

33rd WEDC International Conference, Accra, Ghana, 2008

**ACCESS TO SANITATION AND SAFE WATER:
GLOBAL PARTNERSHIPS AND LOCAL ACTIONS**

Creating acceptable, affordable and appropriate sanitation options for rural areas

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The coverage of improved sanitation for rural communities in Ghana still remains at 26%. The major challenges in the provision of sanitation over the past decade have been based on affordability and appropriateness of the sanitation options in relation to local conditions. This paper looks at locally relevant sanitation options. The idea of promoting the use of local materials and local technology is to allow beneficiaries to be able to build improved latrines on their own. By using local materials for lining of pits and construction of slab and superstructure, the cost of a latrine can be made as low as GH¢23.00.

Introduction

This paper reviews sanitation practices in Ghana. It takes a look at strategies, technologies and socio-economic issues related to sanitation. It examines the challenges and looks at the way forward for improving sanitation coverage towards the targets set for the Millennium Development Goals (MDGs) by looking at the costs of different latrine types and the socio-economic situation of the people who need the facilities.

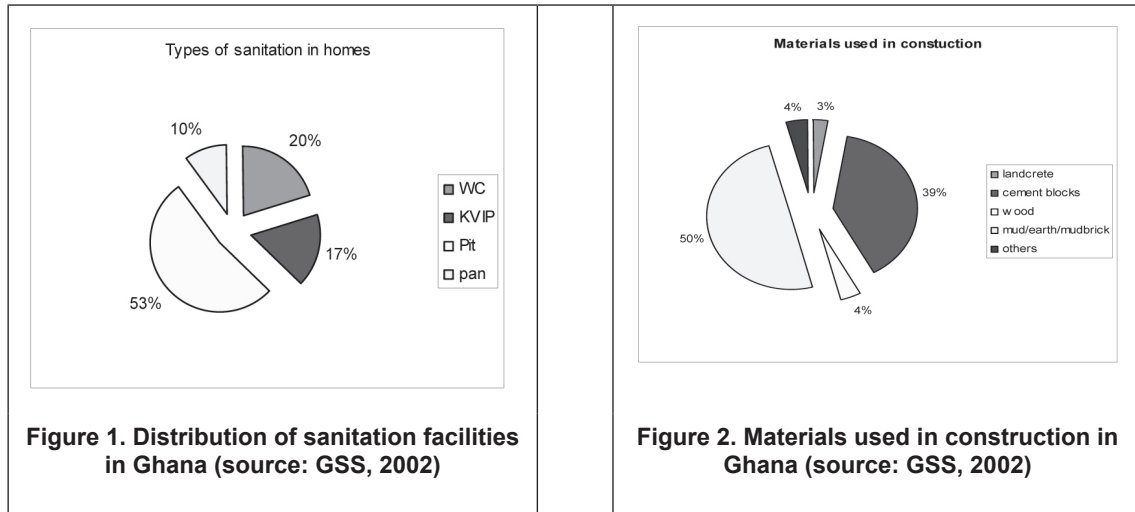
The National Community Water and Sanitation Programme was established in the early 1990s as a comprehensive project aimed at increasing the coverage of water and sanitation facilities in the country. Experience has shown that it is difficult promoting low cost sanitation in Ghana. Sanitation approaches in the past have been costly, as many conventional sanitation programmes promote durable, well-built, and expensive toilets - some of which require the use of water. The question is how low is the cost of "low cost" sanitation? How can sanitation be made very affordable, acceptable and appropriate for poor people.

The health, economic and social consequences of open defecation, poor hygiene and lack of safe drinking water are well documented and it is clear that to get the most out of the health benefits derived from having safe water, the provision of water supply facilities should go along with sanitation and hygiene interventions.

The population and housing census of 2000 indicated that 51.6% of the population did not have access to their own toilet facility. The option was either using a public latrine or one in another house or free range. For those who had access to their own facilities, only 37.1% had access to an improved sanitation technology. The rest used a simple pit or pan latrine (figure 1) (GSS, 2002).

A key objective of the National Community Water and Sanitation Programme is to maximize health benefits by integrating water, sanitation and hygiene promotion interventions. Despite efforts that have been made in the provision of sanitation facilities, it still lags behind water supply. In 2004, Ghana's water supply coverage was 56% (52 percent for rural/small towns and 61 percent for urban areas). For sanitation, the coverage was 35% (32% for rural/small towns and 40% in urban areas) (WSP, 2006). The current coverage for water supply in rural communities is 52% and that for improved sanitation is 26% (CWSA, 2007).

Owing to the low coverage, there is the need to examine the challenges in implementing various strategies for improving sanitation to determine shortfalls and make recommendations on improving access to sanitation.



Sanitation strategies

Demand responsive approach

The demand responsive approach has been the main strategy that has been used for the past 10 years under the National Community Water and Sanitation Programme. The main principles underlying a demand-response approach is that communities express their demand for sanitation facilities which they are assisted to build. This involves the training of latrine artisans who are required to build the latrines. The house owner (beneficiary) applies for assistance from the District Assembly and upon approval he receives a subsidy to cover 50% of the cost of the latrine.

