

**4th International Dry Toilet Conference**

**Changing Attitudes towards Dry Sanitation in  
Msunduzi, Swaziland**

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*Msunduzi Dry Sanitation Project is a joint effort between Turku University of Applied Sciences, the Global Dry Toilet Association of Finland and the Salvation Army in Swaziland with an aim to improve sanitation hygiene in Msunduzi Township in Mbabane, the capital of Swaziland. The prevailing stigma towards human faeces has been a major challenge for the project implementation. A study reviewing people's attitudes towards dry sanitation was conducted in 2008–9 and again in 2011. Both studies also examined people's knowledge on dry sanitation and its connection to health. Comparing the results of the two studies allowed an assessment of the impacts of the education provided in the project. The results indicate that the education is paying off: The concepts are better known and the dry toilets and the use of human manure are better accepted. Despite the positive results, more education is still needed. It can be concluded that to ensure sustainability the given education needs to be long-lasting, versatile, demonstrated with visible results and integrated in existing structures.*

**Keywords:** *Attitude, Dry Sanitation, Health, Knowledge, Stigma, Swaziland*

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## Introduction

Adequate sanitation facilities are not the everyday reality for many people in developing countries, in particular in Sub-Saharan Africa where millions of people lack access to safe sanitation. Inadequate sanitation facilities pose a major health risk for the people and even a mortal danger for the most vulnerable groups, including small children, the elderly and people living with HIV/AIDS (Lindstrand et al. 2006). Good sanitary conditions are essential for health and access to safe water sources and sanitation has been recognised as an important development goal in the international community, through, for example, the Millennium Development Goals (Costello et al., 2009). However, in many countries a lot remains to be done to reach these goals. One of the countries where sanitation is one of the country's developmental challenges is Swaziland, where only 57% of the population has access to adequate sanitation (WHO/UNICEF, 2012).

Turku University of Applied Sciences (TUAS) has been working in Msunduzi Township in Mbabane, the capital of Swaziland since 2004 with questions related to environmental health and sanitation. Swaziland is a small mountainous country in south-eastern Africa surrounded by South Africa, apart from a short borderline with Mozambique. The fulfilment of the country's development objectives is hindered, for example, by poverty, continuous droughts and the high prevalence of HIV/AIDS (UNTC 2009). Currently the HIV/AIDS prevalence is as high as 26% (UNICEF, 2012) with severe consequences on the small country of roughly one million inhabitants.

Msunduzi Township is a densely populated township located close to the city centre. It is the oldest and with its 16 000 inhabitants also the biggest township in Mbabane. More than half of Msunduzi has an informal status and often the township, where the mud-and-stick houses sprawl on to the surrounding steep hills, is considered as a temporary residential area. Steep topography, poor roads and inadequate infrastructure are the main features of the township (Akatama, 2008). In the areas of Msunduzi with an official residential area status, 70% of the households have water closets compared with 10% of the households in the unofficial areas (Koivisto, 2005). For the rest, sanitation solutions are diverse (ibid.). Whilst some use traditional pit latrines, rely on neighbours' toilets or simply buckets, some prefer the so-called 'flying toilets', where defecation is done in a plastic bag and thrown into the environment. Some empty their faeces into the pits for household waste and especially during the rainy season, yards and water points get contaminated, easing the spread of cholera and diarrheal diseases. Some years ago, the municipality responded to the lack of sanitation facilities by building a number of pit latrines with concrete slabs in the most poverty-stricken areas. However, these have largely been left unused since the project only provided the chamber and seat while the superstructure was left for the end users to build. (Akatama, 2008)

In 2004, TUAS students carried out a base line study to map the environmental health conditions, people's knowledge and development needs in Msunduzi. Lack of proper sanitation was revealed as one of the major environmental health challenges in the area (Koivisto 2005). The study led first to an initiation of the Environmental Health Education Project (EHEP) in 2005 together with the Mbabane City Council to increase knowledge on environmental issues in the township. Local volunteers were trained to educate communities and schools on diverse environmental issues. To emphasise the questions around sanitation

and the possibilities of dry sanitation in particular, the Msunduzi Dry Sanitation Project was launched in 2007 as an independent project to focus on these issues only. The still ongoing project is funded by the Ministry for Foreign Affairs of Finland and is implemented in cooperation between TUAS, the Salvation Army of Swaziland and the Global Dry Toilet Association of Finland.

