more than 47000 classrooms, 4,416 toilets and WASH facilities including water supply systems that are yet to be reconstructed.

National Sanitation and Hygiene Master Plan (GoN, 2011) has brought the concept of total sanitation that includes all arrangements leading to sustainable hygiene and sanitation facilities and behaviours. One of the indicators suggested to ensure that a Total Sanitation situation is achieved in the given area is that all schools must have a child, gender and differently-abled(CGD) friendly water, toilet and hand washing (with soap station) facilities, including menstrual hygiene facilities. Additionally, schools must have garbage pit facilities within the school premises. They also should keep their environment clean and hygienic. Total sanitation concept developed by WHO/DWSS, piloted in many parts of Nepal since 2010, gives a very clear concept of 5+1 indicators of total sanitation and its implementation guideline.

School Sector Reform Plan 2009-15 (SSRP) envisages minimum enabling conditions in all schools that cater for the diverse needs (physical and learning environment) of students (GoN, 2009). National framework of Child Friendly School, 2010, has set few minimum standard for physical conditions of the schools such as separate toilets for girls and boys, one set of toilet for every 50 pupils, separate arrangement of urination and defecation with running water, regular cleaning provision, toilets with doors and windows that can be bolted from inside and shut and opened easily (GoN, 2010). Drinking water availability from a tap with potable water within school premises and or provision of drinking water with a filter in every classroom of school are other drinking-water-quality related indicators. The key role of Ministry of Education is to promote WASH in educational institutions and develop curriculum and educational practices on WASH services. The concept of child friendly schools (2010) introduced by the Ministry highlights friendly standards on WASH services and hand washing practices which is being further strengthened through WASH in Schools (WinS) Programme.

Results and Discussion

Seven essential indicators and 5 sub indicators for each indicators of total sanitation in school have been developed and presented in Table 1. Some of the indicators have been supported with standards, as developed by WHO (2009).

Table 1 Indicator of 7 FATS

Indicators	Sub-indicators	Standards / way of monitoring
Use of toilet	Separate toilets for boys and girls	One per 25 girls and one for female staff; one toilet plus one urinal per 50 boys, and one for male staff
	Cleaning mechanism (How, where, who, when)	Cleaning and maintenance routine is in operation. Proper sludge/ sewage management.
	Sufficient water	10–20 litres per person per day for conventional flushing toilets, Pour-flush toilets 1.5–3.0 litres per person per day, Anal washing 1–2 litres per person per day
	Hand washing facilities	Toilets have convenient hand-washing facilities close by.
	Adequate privacy and security	Sufficient privacy; toilets should be carefully located, and they and their access routes should be lit if they are used at night
Hand wash and personal hygiene	Hygiene education	Hygiene education is included in the school curriculum
	Hand washing	At critical time and in a proper way
	Brushing teeth	Physical observation
	Nail and hair clean and cut	Physical observation
	Body, cloth and personal behaviour	Physical observation
Menstrual hygiene	School absence	Interview and observation
	Practice of untouchability	Interview and observation
	Use of hygienic sanitary pad	Interview and observation
	Disposal of sanitary pad	Interview and observation
	Availability of sanitary pad	Interview and observation
Equity in WASH	WASH for disable people	Interview and observation
	Discriminations by caste/sex/religion	Interview and observation
	Safe water accessible for all	Interview and observation
	Toilet accessible for all	Interview and observation
	Fee, dress, and stationary, affordable for all	Interview and observation
Safe water	Sufficient quantity	5 litres per person per day for all schoolchildren and staff
	Water from safe source	free of pathogens and protected from contamination
	WSP in place	Knowledge and practice
	Treated or PoU	Knowledge and practice
	Acceptable	Taste and odour of drinking water needs to be acceptable to school children and staff
Safe food	Lunch/snacks in safe container	
	Heating facility	
	Safe food available at school (inspected)	Safe water and safe raw ingredients are used, thoroughly cooked and safely stored
	No unhygienic food sold around	
	Food is prepared with safe water and raw materials	
Clean	Provision of adequate dustbins	Solid waste is collected from classrooms,

Environment		kitchens and offices daily and is disposed safely.
	Solid waste management with segregation	Free of sharp objects and other physical hazards.
	Well maintained garden and play ground	
	Clean class rooms	Classrooms and other teaching areas are regularly cleaned, to minimize dust and moulds
	Liquid waste management	Wastewater is disposed of quickly and safely

To achieve the indicators, a clear guideline has been developed and presented in a step-by-step as follows:

1) Team formation

Sanitation team of a school consists of 7 teams each for seven different indicators. All the teams will be led by a captain (student) in an overall guidance of a health teacher. On Fridays the health teacher will conduct sanitation and hygiene activities, while other days, he/she will teach the regular health syllabus, Friday will be celebrated as sanitation day. All seven captains will select a vice-captain from a grade below to assist them and take the responsibility in the absence of the captain. Two day training on 7FATS is will be given to the 15 members of the team.

