USE AND ACCEPTANCE OF URINE-DIVERSION SANITATION SYSTEMS IN SOUTH AFRICA

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Water Research Commission

USE AND ACCEPTANCE OF URINE-DIVERSION SANITATION SYSTEMS IN SOUTH AFRICA

Volume 2

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WATER RESEARCH COMMISSION

by

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EXECUTIVE SUMMARY

BACKGROUND

This report forms part of the output of Water Research Commission project number K5/1439 entitled "Strategy for the furtherance of knowledge and good practice of ecological sanitation (ecosan) technology in South Africa". The aims of this research project were as follows:

- To establish the current "state of the art" in ecological sanitation (ecosan).
- To determine:
  (a) the nature of processes taking place in the vault of a urine-diversion (UD) toilet; and
  (b) The relevant pathogen destruction parameters in order to increase understanding of the health aspects of UD toilet operation and maintenance (O&M), as well as safety criteria for use of the processed excreta.
- To explore appropriate practices for faeces collection and disposal, in order to facilitate the abovementioned safe O&M of the toilets.
- To produce a report describing the research conducted for the project, with conclusions and recommendations for improving the future implementation of UD sanitation projects.

REPORT STRUCTURE

The literature review of this study was published by the Water Research Commission as Report no. TT246/05. The other outputs emanating from this study are presented in four separate volumes.

The four volumes are:

- Volume 1: 1439/1/06 – Pathogen destruction in UD sanitation systems
- Volume 2: 1439/2/06 - Use and acceptance of UD sanitation systems in South Africa (this volume)
- Volume 3: 1439/3/06 - Use of human excreta from UD toilets in food gardens: Agronomic and health aspects.
- Volume 4: TT275/06 - Guidelines for the design, operation and maintenance of UD sanitation systems.

SUMMARY OF THIS VOLUME

Chapter 2: Acceptance and use of urine-diversion sanitation systems in South Africa

The sanitation policy of the South African government stresses that sanitation is not simply a matter of providing toilets, but rather an integrated approach that encompasses institutional and organisational frameworks as well as financial, technical, environmental, social and educational considerations. The White Paper on Basic Household Sanitation is based on a set of principles where sanitation is about being a human right and about environment and health.

The Terms of Reference for the social research aspect of this project were to assess the knowledge, attitudes and practices of communities/beneficiaries using UD sanitation systems in various parts of the country. People's behaviour is not motivated by rational needs, but rather by what they 'feel' or 'perceive' their needs/wants to be. Their choice of sanitation system or product to satisfy their

needs/wants is influenced by their feelings towards that entity, their perceptions of it and its ability to satisfy their needs/wants. The scope of the study did **not** include the evaluation of UD sanitation projects themselves or the evaluation of the implementation processes of these projects. It focused on the views, perceptions and attitudes of the users of the UD toilets as well as their daily routines (practices) when using these toilets.

The approach for the research focused on participatory data gathering in the target communities. A representative sample was drawn from various communities in South Africa where UD toilets had been built in order to gather the information. An interview schedule was developed and used as a guideline to steer the interviews; it was **not** used as a questionnaire. The questions were respondent-generated, meaning that the answer of the previous question led the researcher to the next question. The interviews were conducted by four social researchers of the CSIR in Northern Cape and Eastern Cape during the periods 18 to 25 August 2003, in KwaZulu-Natal during 08 to 11 June 2004 and in North West during 25 to 28 August 2004. The dates of the research varied due to the differing availability and readiness of the target communities for the research to be conducted. In each of the target communities the CSIR researchers were assisted by local community members. A total of 200 interview schedules were completed, covering 222 respondents representing 1 329 household members.

Even though there were differences in the perceptions of people from different provinces, the general conclusion of the research was that the implementation processes of the UD sanitation projects and the general lack of community participation in terms of decision making hampered the successful and sustainable implementation and use of the toilets. The implementation process of a UD sanitation project is a joint venture amongst officials, politicians and service providers, as well as the community. It should be acknowledged that the community, as the beneficiary, is a key factor throughout the process, and it is important to implement the project **with** the community members, not for them (community participation). If the whole process is implemented properly, the community will use, operate and maintain the UD sanitation systems effectively, as they chose them (association with the sanitation system and the sense of ownership is strong).