Since the concept of dry sanitation was largely unknown for the people, a lot of emphasis was put on education and sensitisation during the first phase of the project (2007–8). A representative from each residential area was trained as a local “Sanitation Expert” to distribute information related to dry sanitation and approximately 5 000 people and 1 000 pupils were reached annually. Altogether 16 dry toilets were built in the project area, both for household use and in public places. In the second phase (2009–11), the direct objectives were redefined to further emphasise participation in the project area. The construction of dry toilets continued with more focus on stakeholder participation through various workshops for Sanitation Experts, community leaders and other community members, with a specific focus given to women and youth. The current and third phase of the project will continue till the end of 2013. During the last two years, the main emphasis is on sustaining the results, supporting the local ownership over the project and on spreading the knowledge also outside of the project area. For example, “EnviroClubs” for toilet owners, neighbours, local leaders and others interested in sanitation questions have been established to support communication between the users and to act as an effective channel for the Sanitation Experts to reach people. Additionally, together with the University of Swaziland a course on safe and sustainable sanitation will be organised for university teachers and students, NGOs and environmental health officers at city and district levels.

One of the main challenges in the project has been the prevailing stigma towards human faeces: speaking about it, handling it or using it as manure. To understand the situation, people’s knowledge on dry sanitation and its connection to health have been studied as part of monitoring and self-evaluation activities in the Msunduzi Dry Sanitation Project. In this paper we compare the results of two subsequent studies to estimate the efficacy of the education given in the project.

## **Methods**

The two studies examined in this paper are from 2008–9 and 2011–12, respectively. As both of the studies used a qualitative research strategy, the comparison is also based on qualitative information and methods only utilising qualitative content analysis. A short description of the two studies is given below.

The first study was conducted by Haimi and Ranta as their Bachelor’s thesis. The aim of the research was to study the dry sanitation perceptions of the inhabitants in the project area in Msunduzi by examining what kind of benefits and threats people connect with dry sanitation, what motivates people to use dry toilets and whether there are any prejudices and attitudes towards dry sanitation. Secondly, the aim was to assess the knowledge on dry sanitation and need for sanitation education in the area. The study design was a qualitative case study and the methods included semi-structured interviews and observation. Altogether 23 inhabitants in the project area were interviewed. The interviewees included representatives from six out of the seven pilot homesteads, which had been selected to have the first dry toilets built in the project. Other groups of interviewees were the Sanitation

Experts and professionals of various fields related to sanitation. The interviews with the professionals were conducted in English but in all other interviews the local language siSwati was used. In the latter case, a research assistant translated the answers for the students. The interview with the Sanitation Experts took the form of a predetermined group discussion whereas the homestead interviews were individual interviews without prior notice (Haimi & Ranta, 2009). The professionals interviewed included a Community Service Coordinator, an office worker from Salvation Army representing the local Partner of the project and an environmental activist from Msunduza (ibid.).

In 2011, a set of qualitative interviews was carried out to assess the impacts of the education provided in the project. This study was conducted by Kirstinä as part of her Bachelor's thesis. Altogether 16 inhabitants of Msunduza, representing different socio-economic positions, were interviewed. The questions were mainly devised to determine people's knowledge and attitudes towards dry sanitation (Kirstinä, forthcoming). The interviewees were able to use either English or siSwati; in the latter case an interpreter was used to translate the answers into English. The interviewees were divided into categories: caretakers (responsible for example cleaning and maintaining the toilets, mainly also owners of the toilet), immediate neighbours of built toilets and community leaders (ibid.).

