

Ecological Sanitation in Sagarbaganje High School

Background

Many people in the world today are facing numerous water and sanitation problems. Globally, 1.1 billion people lack access to safe drinking water and 2.4 billion to adequate sanitation facilities. In Nepal too, access to sanitation system has still not shown much improvement. The total sanitation coverage in the country is only 25%, with 21% in the rural areas. Much of the sanitation improvements in Nepal are taking place in the urban areas, as it is difficult to motivate people in the rural areas to shift from the traditional open defecation system to the latrine system.

Another challenge in sanitation provision is the definition of sanitation itself. WHO has defined improved sanitation as having access to a public sewer, connection to a septic system, a pour-flush latrine, a simple or a ventilated improved pit latrine. The same definition is being used as a basis to formulate and implement programs on sanitation in Nepal. However, while doing so these programs have not given much thought to the type, design and impact of the facility on public health and environment. Hence, these sanitation programs have brought problems like water source contamination, spread of diseases, etc.

Ecosan – An Alternative Approach to Sanitation

In the recent years a new approach to sanitation has been introduced to prevent pollution and to recycle the nutrients in human excreta back to the soils after adequate treatment. This is an ecological approach where water use is minimal or negligible with minimal or no release of wastewater. Therefore, with ECOSAN there is no risk of surface water and groundwater pollution and can be taken as an appropriate technology for areas or communities without sewerage and the necessary treatment facilities and/or without adequate water supply.

Here, urine and faeces are separated at source, excreta are sanitised prior to recovery and reuse. Urine is utilised as fertilizer and faeces as soil conditioner. Thus, human waste is reused and the nutrients are recycled back into the soil, forming a closed loop system as opposed to the conventional system where the nutrients are wasted and not returned to the soils.

Present context and rationale

Sagarbaganje High School located in Solukhumbu was established in 1970 with the noble thought of providing basic education to the local children. Today it provides education not only to the local children but also to children from other villagers, near and far. With BB students out of which CC are girls and DD are boys, the school faces a major challenge of providing toilet facility for the students. Lack of proper toilets is a major problem especially with girl students as they do not have access to safe, hygienic and private toilets that they can use. As a result, girls come to school without drinking water or they will not drink any water during the school time with fear of needing to relieve themselves. This can have a very negative impact upon the health of the girls. Another problem for the girls is when they have their monthly menstrual cycle. When they gather the courage to go and relieve in the open, there is

always fear of molestation and shame when boys peep at them or play jokes. It is normally seen that the drop out rates increase with girls as they grow up.

Looking at the present sanitation conditions it has become urgent to provide toilet facilities to the students. However, a correct choice has to be made. It is becoming a trend among people in many villages to connect their toilets to the streams or rivers, leading to a major health and environmental hazard. Pits are also not a sustainable option for these places as they leak and become unhygienic. Therefore, this proposed project aims to establish 5 ECOSAN toilets with separate urinal facilities for both boys and girls. This will not only provide the students with toilet facility but will provide villagers with the much required fertilisers in the form of human urine and soil conditioner in the form of human faeces. This will prove to be a sustainable and viable alternative to toilet facility for this village.

Objectives

The major objectives of this proposed project are:

- Provide toilet facility to the students of Sagarbaganje High School
- Introduce a sustainable and ecofriendly toilet to the community
- Encourage people to use human urine as fertiliser and faeces as soil conditioner

Activities and outputs

SN	Activities	Outputs
1	Initial assessment visit	<ul style="list-style-type: none"> ○ Understand the location, know local people, students and teachers of the school ○ Collect details for designing the toilets
2	Design	<ul style="list-style-type: none"> ○ Design of the toilets is in hand with emphasis on using locally available materials
3	Purchase the construction materials	<ul style="list-style-type: none"> ○ Materials for construction in hand
4	Construction	<ul style="list-style-type: none"> ○ Toilets are constructed for use for the students and teachers ○ Demonstration of an alternative toilet system in the village
5	Training	<ul style="list-style-type: none"> ○ Students and teachers are trained on the use of the toilets ○ Users, care taker and the local people know the proper handling, collection and storage mechanisms ○ Local people know the method of application of urine and faeces in the crops ○ People learn about the possibility of co-composting stored faeces with organic waste
6	Monitoring of the toilet use	<ul style="list-style-type: none"> ○ Usage of the toilets is known and required guidance provided on the proper use whenever required
7	Testing the stored faeces	<ul style="list-style-type: none"> ○ After storage of faeces for a required period, it is tested to see if it is sanitised for handling in terms of microbial population in the stored faeces

		<ul style="list-style-type: none"> ○ The required time for storage in the prevailing climatic conditions is known ○ Further information is available to the users on the maintenance of the toilet and storage of the faeces
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Schedule

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SN	Activities	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	Initial survey and assessment	■											
2	Design and estimation		■	■									
3	Procurement and site preparation		■	■	■								
4	Construction			■	■	■	■	■	■				
5	Awareness activities			■	■	■							
	Training on the use of the toilets						■	■					
6	and urine application						■	■					
7	Monitoring/quality investigation								■	■	■	■	
10	Evaluation and final report											■	

Budget

SN	Activities	Amount (NRs.)
1	Design and Supervision	232500
2	Construction	500000
3	Transportation	40000
4	Training	20000
5	Monitoring and Supervision (2 years)	342000
	Quality Investigation	50000
	TOTAL	1184500