The research also showed that the UD toilet was accepted as a toilet but not as a technology, i.e. the respondents would use the UD toilet as a toilet but were reluctant to use the products (excreta) from the toilet. The general norm amongst communities of not handling human faeces presents a huge barrier for the use of excreta. The majority of the respondents was satisfied with the fact that they at least had a toilet, but almost all the respondents would have preferred to have a flush toilet or would rather use a VIP, as the operation and maintenance of a UD toilet was perceived to be difficult. Only in the target communities in Northern Cape did the respondents prefer the UD toilet because they were acutely aware of the water shortage in the province.

There was a tendency for interviewees to assume that the provision of sanitation services was the responsibility of local authorities. During the research this tendency was identified in the target communities (except those in KwaZulu-Natal where the issue was not discussed) where most of the respondents indicated that the disposal of excreta should be the responsibility of the local municipality and not the household. The need for a disposal/collection system was very community-specific. Some community members did not want such a service or to pay for such a service. Those who were willing to pay for disposal/collection of the faeces also thought it was the responsibility of the municipality to perform this task. Advocacy and training regarding the UD toilets were insufficient to change the perceptions of the users regarding ownership of on-site sanitation systems.

Most respondents were aware of the fertiliser value of faeces but not of urine. Only some of the respondents were willing to use the faeces in their gardens (mainly in the Northern Cape). Most respondents indicated that it was a bad practice to handle human faeces and that they would not eat food that was grown in human faeces. None of the areas visited used urine for agricultural purposes as there was a general perception that urine was harmful to agricultural produce (burning). The issue of using the products from the UD toilets was not discussed with respondents in the KwaZulu-Natal communities because eThekwini did not advocate the use of the products.

From the results of the research it is seen that careful planning is essential for effective communication and advocacy regarding UD sanitation. Because it is a relatively new technology in South Africa, it is essential that correct information on the operation and maintenance of the system is transferred. The difference in operation and maintenance between a pit toilet and UD toilet is significant. Proper training in the O&M of UD toilets for all the stakeholders is crucial; this includes both the implementing agents and users. No training or insufficient training will only impede the progress and sustainability of a good technology.

Local authorities should thoroughly engage the users in a consultation process prior to implementing UD sanitation technology projects to ensure a better understanding of the technology as well as to afford the communities an opportunity to air their views. Sanitation technologies and services should meet the needs and interests of the community and should be designed so that they complement existing practices. The approaches adopted by sanitation agencies/local authorities should also be acceptable to the culture and traditions of the communities. Demand responsive approaches (DRA) and participatory approaches (including the use of PRA and PLA methods), in particular the use of approaches such as Participatory Hygiene and Sanitation Transformation (PHAST), improve the sustainability of UD sanitation projects.

Promotion and advocacy processes should be systematic and continuous, rather than sporadic, and education/awareness sessions should be carried out at times and in locations that are convenient to the different groups of communities. Community partnering, in which communities contribute towards investment in UD sanitation, can help to make projects successful and sustainable.

Building standards for UD toilets should be flexible and appropriate. Construction companies should also adhere to good building standards. Poor construction, in order to save money, only deters users from optimal utilisation of the UD toilets.

Monitoring and evaluation are key elements in the sustainability of any technology. Monitoring mechanisms should be in place to ensure that projects are well implemented and to establish, with the users, any problems encountered with the systems. The health and/or environmental departments/sections of the local council should support the efforts of the community institutional capacity (volunteers) by providing incentives or allowances, since the majority of these people are unemployed. This will ensure the sustainability of the systems.

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Mr J N Bhagwan	Water Research Commission (chairman)
Mr B Pfaff	eThekwini Water and Sanitation
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1.1 BACKGROUND

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- Volume 4: TT275/06 - Guidelines for the design, operation and maintenance of UD sanitation systems.

1.3 PROJECT OUTPUT

Volume 1: Pathogen destruction in UD sanitation systems

This section of the report covers the following study objectives:

- Determination of the environmental factors affecting the survival of excreted pathogens in dehydrated faeces and how application of NaOH, ash and pasteurisation reduces the numbers of pathogens in these faeces;

- Determination of the biocidal effect of urine in relation to storage temperature and pH.