Both of the studies were qualitative consisting of a relatively small number of respondents and thus there is a risk that the interviews give a biased view of the real situation. However, they capture some different opinions from the area. With an aim to minimise the possible bias, the interviewees were selected from different areas within the project area and to represent different socio-economic and otherwise diverged groups. Another limiting aspect worth mentioning is language. Whilst English is an official and administrative language in Swaziland, not all people, the less educated in particular, speak it fluently. Hence, when conducting the interviews, a local research assistant was used to interpret between the interviewed and the interviewers. As the interpreters used are not professionals, it is possible that some things may not have been interpreted or that the message has altered slightly in the process.

## **Results and Discussion**

The two subsequent studies are not entirely comparable but some trends can be found by comparing the two. The results of the first study indicate that people had difficulties in understanding the concept of dry sanitation and the connection between sanitation, environment and health, or that they did not perceive them important. The results of the second study imply that the education is paying off. The concepts are better known and the dry toilets and the use of human manure are better accepted. Secondly, knowledge about the links between sanitation and health has improved: The connection between good sanitation and health was better known and people were able to list aspects that are important and can pose health concerns. The interviewees valued their dry toilets and were motivated to receive more education though some negative attitudes still exist. Thirdly, the Sanitation Experts, the local project workers, with a major role in providing education, have influenced people in taking care of the toilets and motivated them to have interest towards safer sanitation practices. The results have been examined thematically below.

### *Knowledge about Sanitation Hygiene and Dry Sanitation*

All of the homestead representatives interviewed in 2008 had received sanitation education provided by the project but some of them had difficulties in encapsulating what dry sanitation means. However, as the study points out, the people might have been confused with the unfamiliar terms used in the education, such as composting and microbes, which they were unable to identify during the interviews. Some were familiar with the concept of dry toilet but not with dry sanitation. Similarly the process of faeces turning into manure through composting was identified as difficult for the people to comprehend. Similarly, they did not recognise the connection between dry sanitation, the state of the environment and health or they did not perceive it important.

All the respondents of the second study seemed to have a good basic knowledge about sanitation hygiene and its importance in maintaining good health. The three most commonly mentioned features of dry toilets were: 1) A permanent solution (no need to dig new holes as with pit latrines), 2) composting and the possibility to use the composted material as a fertiliser and 3) the toilets do not require water. Slight differences can be seen when comparing the different groups of respondents: The “neighbours” knowledge was less precise than others’, assumingly because they have not been the main target group of the given education. According to some respondents, the number of diseases has come down since the Msunduza Dry Sanitation Project had started activities in the area. The interviewed caretakers (of both public and private dry toilets) had a very good knowledge about the linkage between clean and hygienic toilet facilities and health, and were able to identify factors such as cleanness of toilets, hand-washing, keeping the toilet lid closed and locating the toilet correctly in relation to houses as factors maintaining health. As possible health risks, the caretakers mentioned the handling of manure and lack of access to proper toilet facilities. They were also well aware of the maintenance routines of dry toilets but less so with composting.

The local leaders seemed to be well aware of the toilets’ main idea: composted material can be utilised in gardens, and many thought that natural fertilisers could be even better than commercial ones. The compost was seen as a source of vitamins and nutrients for both people and animals, and the idea that manure could be sold for landscaping, for example, was found appealing. Another positive aspect mentioned was that the dry toilets do not smell (if maintained and used correctly). Some of the respondents could not describe the difference between the two dry toilet models built during the project (a composting dry toilet and an Enviroloo, a commercial model from South Africa) whilst others described the latter as more expensive. Other aspects the leaders were not sure of were the use of dry substances (what can be used) and making the compost in small plots with little space. The interviewed leaders, in comparison to other respondents, emphasised the importance of securing access to adequate toilet facilities for everyone. They mentioned more practical questions, such as how to organise hand-washing possibilities next to the (public) toilets. The leaders also perceived the toilets as a status of wealth and something that can affect people’s mental wellbeing as having an access to a proper toilet is to have one thing less to worry about.

