


<b>Title</b>	<b>IS THIS A SOLUTION?</b>
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<b>Short CV</b>	<p>Gertrude Matsebe is a researcher at CSIR, Building and Construction Technology in Pretoria, South Africa. She holds a B. A. (Hons) degree in Social Work from the University of the North, and completed a course in Housing Policy Development and Management at University of the Witwatersrand, Graduate School of Public and Development Management. She joined CSIR in 2001, and is involved in various projects ranging from ecological sanitation, disability and housing. She also worked for various NGOs, namely, Medecins Sans Frontieres, Suid-Afrikaanse Vrouefederasie and Deaf Federation of South Africa. She has been involved in ecosan projects since 2003. Her areas of expertise include primary research; community interaction and liaison; participative workshopping; community development and empowerment; and application of innovative interventions in developing communities.</p>
<b>Photograph attached ( jpg)</b>	

## **1. INTRODUCTION**

The sanitation policy of the South African government stresses that sanitation is not simply a matter of providing toilets, but encompasses other aspects that make up good sanitation. These include community participation in decision-making, improved health of millions of people, safer living environments, greater knowledge of sanitation-related health practices and improved hygiene (DWAF, 2001). Sanitation includes both the 'software' (understanding why health problems exist and what steps people can take to address these problems) and 'hardware' (toilets, sewers and hand-washing facilities). Together, these combine to break the cycle of disease that spread when human excreta and waste are not properly managed (DWAF, 2002).

Introducing and operating urine diversion sanitation (UDS) systems in rural and urban areas require a combination of technical and managerial aspects that fit the prevailing socio-cultural context in the specific area. An in-depth understanding of the social and mental fabric concerning people's perceptions and views towards ecological sanitation and re-circulation of nutrients (re-use of excreta) will enlighten authorities about motivational factors behind people's acceptance or rejection of a technology.

The projects involved studying the social perceptions of the users of Urine Diversion Sanitation System in three provinces of South Africa where a large number of urine diversion toilets have been built, namely Taung in North West (NW) Province, Mpushini in KwaZulu-Natal (KZN) and Barkley West (Kimberley) and Augrabies in Northern Cape (NC) Province. The paper focuses on the findings of this project.

## **2. RESEARCH METHODOLOGY**

A literature review (desktop study) was the first step to obtain information on the experiences of other countries (e.g. Mexico, Guatemala, China, Japan, India, Nepal, Europe, Sweden, Denmark, USA, etc.) regarding the social perceptions of users of UDS. In Africa, the UDS was implemented in areas such as Zimbabwe, Mozambique, Kenya, Botswana and Malawi. In South Africa, the first pilot project of UD toilets was implemented in Umtata (Eastern Cape Province) in 1997. Other projects were later on rolled out to other provinces in South Africa.

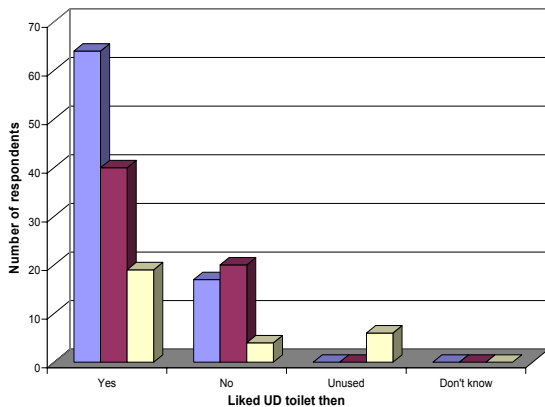
The research team developed an interview schedule, and conducted interviews with household members to gather the required information. Meetings were held with the local council (both officials and politicians) responsible for water and sanitation structures, to gather background information on the sanitation project(s) implemented. The information gathering process comprised informal discussions with more than one household member where issues were probed in-depth (informal focus group discussions).