- Determination of the minimum vault storage time for faecal material commensurate with safety for handling. In essence, this research was aimed at determining pathogen die-off rates under different conditions of faecal storage. Parameters investigated included storage time, effect of various lid materials on vault temperature, effect of ventilation, and effect of various bulking agents.

Volume 2: Use and acceptance of UD sanitation systems in South Africa (this volume)

The terms of reference for this section of the project were to assess the knowledge, attitudes and practices of people using UD toilets in various parts of the country. The results of this research are intended to provide information to assist implementation of the technology in all areas of the country. Surveys were carried out in four provinces, namely Eastern Cape, Northern Cape, North West and KwaZulu-Natal.

Volume 3: Use of human excreta from UD toilets in food gardens: Agronomic and health aspects

Due to the emphasis on use of human excreta from ecosan toilets in many countries, there is a fair amount of international literature on the subject of increased crop yields resulting from this practice. Prior to this project, however, no work had been done in South Africa on the subject and the intention of this part of the research was to go some way in addressing the matter. An important motivational issue was the need to find ways of reducing poverty and improving family nutrition in South Africa, particularly among the poor.

Field and glasshouse investigations were conducted into the use of dehydrated faecal material from UD toilets for growing of spinach and cabbage. This was followed by trials using human urine on cabbage, spinach, maize and tomato.

As a logical extension to this work there was a need to establish the safety, from a health point of view, of using faecal material originating from UD toilets as a soil amendment for crop growing purposes. Pathogens can be recycled to humans if improper agricultural practices are implemented. The same faecal material used for the field investigation described above was used as a soil amendment in the cultivation of spinach and carrots. Detailed microbiological tests were conducted on this material as well as on the in situ soil before sowing and after harvesting, on the irrigation water, and on the harvested crops.

Volume 4: Guidelines for the design, operation and maintenance of UD sanitation systems

A large store of knowledge has been gathered on UD sanitation systems in South Africa, not only during the course of this particular project but also since the technology was first implemented in the country in 1997. Much has been learned from overseas experience as well. The guidelines contained in this volume are based on best practices that have been observed and documented, as well as the conclusions and recommendations contained in the various sections of the research report.

Additional project output: Some alternative models for the management of faeces from UD toilets

Initially, this part of the project was to include the establishment, on a pilot basis, of a business opportunity to provide a faecal collection concern in a community with urine-diversion toilets. For various reasons it was not possible to establish such a business at the time. The WRC Research Manager instead requested the project team to conduct a theoretical desktop study on the potential for entrepreneurial business development for faeces collection from UD toilet systems. It was decided to disseminate the findings of this study in the form of a journal paper or article.

Two scenarios were considered:

- The use of an independent agent to collect faeces from UD toilets, transport to a collection station or directly to a disposal area within 10 km of the target community for the permissible disposal by the relevant local authority.

- The use of an independent agent to collect faeces from UD toilets, transport this product to a designated site (eco-station) within 10 km of the target community for the manufacture of compost and sale of this compost to the local authority.

CHAPTER 2

ACCEPTANCE AND USE OF URINE-DIVERSION SANITATION SYSTEMS IN SOUTH AFRICA

2.1 INTRODUCTION

The Government's adoption of the White Paper on Basic Household Sanitation in 2001, the Framework for a National Sanitation Strategy in 2003, and the commitment to wipe out the sanitation backlog by 2010 require the mobilisation of all relevant national departments involved in sanitation implementation. Therefore, all stakeholders are required to understand and accept their roles and responsibilities for sanitation service delivery.

The sanitation policy of the South African government stresses that sanitation is not simply a matter of providing toilets, but rather an integrated approach that encompasses institutional and organisational frameworks as well as financial, technical, environmental, social and educational considerations (DWAF 1996).

The White Paper on Basic Household Sanitation (DWAF 2001) is based on a set of principles where sanitation is about being a human right and about environment and health. Sanitation improvement must be demand responsive and supported by an intensive health and hygiene programme. The programme should ensure community participation and integrated planning and development. The programme should also ensure co-operative governance while at the same time promoting delivery at local government level. Services provided should be affordable and sustainable to the household as well as to local government.