#### *Attitudes and Motivation towards Dry Sanitation*

The 2008 study revealed people’s prejudices towards dry sanitation. The main explanation for the prejudices was that the concept was new for the people. Sanitation without water as a

safe, sustainable and “modern” option was something people had not thought of, and turning human originated waste into manure to be used in gardens was found difficult for people to comprehend. Women were seen to be more open and perceiving dry sanitation more positively than men. According to the interviewed health care representative, women do most of the household work and thus understand the need for toilets better. Hence the sanitation education too should be targeted at women. Another important target group mentioned was the local leaders since they have a role as opinion leaders in Msunduzi. Getting the leaders to view dry sanitation in positive light would, according to the interviewees, increase the participation of the rest of people. The leaders were seen to play an important role in the project also because they act as gatekeepers to the community: without their support and involvement, it would become impossible to implement the project in the township. Hence, despite the key role the trained Sanitation Experts have in implementing practical activities in the project, such as education, the leaders’ participation was emphasised in the interviews.

Concerning people’s motivation, the 2008 study revealed some divergent opinions. For the inhabitants, the provision of fertiliser and the possibility to gain some extra income by selling the fertiliser were the biggest motivational factors supporting dry sanitation. The key informants, for their part, emphasised the benefits of improved health. They also shared the view of the Sanitation Experts, mentioning environmental health and ecological perspectives as potential drivers for dry sanitation in the community. In this context it is noteworthy that the small group of people about to receive the first dry toilets built in the project mentioned hygiene and health effects as the biggest threats dry sanitation poses. The respondents were afraid of parasites, flies, pests, diarrhoea and other health hazards in case the chambers would not be emptied on time. Additionally, the possibility that the compost would be emptied too soon or in an unsafe manner in the need of money, was mentioned as a potential threat. The key informants’ insight was that the people in Msunduzi perceive water closets more modern and thus more desirable, making dry toilets seen as backward and as insufficient development. The question of long-term planning was raised also by the key informants: Most of the residents of Msunduzi are poor and in need of short-term benefits, which challenges successful implementation of the project, although seeing the improvements in hygiene and health will motivate them in the long run. Nearly all of the interviewees stated that education, practical training in particular, is the way to get people involved and to create ownership over the project. Gaining practical hands-on experience and seeing visible results were thought as the most efficient way to make people understand the benefits and the safety of dry sanitation. Similarly, due to a strong interconnection between sanitation and waste management, many of the respondents emphasised the importance of developing them both side by side.

The newer study revealed different attitudes. Because of the educational work done in the project, people have started to understand that dry sanitation, especially when separating urine from manure, is a modern sanitation solution. The “neighbours” interviewed in the study found dry toilets attractive, though with relatively little experience most of them lack accurate knowledge on how the toilets operate in practice. Despite having no previous encounters with this type of sanitation, interest to know more is high. Many were also interested in having a dry toilet and utilising composted manure in the gardening, though some doubts occur. Some of the interviewed neighbours were planning, or, at least wishing,

to have a dry toilet for themselves, mainly because of the poor condition of the current pit latrine or absence of any sanitation facilities.

During the interviews in 2008, it was concluded that the respondents found the roles and responsibilities of the stakeholders rather unclear. The toilet owners were to maintain their own dry toilets although the need for appointing a specific caretaker was expressed due to the somewhat problematic perception of the handling of human waste. The Sanitation Experts were supposedly responsible for looking after the dry toilets in public areas but the observations revealed that their responsibilities needed to be better defined and clarified. Similarly, the role of the leaders was seen controversial. The Central Committee consisting of leader representatives of different areas in Msunduza had not expressed their interest towards the project. Yet, the Central Committee was seen as a respected authority with a lot of power and prestige in Msunduza and the Sanitation Experts feared that it would not present the project in a good light and motivate people to participate.