### 3. RESEARCH FINDINGS

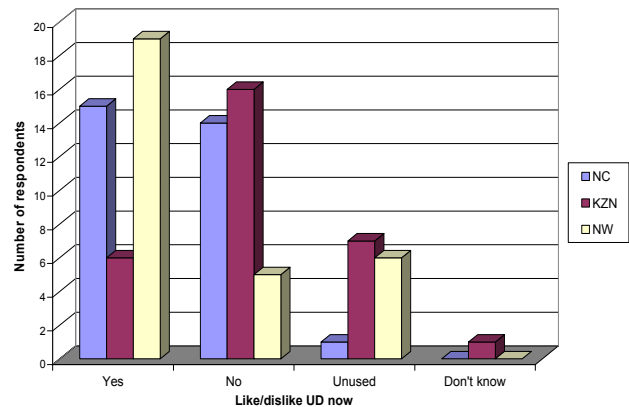
#### 3.1 Perceptions and views of users regarding UD toilet, faeces, urine, re-use of excreta

The research showed that initially the users of the UD toilet liked it, because it was properly built (i.e. structure made from bricks, seat with lid, locks etc.) compared to the pit or VIP toilet that was built from corrugated iron, mud, pieces of plastic or cardboard, etc.

**Figure 1: Liked UD toilet then**



**Figure 2: Like UD toilet now**



However, as time passed, users' interest in the UD toilet lessened after using it for a while, mainly due to problems experienced with operation and maintenance.

Despite the positive factors mentioned above, users raised a number of concerns pertaining to the toilet. This included the following:

- In KwaZulu-Natal, elderly people did not like the UD toilet because of the high steps, which made it difficult for them to gain entry. The obese people had a problem because the seat was too small for them. There was insufficient space inside the toilet for the users to move around freely.
- In Kimberley, users did not buy into the new system because of not being fully involved in the process - they were promised flush toilets, but provided with UD toilets instead. In contrary, users in Augrabies bought into the concept because of their involvement throughout the process and the education received on the system.
- The majority (86%) of people in the research areas did not like to empty the vault, because they felt it was unhealthy and unpleasant to handle human faeces. Alternatives were not explored (establishing local entrepreneurs to do the job).
- Users felt that it was easier to handle urine than faeces, as it does not have an offensive odour. No education was imparted on the value of diluted urine as a fertiliser, only the value of faeces. The urine pipes in all the UD toilets constructed emptied in a soak pit.
- Despite the fact that users of UD toilets knew about faeces being used as a fertiliser, some could not understand how they were going to empty wet faeces and apply it in the garden, since some toilets had water in the vault. Demonstrations were supposed

to be made for users to see how dry faeces combined with ash/soil/sand look like (no odour, faeces not in its original state).

### 3.2 Behaviour of users of UDS.

As shown in picture 1 and 2, 16% of the households with UD toilets did not use them at all, or they used them for unintended purposes such as a storage place, animal pen (hens), bathing, etc. This was especially the case in KwaZulu-Natal.



**Picture 1**



**Picture 2**

Pictures 3, 4 and 5 show examples of where the UD toilets were converted into flush toilets. Such cases were identified in KwaZulu-Natal and North West Province.



**Picture 3: Mpushini, KZN**



**Picture 4: Taung, NW**



**Picture 5: Taung, NW**

VIP or pit toilets were preferably used over the UD toilets, although the UD toilets were reserved for visitors and to be used once the pit or VIP toilets were full. In KwaZulu-Natal, 18% of the users liked the toilet because it was the only toilet they had. Others liked it because of privacy, no smell, security, good structure. Emptying the vault remains a major problem.

### **3.3 Implementation of projects**

#### **3.3.1 Local council involvement**

The local councils in all three provinces took the leading role during the implementation process of the projects. Users were only involved after a decision was taken, just before the construction process started. They were not given a choice of the type of sanitation systems preferred. This was mentioned in all the provinces, except in Augrabies in the Northern Cape. The involvement of the local authority ceased to exist after completion of the projects. Technical post project support was evident in KwaZulu-Natal, where Ethekwini Metro established a satellite water and sanitation camp to address problems related to the maintenance of the UD toilet.