"Sanitation" refers to the principles and practices relating to the collection, removal or disposal of human excreta, household waste water and refuse as they impact upon people and the environment (DWAF 2002). Sanitation is any system that promotes sanitary, or healthy, living conditions. It includes systems to manage wastewater, stormwater, solid waste and household refuse and it also includes ensuring that people have safe drinking water and enough water for washing (DWAF 2002). The basic purpose of any sanitation system is to contain human excreta (chiefly faeces) and prevent the spread of infectious diseases, while avoiding danger to the environment (Austin and Duncker 2002).

The Strategic Framework for Water Services includes the following definitions of basic sanitation (DWAF 2003):

- *A basic sanitation facility is defined as a sanitation facility which is safe, reliable, private, protected from the weather, ventilated, keeps smells to the minimum, is easy to keep clean and minimises the risk of the spread of sanitation related diseases by facilitating the appropriate control of disease carrying flies and pests, and enables safe and appropriate treatment and/or removal of human waste and black or grey water in an environmentally sound manner.*

- *A basic sanitation service is the provision of a basic sanitation facility which is easily accessible to members of a household, has the necessary operational support for the safe removal of human waste and black and/or grey water from the premises where this is appropriate and necessary, and promotes the communication of good sanitation, hygiene and related practices.*

According to the National White Paper on Basic Household Sanitation (2001) "*sanitation refers to the principles and practices relating to the collection, removal or disposal of human excreta, household waste water and refuse as they impact upon people and the environment. Good sanitation includes appropriate health and hygiene awareness and behaviour, and acceptable, affordable and sustainable sanitation services*".

The minimum acceptable basic level of sanitation is:

- appropriate health and hygiene awareness and behaviour;
- a system for disposing of human excreta, household waste water and refuse, which is acceptable and affordable to the users, safe, hygienic and easily accessible and which does not have an unacceptable impact on the environment; and
- a toilet facility for each household.

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, they combine to break the cycle of diseases that spread when human excreta and waste are not properly managed (DWAF 2002).

Ecological sanitation (ecosan) is a sanitation system that turns human excreta into something useful and valuable, with minimum risk of environmental pollution and no threat to human health. It is a sustainable closed-loop system that treats human excreta as a resource, not as a waste product. Excreta are processed until they are free of disease organisms. The nutrients contained in the excreta may be recycled and used for agricultural purposes (Austin and Duncker 2002). Ecosan can be viewed as a three-step process: containment, sanitisation and recycling of human excreta. The objective is to protect human health and the environment while reducing the use of water in sanitation systems and recycling nutrients to help reduce the need for artificial fertilisers in agriculture. Ecosan represents a conceptual shift in the relationship between people and the environment, and is built on the necessary link between people and soil (Esrey et al 1998).

Urine-diversion (UD) is one of the sanitation technologies implemented in various parts of the world (urban and rural, developed and developing countries). Its most important characteristic is the low moisture content in the faeces receptacle. The urine is diverted at source by a specially designed pedestal and is not mixed with the faeces. A pit is not necessary as the entire structure may be constructed above ground, or may even be inside the dwelling. Ash, dry soil or sawdust is sprinkled over the faeces after each defecation. The ash absorbs the moisture and also controls odours and flies. The dry conditions facilitate rapid desiccation of the faeces. The desiccated faeces make a good soil conditioner, while urine is an excellent source of fertiliser, being rich in nitrogen, phosphorus and potassium (Austin & Van Vuuren 2001).

The main advantages of a UD sanitation system are that:

- the entire structure can be built above ground – there is thus no need for expensive digging and lining of pits;
- urine is diverted, no water is used for flushing; and
- the volume of the processing vault is fairly small, as it is emptied periodically (Esrey et al 1998).

UD sanitation technology has been used successfully for decades in many developing countries such as Vietnam, China, Mexico, El Salvador, Ecuador, Guatemala, Ethiopia, Zimbabwe and recently also in South Africa. This sanitation technology is suggested as an additional means of combating the health and environmental problems caused by inadequate sanitation in many areas (Austin & Van Vuuren 2001).

2.2 TERMS OF REFERENCE

2.2.1 Purpose

The Terms of Reference for the social research aspect of this project were to assess the knowledge, attitudes and practices of community members/beneficiaries using UD sanitation technology in various parts of the country.