Issues

The main challenges for the demand responsive approach is the over reliance on the payment of subsidies. When one house owner builds a latrine and does not receive the subsidy, it discourages others from building.

The process for obtaining assistance is cumbersome and it takes a long time for beneficiaries to receive their subsidy. This discourages them and sometimes affects the payment of latrine artisans. When the demand exceeds the grants available for subsidy, some house owners do not benefit and they tend to wait for the next project which may never be implemented.

Within the project the latrines are trained at the district level so there are instances when some communities do not have resident latrine artisans and have to rely on artisans from other communities which are far off. The requirement of getting a subsidy only when a trained latrine artisan has constructed the latrine then poses a problem.

Community-led total sanitation CLTS

In an attempt to encourage communities to build latrines, the concept of Community-Led Total Sanitation has been introduced in the National Community Water and Sanitation Programme. This is a relatively new concept which was started in Bangladesh. Community-led total sanitation.

(CLTS) involves facilitating a process to inspire and empower rural communities to stop open defecation and to build and use latrines, without offering external subsidies to purchase hardware such as slabs and pipes (Kar, 2005).

Challenges

One challenge for the CLTS approach that has been introduced is making available a wide range of latrine options and the price affordable for communities. The other challenge is the use of locally available technologies and materials. Sanitation has a low level of priority and there is a limited technology options for low cost sanitation at the household level. Currently, most guides for construction of latrines have a prototype that uses concrete and corrugated roofing sheets and other materials that are not easily found in the rural communities.

Affordability: Economic situation

The average cost of building a household latrine based on the prototypes that are being promoted is Gh¢180 (US\$ 170). When the subsidy of about Gh¢90 (US\$85) is paid, the beneficiary had to pay the other part. Currently, the minimum wage is set at Gh¢1.90 (US\$1.80) which translates to Gh¢45.60 (US\$ 43) per month. This means that if some one wanted construct a toilet he will have to use two months salary for a toilet. This means that other things such as food, clothing and other essentials have to wait. On the scale of preference for most people, these cannot wait and since the benefits of having a latrine is not immediately seen, the building of a latrine is at the bottom of the scale of preference.

Appropriateness and adaptability: Use of locally available materials and technology

Adapting technology is making use of local materials and local skills. Some materials that can easily be obtained in rural settings in Ghana are wood, clay, laterite, thatch, raffia, cane, bamboo. These are all materials that can be used for different parts of a latrine. There is local technology available in every region for construction using local materials. In the north, where thatch is used as roofing, the local technology has been developed and artisans are able to construct a roof within a day. The 2000 population and housing census showed that housing materials varied according to the region. Mud bricks/earth is the main material used in construction in almost all the regions except the Greater Accra and Ashanti Regions. More than 50% use materials other than cement and blocks to build their walls (figure 2).

In order to promote low cost sanitation which is affordable, the following models have been developed (table 1). The idea is to give locally relevant technology options which could be easily built by beneficiaries so that a major chunk of the cost component is indirectly borne by them thereby reducing the overall amount spent on latrines. One way of enhancing a CLTS programme is to provide diversity in the technology options available. Observers state that consumers should be able to choose from a range of options or steps in latrine technology as part of a promotion strategy, in contrast to a uniform model. This implies the possibility for incremental improvements, moving ‘up the steps’ with sanitation facilities (Shordt, 2006, Lenton, 2005; WSSCC/WHO, 2005). The disadvantage with the other type of materials apart from concrete is their life span (1-4yrs) but by then it is hoped that beneficiaries would have moved up. In the cost estimates in Table 1, galvanized aluminium roofing sheets have been assumed for the different models.

Model	Description	Approximate cost (Gh¢)	Ranking
Model 1	a) Single pit lined with cement blocks with reinforced concrete slab	108.00	↑
	b) Single pit lined with cement + concrete slab (no reinforcement)	105.70	
	c) Alternating pit, lined with cement with concrete slab	216.00	
Model 2	a) Single Pit lined with other material with concrete slab	51.00	↑
	b) Alternating pit lined with other material with concrete slab	102.00	
Model 3	a) Single Pit Lined with cement with slab made of alternative materials	80.00	↑
	b) Alternating pit lined with cement with slabs made of alternative materials	160.00	
Model 4	a) Single pit lined with other material with slab made of other alternative materials	23.00	↓

The approximate cost is inclusive of the cost of the superstructure and artisan’s fee. The slab and pit models can be combined with any of the following super structure options.

1. Building: Sandcrete blocks, landcrete blocks, sawn timber, metal sheet, woven palm fronds or other materials.
2. Roofing: Aluminium sheets or thatch.
3. Doors: Sawn timber or mats

Acceptability

In order to encourage communities to accept low cost sanitation, it is important to seek the support of chiefs and opinion leaders. In Ghana there is a lot of respect for elders and traditional authority. Promoting technology through traditional and local government setups can also encourage its acceptability. There is a local communal system known as “*nnoboa*” (which literally means helping to weed) in which people organise themselves to help each on their farms. Such groups can be created to encourage the people the help each other to build latrines. These groups could be known as “*siboa*” (helping to build groups).