#### **3.3.2 Community participation**

Augrabies (Northern Cape) was the only community that received full information on UD sanitation system. Other users were compelled to use the UD toilet as they did not have any choice. The community participation only became visible after decisions were taken by the municipality. The community institutional capacity (e.g. sanitation committee) formed during the project implementation process ceased to exist upon completion of the project.

Despite the fact that majority of users were informed about their roles (emptying the vault), the findings showed that 86% of them were not willing to handle their own excreta.

#### **3.3.3 Service providers/implementing agents**

Some (63%) of the users did not have knowledge or details of the implementing agent(s). This was evident from the respondents that they did not know who the actual project's sponsors/donors were. This contradicted some of the principles of Batho Pele, which state that citizens should be given full, accurate information about the public services they are entitled to receive. The principle of openness and transparency was overlooked during the implementation process (DWAF, 2003).

#### **3.3.4 Training**

The training conducted by service providers in North West province regarding operation and maintenance of the UD toilet was insufficient. Users had no knowledge on basic operational information, such as using ash/sand or soil after defecating. The training on operation and maintenance of UD toilets rendered by the same service provider in two different areas was not the same (Taung, North West and Kimberley in Northern Cape). In Kimberley, the training did not cover excreta removal, 18% of the households viewed UD toilets as a temporary toilet – because they were informed that they would soon be converted into the aqua privy system. Users in the other provinces knew what was expected of them in terms of operation and maintenance of toilets, although in practice this was not implemented. Some users could not remember the topics covered during the training provided a year or two ago.

#### **3.3.5 Post project support.**

The technical team from the satellite water and sanitation camp of KwaZulu-Natal offered post project support to address maintenance problems of the UD toilet identified by the users (i.e. to unblock the urinal, urine receptacle and the urine pipes). It did not attend to major problems such as getting rid of water inside the vault. In the other two provinces, two or three members of the sanitation committee were trained on how to do the same maintenance. However, this is

being utilised by the users at a minimal scale because the people trained were not always available in the community, they had permanent jobs elsewhere or users did not know them. The sanitation committee disbanded after some time, because the majority of people serving on them were unemployed and no incentives were received from the local council to keep them. This was confirmed by a large number of blocked urine receptacles in several places.

### **3.4 Information sharing**

In all three provinces, the communities lacked knowledge regarding national/provincial sanitation strategies and programmes. In Kimberley (Northern Cape), information on operation and maintenance, particularly excreta removal, re-use of excreta for agricultural purpose and the usage of ash or sand/soil was not imparted to the users at all.

The demarcation of areas and the expiry of office terms for councillors created a big gap because information was not transferred to the relevant people (officials and new councillors), responsible for sanitation matters. The new councillors had little knowledge about the projects, particularly UDS and the stakeholders (implementing agents) involved.

## **4. CHALLENGES**

UDS in South Africa is at a crossroads. The research showed that a number of challenges need to be addressed to facilitate and ensure the successful and sustainable implementation of the concept and related technologies. These challenges are discussed below.

### **4.1 Local council involvement**

#### Challenge:

- The local councils are put under pressure to spend the budget allocated before the end of the financial year. This resulted in insufficient time and planning allocated for projects to be undertaken. In this scenario, the soft ware issues (users or the community members) are overlooked or engaged at a minimal scale with the main focus on the hard ware (e.g. infrastructure).

#### Possible interventions:

- The council has to address its needs as per Integrated Development Plan (IDP) and plan properly on projects to be implemented to ensure that all stakeholders are on board. The principles of BATHO PELE (meaning “people first”) should be applied in all the developmental projects, namely, consultation, service standards, access, courtesy, information, openness and transparency, redress and value for money (DWAF, 2003). Proper planning should be made to ensure that sufficient time is allocated to various tasks of the project, including the human element (potential users).

