

## Policy Brief and Executive summary

### Background

According to the latest estimates from the World Health Organization/United Nations Children's Fund Joint Monitoring Programme for water and sanitation (JMP), 2.5 billion people worldwide, mainly in low and middle income, do not have access to any type of improved sanitation. This influence quality of life, human dignity and school performance and as a result, millions suffer from infections caused by insufficient sanitation and poor hygiene. Ghana is one of the countries in sub-Saharan Africa where the lowest proportion of the population have access to improved sanitation technologies. At the same time, Ghana is in the midst of rapid, unplanned urbanization where already an approximate half of Ghana's population live in urban environments with only 30% of urban residents having access to improved sanitation and only 15% are connected to sewerage facilities. Past research in Africa have identified challenges for improved sanitation coverage to include poor physical planning and high density of buildings leaving limited space for siting sanitation facilities; unreliable water supply, which limits the use of some sanitation technologies, and low income levels, which make acquisition of household toilets and public toilet user fees unaffordable to many households. In Ghana, not much is known about how the physical construction of infrastructure, the role of the private sector involvement and socio-economic characteristics of peri-urban settings affect uptake of sanitation and address the preferences of latrine users. The working environment and health concerns of waste handlers in urban Ghana are also poorly understood. Likewise, research is required to come up with more rapid and cost effective ways of monitoring progress in sanitation use at community level.

In response to the peri-urban sanitation challenges the Danish aid agency, Danida, funded the research and research capacity strengthening project titled "Sustainable Sanitation Solutions" (SUSA) with partners including Kwame Nkrumah University of Science and Technology (KNUST), University of Ghana (UG), The Dodowa Health Research Center (DHRC) and the University of Copenhagen (UoC). The SUSA project was implemented in the Dangme West District of the Greater Accra Region, representing the urban transition being experienced throughout Ghana, greatly challenged by provision of improved, safe and clean sanitation facilities and the environmentally sound management of human waste. The overall objective of the SUSA project was to identify existing barriers to improved sanitation and propose business models for providing hygienic latrine technologies and waste management solutions to be implemented in poor, rapidly urbanizing townships in Ghana.

Following systematic literature reviews and stakeholder consultations a research framework was developed for SUSA that spans the Sanitation Lifecycle and includes five major problem themes (see figure 1). The SUSA project was organized around 6 research work packages represented by each cell of the matrix in figure 1. Because of time and resource limitations, it was not feasible to conduct research in all cells. The SUSA project involved a great diversity of methods of data collection and research designs across a broad spectrum of quantitative and qualitative designs involving many different professions.

Research Themes	Sanitation Lifecycle Phases		
	Latrine Building and Use	Waste Removal and Management	Final Treatment and Re-use
Preferences and Practices in Peri-Urban Community Sanitation	<b>Work Package 2</b>	<b>Work Package 2</b>	<b>Work Package 2</b>
Technical and Urban Planning Sanitation Solutions	<b>Work Package 3</b>	<b>Work Package 3</b>	
Risks and Hazards in Peri-Urban Sanitation Practices		<b>Work Package 4</b>	<b>Work Package 4</b>
Sanitation Business Systems in Peri-Urban Environments		<b>Work Package 5</b>	
Monitoring and Evaluation in the Sanitation Sector		<b>Work Package 6</b>	

## Results

- A survey among randomly selected households in the study area found that 62.3% of 503 surveyed adults and teens practiced some forms of open defecation (beach, bush, plastic bag) in the last 24 hours and 73.4% and 67.3% of children between the ages of 2-5 practiced some forms of open defecation (ground, beach, bush, plastic bag) during daytime and after sunset, respectively, in the last 24 hours
- SUSA studies identified the existence of various sanitation-related businesses such as latrine builders/masons, hardware suppliers and pit-emptier's, who operate as sole proprietors in a market characterized as monopolistic. The operations and performance of the sanitation service providers were constrained by financial, institutional and social challenges, though sanitation business was found profitable, and the sanitation service providers were motivated by financial and other non-financial benefits to continue in their business.
- The SUSA study found that most of households in the study area preferred the flush and ventilated improved pit (VIP) latrines, and were willing to pay for these latrines via savings rather than credit, although the financial institutions in the study area showed an interested to grant loans for household latrines. Empirical results from a logistic model showed that there exist some relationship between households' latrine financing decisions and their socioeconomic and community characteristics such as gender, education, household composition, income, tenancy, defecation practice and location of community.
- It was found that private latrines shared by multiple households were as highly patronized by the intended users as those used by single households but communal latrines were avoided by most expected users (75%) in favor of open defecation. The main technical barrier to use of existing