Photograph 1. VIP built with local materials

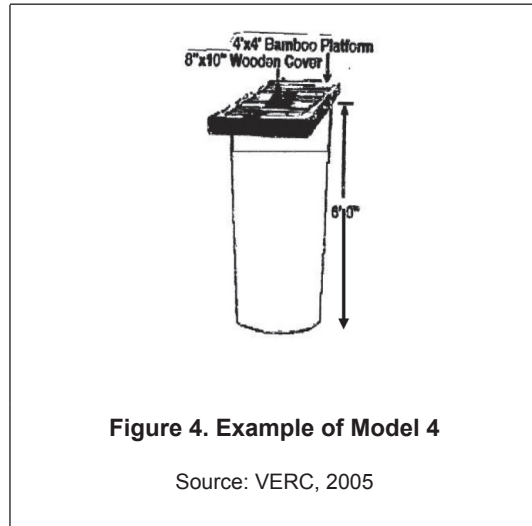
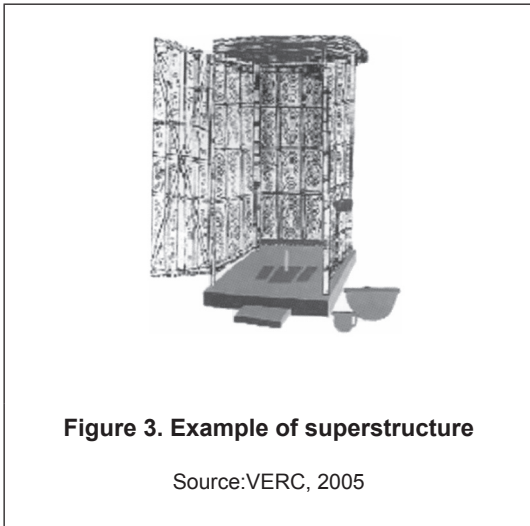
Future of sanitation

In order to address the socio-cultural, economic and technical challenges of sanitation, issues on Acceptability, Affordability and Adaptability should be looked at.

- Sanitation should be given priority at all levels and be seen to be promoted by chiefs, opinion leaders and politicians and pastors.
- As part of the promotion of improved sanitation technologies, the use of local materials should be emphasized and sanitation markets should have a diversity of locally available sanitation options.
- Latrine artisans should be trained using local materials and technologies.
- Training should mostly be concerned with the safety of the structure in terms of the setting of the slab.
- In future the possibility of training people within communities on construction of latrines (not just a few artisans) should be looked at. Communal labour groups could be used as focal groups.

Item	Description	Resources	Mode of payment	Unit	Rate	Quantity	Amount (GH¢)
1	Excavation	Hand tools.	Owner's contribution	m ³	-	2.85	-
2	Lining	5½ bags cement, 1.6 m ³ sand and 0.1 m ³ gravel(For block moulding, strip footing and laying) and artisan fee.	Subsidy	ls	57.00	1	57.00
3	Slab construction	½ bag cement, 0.1 m ³ sand, 0.1 m ³ gravel, 1 No. 100mmØ uPVC pipe & artisan fee.	Subsidy	ls	25.70	1	25.70
4	Walls/cladding & Door	Locally available materials	Owner's contribution	ls	-	1	-
5	Roof	2 No.roofing sheets, 1 No. 50mm×100mm treated timber, nails & artisan fee	Subsidy	ls	23.00	1	23.00
6	Hand-washing facility	Locally available materials	Owner's contribution	ls	-	1	-
	Total					GH¢	105.70

For the construction of other models using locally available materials, the cost of slab construction and lining is taken out bringing the total cost to GH¢23.00. (prices based on August, 2007 figures)



References

CSWA (2007) *Strategic Investment Plan*. Community Water and Sanitation Agency. Ghana, <http://www.cwsagh.org/new/details.cfm?corpID=1&empid=6> last accessed 12/01/2008.

GSS (2002) *Population and Housing Census Report*. Ghana Statistical Service, pp 10-15.

Kar, Kamal (2005) *Practical Guide to triggering Community-Led Total Sanitation*. Institute of Development Studies, University of Sussex, UK, pp2.

Shordt, Kathleen (2006) *HIP Review of Safe Disposal of Faeces*. IRC International Water and Sanitation Centre for the Hygiene Improvement Project, funded by USAID with support of the Academy for Educational Development (AED).

WHO (1992) *A Guide to the Development of on-Site Sanitation*. WHO Library Cataloguing in Publication Data: Franceys R. A guide to the development of on-site sanitation, R Franceys, J Pickford & R Reed.

VERC (2005) Village Education Resource Centre, Bangladesh, *Compendium of Latrine Models on Use in the Community*, pp8-14.

Water and Sanitation Program (WSP) Publication, 2006, *Getting Africa on Track to meet the MDGs on Water and Sanitation , a Status Overview of Sixteen African Countries*, A Regional initiative by AM-COW, AfDB, EUWI, WSP, UNDP.

Note/s

Exchange rate of Ghana cedi is 1GH¢ to US\$0.944/1.25 euros.

Keywords

affordability, acceptability, appropriateness, local materials, local technology

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