In the 2011 study the responsibilities among the actors were viewed rather clear among the Sanitation Experts and the toilet owners, regarding, for example, appointed caretakers. However, the community leaders and neighbours seemed to know very little about the duties of the Sanitation Experts. The public dry toilets now have appointed caretakers, a change which has occurred after the previous study. The neighbours seemed to be very little in contact with the Sanitation Experts or dry toilets. Yet, the education provided in the project was appreciated, and some respondents were of the opinion that further project activities and involvement in the area would encourage people to take better care of the toilets.

In 2011, the need for good management was emphasised, especially by the leadership. Local governance was also criticised and mentioned as a reason behind poor community involvement. According to the interviewed leaders, a constitution of the leadership is drafted at the moment to clarify responsibilities, and also to avoid conflicting interests. The community leaders perceived their own role in the Msunduza Dry Sanitation Project clear; new activities and initiatives, such as the establishment of the EnviroClubs are introduced to them first, after which they can pull more people to the activities through community meetings. Community leaders were also hoping for more cooperation with the city officials, since they are the ones making the final decisions and setting boundaries on how the project community is able to proceed. The interviewed community members saw the role of the community leaders as encouraging everyone to participate and ensuring that everyone would have an access to safe sanitation facilities. Some of the respondents expressed their disappointment in the leaders and saw no role for them in relation to the project, which is quite a remarkable difference in attitudes comparing to the ones recorded in the 2008 study.

### *Culture and traditions*

In 2008, the formality of the dry toilets as constructions was seen problematic. Firstly, dry toilets were considered too expensive for the people to be built as such and in case cheaper materials would be used, it was feared that the City Council might not approve them as official buildings. Hence structures with cheaper and alternative materials were perceived as temporary by the public, with a possible influence on their motivation to have and construct dry toilets. Secondly, people were used to using traditional pit latrines or bushes for relieving themselves and for most of them, even talking about sanitation or handling of faeces were

considered a taboo. Eating food fertilised with human related manure was considered as a challenge.

In the 2011 study some homesteads still seemed to not be willing to invest in sanitation. Some household representatives doubted the general need for dry toilets since there are a plenty of pit latrines constructed by the City Council around Msunduza and for some the next pit is already waiting to be taken into use. Pit latrines were also perceived easier to maintain because there is no work afterwards, like pushing and levelling the substance. Also tasks such as collecting sawdust were perceived difficult especially for the elderly. In comparison with a flushing toilet, a few argued that the construction costs of dry toilets were higher, though dry sanitation was also widely recognised as the cheaper option when comparing the maintenance costs.

Privacy was a driver for some to build a proper bathroom instead of a pit latrine due to the challenges of washing up in a house with only one room. Some had doubts towards the outcomes of the project because they were perceived difficult to see. Composting and the concept of dry sanitation were seen more suitable for rural areas. Nevertheless, positive attitude and ownership towards dry toilets were shown by individuals, such as one community member who had fixed a door of a public dry toilet with his own money.

The 2011 study indicates that sanitation does not get much attention in the general discussion. For the interviewees the subject was not a problem to talk about but it is yet considered as a something mentioned only when there is a problem, such as bad smell or dirt. Going to the toilet is considered private and people feel there is no reason to talk about it. Within the community leaders sanitation has become a common topic for two reasons, one is the pressure from the City Council, and the second is the Sanitation Experts working on the issue. In every community meeting Sanitation Experts are given a chance to give a short presentation on sanitation. The leaders felt that it would further encourage people if not only the Experts but also other project staff would come and discuss over the matter. "People will take it more seriously if they can see the people. Experts are not taken seriously when going around in the community". The quote on the status of the Sanitation Experts reflects perhaps a poor identification of their profession and general lack of knowledge of their work duties.