communal facilities was intense odor (23%) while long walking distances (28%) and the charging of a user fee (21%) were the major non-technical barriers. The concentrations of hydrogen sulphide and ammonia in latrine cubicles, used as potential surrogates of odor, generally reflected the level of odor as perceived by the latrine users but hydrogen sulphide was found to be a more reliable surrogate of the level of odor. The level of odor was significantly influenced by the type of latrine technology. For VIP latrines, the level of odor was influenced significantly by the ventilation rate through the vent pipe and the cleanliness of the latrine. With windows provided in all sides of the superstructure of an experimental VIP latrine and insect screens installed, the 100 mm diameter vent pipe commonly used in Ghana achieved a lower ventilation rate (17.6 m<sup>3</sup>/h) than the recommended rate of 20 m<sup>3</sup>/h but a 150 mm vent pipe exceeded the recommended rate with an average of 45 m<sup>3</sup>/h. Generally, reduction in the ventilation rate due to the provision of windows in all sides of the superstructure (32%) and the installation of insect screens (7%) could be compensated for by increasing the vent pipe diameter by 50 mm.

- In surveys farmers 'were willing to use excreta as fertilizer and disagreed' that excreta was a waste, though a majority also 'agreed' that excreta reuse could pose health risks.
- Comparing the validity, feasibility and cost-effectiveness of using mobile phone SMS survey tools with a traditional paper based survey tool found no significant differences in the reliability and validity of the two tools. However, although the mobile phone SMS survey tool is feasible and potentially acceptable in terms of reliable, valid and timely sanitation data collection for effective policy formulation, there are challenges, which could be further addressed.
- Surveys among 280 solid waste handlers in the peri-urban townships, found the most commonly reported health problems were bodily pains (56.4%), headache (38.6%) and fever (35.7%). Waste handlers with uncovered mouth/nose had higher likelihood to report cough than those who used mouth/nose cover. Waste handlers who did not use personal protective gear consistently cited reasons including physical discomforts, impracticalities of wearing them in hot/humid conditions, inability of employers to supply or to finance personal protective gear.
- The SUSA studies concluded that dirt, sanitation or hygiene can only be operationalized within a social context. It was observed that the study community's perception of dirt as "matter out of place" as defined by Mary Douglas; their perceptions of smell and contagion; their concept of public and private spaces; the socialization process that children go through contribute to their hygiene behaviors and sanitation practices.
- A growing number of small children attend kindergartens and day care facilities. This study found that overall, the inadequate kindergarten facilities reflected the general poor sanitation within the study area but the children were particularly affected by little awareness at the institutions of young children's sanitation and hygiene needs and cultural norms regarding provision of toilets for young children.
- SUSA found a high level of 'hygiene poverty' in schools, including great infrastructural needs such as lack of water and hygiene facilities, poorly maintained school toilets, poor waste management systems. Senior schoolgirls experience serious social and emotional hygiene poverty, including shaming and disciplining of their hygiene, sanitation and menstrual practices. This results in secretive coping strategies among this group.

- A complex system of land rights, high demand for rental accommodation with poor legal protection of tenants and some landlords changing toilets to living rooms reduces the investment in sanitation and contributes to the high level of open defecation.

### **Conclusions and Recommendations**

- As the government supported program will not have the capacity to significantly improve on sanitation coverage there is the need to address the constraints to sanitation business for effective service delivery.
- Households could consider 'cheaper' and more feasible latrine technologies, and also adopt joint-resource mobilization strategies for their latrines. Programmes aimed at promoting improved sanitation, in a sustainable manner, should consider the heterogeneous needs and location of households as well as the reuse potential of excreta in agriculture.
- In order to alleviate the hygiene poverty, Ghanaian schools and kindergartens must improve hygiene and sanitation facilities and enhanced official oversight of private facilities are needed. A current lack of clear policy guidelines at the national and local level towards young children as a separate user group, the non-enforcement of adequate standards for school sanitation and inadequate financial investments undermines children's basic rights to sanitation. Also, schools should also work towards changing the negative hygiene discourse and unsupportive teaching methods and foster skills based teaching on comprehensive adolescent health.
- Waste handlers need affordable and suitable protective gear to reduce risk to health as well as the provision of water and soap to promote personal hygiene at work. This needs to be a requirement in future government financed private sector contracts.
- Housing policies and enforcement systems should require landlords to provide proper sanitation.
- It is necessary to have a new look at how we define shared sanitation and to use specific subcategories including household shared (sharing between a limited numbers of households who know each other), public toilets (intended for a transient population, but most often the main sanitation facility for poor neighborhoods) and institutional toilets (workplaces, markets etc.).

### **Selected References**

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