2) Situation analysis

After having the training, the sanitation team will analyse the existing sanitation situation of the school. The quantitative score of each indicator will be calculated. Based on the score, the flag standing position will be recommended by an evaluation team. But, the score will be announced only on the day of sanitation conference.

Flag position, based on the quantitative scores, has been recommended as shown in Table.2:

Table 2, Corresponding flag position depending on the indicator score

S.No.	Score	Flag Position	Remarks
1	Less than 25%	No Flag at all	
2	25-50%	Ground	
3	50-75 %	Half	
4	More than 75 %	Full	

3) Sanitation Conference at school

After having the training, sanitation team will organize a sanitation conference at school. In the conference, all students will be informed/taught about 7FATS and school will launch 7 flags with the designated colours and the team captain will receive a dress analogous to the flag colour. In the conference, all students will participate in composing a sanitation song; a song will be selected for singing on the sanitation day (each Friday).

4) Promotional Activities

The schools can organize various activities such as games/quizzes, group hand washing, training, study tours and cultural program with competition, to actively participate and encourage the students to be committed towards making their school sanitary.

5) Fund raising activities

The cost of the 7FATS activities will vary depending upon the location and capacity of a school; however, a tentative estimate of the program is given in table 3. First time the piloted school may receive support from external agencies; but some fund for awards and maintenance need to be managed by the school in the following years. Schools will also require funds for the different materials required and to run various activities, so fund raising activities too can be organized. Every year, the students will raise money playing Deusi/Bhailo in Tihar. Purchasing and re-selling of popular consumer products, auctions and raffles, popular fundraising activities practiced in developed countries, are other ways to collect substantial revenue for the school. Even though these type of activities are not completely viable in rural parts of Nepal, students can try to make best use of the locally available resources and facilities to conduct similar activities.

Table 3: Cost estimate of 7FATS activities:

S.No.	Activity	Cost (USD)	Remark
1	Training	2500	External support
2	School Sanitation Conference	500	Every Year (first time external support)
3	Award for song composer	50	Every Year (first time external support)
4	Uniforms for Sanitation Team	150	Every Year (first time external support)
5	Flags	150	External support
6	Promotional Activities/maintenance	500	First time external support
7	Situation Analysis	100	First time external support
8	Rewards	50	Every Year (first time external support)
Total		4000	

6) Reward and recognition:

To build momentum in WASH in schools, consider student rewards and recognition to reinforce a desired behaviour, and to acknowledge a special accomplishment in enhancing the knowledge or learning a subject matter. This will develop good leadership, strengthen and build teamwork and confidence. Hence, reward and recognition is essential in school for noteworthy accomplishments/works. It is vital as this approach depends on everyone's voluntary involvement and awards/recognition will be a motivational factor. Hence, rewards (awards) are proposed as per the Item no. 3 and 8 of cost estimation shown in Table 3.

7) Declaration of 7FATS school

After all flags are fully raised, the school will be considered to be declared as 7FATS. But, for its sustainability, monitoring and evaluation, mechanisms need to be developed by DWSH CC.

Challenges, recommendations and conclusions

The current ODF movement, especially through SLTS in Nepal, has created an enabling environment to develop school and student as the role model in sanitation and motivate communities to build toilets and to stop open defecation. Different coloured flags have been

integrated into this approach as many schools already have erect flags in their premises to invoke a sense of competition and standard. There is also practise of dividing students in different groups (houses) and making them compete against one another. Hence, these practices can be adopted for the purpose of maintaining WASH in school. Dedication of a day for sanitation plays a vital role to highlight the importance of total sanitation and make 7FATS successful with reward and recognition being motivational factors. However, major challenge still remains on the issues of the coverage of other total sanitation indicators and overall sustainability. Challenges and recommendations for the success of the concept of the WASH in school through 7FATS will be detected only after implementing/piloting the concept; however, some of the predicted challenges are as follows:

- Lack of water supply facilities in many schools.
- Lack of sustainable resources especially for promotional activities, rewards and recognition.
- Advocacy and motivation at decision makers and high management
- There are too many approaches for school sanitation, so complete attention may not be given to 7FATS by the stakeholders.
- Making water safe is not always so simple
- In many rural schools, availability of food is problem itself.
- The student captains can only be temporary as they will graduate or may leave school at any time.

Some of the recommendations for successful implementation and strengthening of the concept of the 7FATS approach are as follows:

- Integrate with the on-going program under ministry of education
- In all new water supply and sanitation programs, initiate 7FATS as an integral part.
- Promotional activities need to be planned as per local need, situation, resources and culture.
- Not only a study visit of model schools in sanitation, but a comprehensive partnership needs to be developed between two schools for sharing experience and good practices. In that way, a school can get help from another school that has done comparatively better.
- In case of lack of water supply, a dry urine-diverting toilet could be a better option to manage sanitation in school in an affordable and sustainable way, and also to protect groundwater against infiltration of human excreta. However, in order to make it more sustainable, regulations on the adoption of urine-diversion systems and the reuse of the human excreta in agriculture are needed (Samwel, M and Gabizon S. 2009).

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