### **4.2 Implementation**

#### Challenge:

- The decision to implement UD toilets in all areas, with the exception of Augrabies was taken by the respective municipalities, without involving the community/potential users of these UD toilets. As a result the UD toilets were used at a minimal scale, or used for unintended purposes. Some of the community members did not know about any sanitation projects implemented in their community.

#### Possible interventions:

- The implementation process of any developmental project should be a joint venture among officials, politicians, service providers as well as the community. The success of any project relies on strong cooperation among the stakeholders. It should be

acknowledged that community members as the potential users of the UD toilets play a significant role throughout the process. It is therefore, important to implement the project with the community members, not for them (community participation). The needs of communities differ; it should be borne in mind that projects should be tailor-made to suit a particular community, hence the importance of consulting the community. If the whole process is implemented properly, the community/users will use, operate and maintain the sanitation system provided effectively, as they were involved throughout the decision making processes. This motivates the community/users to buy into the project

Challenge:

- The municipalities (implementing agents) did not deliver what they promised the community. The current strategy used by implementing agents is not acceptable to the community.

Possible intervention:

- The implementing agents need to review their implementation strategy in order to obtain buy-in from the community into the new technology, i.e. focus primarily on changing the mindset of the politicians because of their influential role(s) in the community. The government should develop a strategy to promote ecosan in South Africa.

### 4.3 Information sharing

Challenge:

- New councillors in North West did not have background information on the continuous projects undertaken before they came into office (implementing agents, sponsors/donors, costs etc.).

Possible interventions:

- It is the responsibility of the local council to share or communicate the information to the people intended to benefit from it (e.g. officials, councillors and the community at large). Information on any developmental projects undertaken in the local council should be recorded and accessible in some form of database. New councillors need to be made aware of the existence of such database to access.

### 4.4 Training

Challenge:

- The training provided on operation and maintenance was for a short period and inadequate in some areas, this resulted in the UD systems not operating in the intended manner due to lack of knowledge on the side of the users.

Possible intervention:

- When the local council appoints the service providers to render training to the community institutional capacity (local structure) on the operation and maintenance of the system, it must consider a trainer with good credibility.

Challenge:

- Users not adhering to the contents of the training on operation and maintenance of UD toilets.

Possible intervention:

- In provinces where the training was adequate, the community structure (sanitation committee) trained on the operation and maintenance of the system should reinforce the training by conducting refresher courses with the users, as well as monitoring the usage of the toilets and address the identified problems. The community structure should work closely with other local institutions (e.g. health workers in the clinic) to

ensure that the reinforcement of training covers the broader community. It should also assist in keeping the expertise in the community in a case where committee members are employed somewhere else.

#### **4.5 Post-project support**

##### Challenge:

- In most parts of the provinces visited, there was no form of support from the local authority after the implementation of projects.

##### Possible interventions:

- Post-project services should form part of the package of the implementation process to ensure sustainability of the project. This could be in various forms ranging from the local authority continuing to provide incentives to members of the local structure, visits to the community by the municipal officials, and identifying entrepreneurs for the establishment of a disposal/collection service, particularly for household not willing to empty the vault themselves, but who are prepared to pay for a service.

##### Challenge:

- Blocked and/or full toilets, as well as the improperly built toilets were abandoned. Some of the users reverted to use the old unhygienic pit toilets.

##### Possible intervention:

- Monitoring mechanisms should be put in place to ensure that the sanitation projects are implemented properly and to establish with the users what problems they encounter regarding the UD system.

## **5. CONCLUSION**

It is important to note that UDS is a very sound technology because it is an ecologically sustainable approach to the sanitation challenge. However, from the findings of this study it is apparent that UDS is currently not helping to resolve the sanitation problem in South Africa due to the negative perceptions and attitudes of the users resulting from the poor project implementation processes used by local authorities. By changing the implementation processes, following best practice examples world wide, facilitating user participation, and addressing the challenges discussed in this paper, the acceptance level of the users will improve, resulting in UDS becoming an acceptable solution in South Africa.

## **6. REFERENCES**

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