In 2008 study, the use of fertiliser in home gardens was seen as the biggest benefit of dry sanitation. This presents an interesting result in a relatively densely populated community such as Msunduza. During the project implementation, the issue has come up on several occasions and also a deeper analysis on small plots of Msunduza hindering full implementation potential has been studied (Oikarinen-Mapengo, 2011). The financial benefits, both from saving money through the use of urine and composted material and selling the manure, were identified as the biggest positive motivational factors. The environmental or health benefits were not fully identified during the first study. Some variations in the answers can be explained with the fact that in 2008, people did not yet have dry toilets, so the answers were based more on future expectations rather than the practical experiences people had in 2011. Also, the questions in 2008 were a bit different from the ones in 2011 especially concerning sanitation hygiene. For example the answers to the questions "do you know how to take care of a dry toilet" in 2008 are not necessarily comparable to the "how do you maintain you sanitation facilities" and "what are the tasks

you need to perform” in 2011. Yet, health and hygiene could have come up as a “potential benefit” in 2008 where as they were now mentioned either in the above-mentioned question or as an answer to “do you think there is a link between wellbeing and sanitation, how would you describe it”. In 2011, some interviewees mentioned having previous experience of eating vegetables, which had been fertilised with human manure and urine. In general, people felt the same about education as in 2008, that there is a need for practical and subjective experience regarding the use and benefits of human-originated fertiliser.

## **Conclusions**

A great deal of positive progress can be seen in the project area concerning people’s attitudes and knowledge on health and sanitation. The concepts are better known, the idea better accepted and people are not “afraid” of the new type of sanitation solution as they were before. However, the process is slow and more education is still required. Many still find composting difficult or something they do not know how to do.

In both studies, the significance of Sanitation Experts as local educators came up. In 2008, their work was acknowledged and hoped for whereas in 2011 they faced some criticism too. It seems that toilet owners have reached enough education but the leaders, people without a dry toilet and other indirect beneficiaries need more education. Additionally, even though knowledge on dry sanitation, toilet maintenance and sanitation hygiene was rather well absorbed, more education and practical training on composting, handling of manure and use in the garden is needed.

Handling and even speaking about human originated waste has been problematic in the project area. This has challenged the sanitation education in the Msunduzi Dry Sanitation Project, yet during the interviews in 2011 significant progress was seen: whilst people perceive it as a topic that is not much discussed in their normal daily conversations, they had no problem in discussing the project or dry sanitation related issues during the interviews. The differing opinions of the key informants and the community members indicate that the local situation needs to be considered and even though the financial benefits might be perceived as the biggest drivers for dry sanitation in the beginning, improved health and state of the environment can become more important motivators in the long run.

The role of the traditional leaders of Msunduzi was seen as an important issue regarding the successful implementation of the project. The eldest and the leaders of the community have authority and are highly respected in the project area. Their support and approval for the project are essential in order to have the local people participating in the project. Moreover, distrust towards regional authorities and administration was quite a general feeling among the interviewees. Hence education for the leaders and communication and cooperation between different project stakeholders were identified as key issues during the research in 2008. The changing attitudes among the leaders show a clear difference in the two studies. Interest, support and participation in the project were lacking from most of the interviewed leaders in 2008 but not in 2011. The current positive attitude of the leaders and their support for the project is fundamental and will help to sustain the results. The roles and responsibilities of the project stakeholders need to be clear from the beginning of the implementation, which is particularly important in a hierarchical society such as Swaziland. Also the local culture, livelihood and environment need to be considered. In Swaziland, the local construction policy has made it difficult for the project to use cheaper construction

materials and, hence challenged people's motivation and self-initiative to build their own dry toilets.

Whilst some of the attitude problems and misbehaviour could perhaps have been prevented if tackled at the early stages of the project, many of the problems have been unavoidable bearing in mind the fast and remarkable in and out migration in the area, which greatly hinders the effects of the educations. To ensure sustainability and to reach different target groups it is of extreme importance that the given education is long-lasting, versatile and demonstrated with visible results. Education should also be proactive, practical and participatory to all stakeholders of the project. Hence it is also important to find ways to integrate information in existing structures before the project ends.

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