People are motivated by and act upon their perceptions rather than any rational thought process. People's behaviour is not motivated by rational needs, but rather by what they 'feel' or 'perceive' their needs/wants to be. Their choice of sanitation or product to satisfy their needs/wants is influenced by their feelings towards that entity, their perceptions of it and its ability to satisfy their needs/wants. Their perceptions didn't necessarily correspond with the developer's view of what the reality should be, because reality is subjective and each person's reality is unique to them, and is based upon their interpretation of the events and circumstances in which they find themselves, i.e. that reality is the perception of the person perceiving it (www.objectivity.co.za).

Perceptions are formed through:

- feelings, beliefs, mental pictures, gut feel;
- the sum total of receptions of information accumulated over time, including experiences;
- the reality that pertains although it may not be "true"; and
- change with changing circumstances – information.

Perceptions also influence behaviour (practices), guide all behaviour, motivate or demotivate all actions and determine the future success of technologies and/or products. To manage the future of a technology or a product (such as UD sanitation), perceptions have to be managed and applied to adapt the strategy of technology implementation and transfer to the tasks of creating, shifting, changing and managing perceptions. In view of all of this, it could be that a particular technology or product may be entirely capable of satisfying an individual's needs/wants, but if the perception exists that it doesn't or can't, the individual will choose an alternative (www.objectivity.co.za).

An attitude is one's basic 'mind set', one's outlook, how one views things. For example, people with different attitudes will view (perceive) the same situation from quite different perspectives. A particular situation will be seen as a problem to one person and an opportunity to another. It is usually the person who sees that situation as an opportunity that will be able to think of a useful solution to correct the situation. A positive attitude can see opportunities in a situation where a negative attitude will only see problems and obstacles. The difference between a positive attitude and a negative attitude can often mean the difference between success and failure of a

technology or product. A positive attitude will transmit positive and friendly signals, where a negative attitude repels people.

2.2.2 Objectives

The objectives of the research were the following:

- to determine the knowledge, attitudes and practices of the users of UD sanitation systems;
- to explore appropriate practices for faeces collection and disposal, in order to facilitate safe operation and management;
- to investigate aspects such as understanding of principles, condition of toilets, O&M methods, disposal of urine and dehydrated faeces, methods of dealing with anal cleansing materials, perceived advantages and disadvantages, etc.;
- to determine the level of local government support for O&M activities;
- to establish current hygiene practices and general state of health in the targeted communities; and
- to prepare a report on the findings.

The scope of the study did **not** include the evaluation of UD sanitation projects or the evaluation of the implementation process of these projects. It focused on the views, perceptions and attitudes of the users of the UD toilets as well as their daily routines (practices) when using these UD toilets.

2.3 PROJECT DESCRIPTION

2.3.1 Methodological approach

The quality of the relationship that researchers establish with participants of a study is crucial to the researchers' success in collecting data and making observations that will enable them to draw reliable and valid conclusions. Very often researchers have contributed little to developing community members' knowledge or capacity to improve their quality of life in return for observing and gathering information. Therefore, respondents may refuse to provide more than the minimum of information, or may provide information that is incorrect and untrue but which might improve their situation.

Although many researchers have strong preferences for particular research methods and tools, there is no single correct way to conduct research in communities. Ethical and practical constraints need to be considered and the objectives need to be very clear. Repeatable procedures and reliable test instruments are desirable tools in conducting community research, using data gathering techniques that provide valid measures of what is being studied. The most reliable and valid way of gathering information in communities is called participant observation – the researcher lives in the community for an extended period of time to gather information (Slocum et al 1995). However, this is not always practical due to time and budget constraints; therefore, other methods need to be employed that are almost as reliable as this method.

The methodological approach for this research focused on gathering information in a way that reflected the true state in the community as closely as possible, without reducing the research to the level of "count them" mechanics. Various options were considered, such as questionnaires, key informant interviews, structured households surveys, community workshops, semi-structured household interviews, focus group

discussions and observation. It was decided to conduct qualitative research through the use of unstructured household interviews while validating and cross-checking the responses by physical observations because it proved to be the most successful and unbiased way of collecting information about a sensitive issue such as household sanitation practices.

Quantitative methods are research methods concerned with numbers and anything that is quantifiable. They are therefore to be distinguished from qualitative methods. The qualitative method is a research method that deliberatively gives up on quantity in order to reach a depth in analysis of the object studied. Qualitative methods are commonly used in conjunction with quantitative methods. Using qualitative methods it is often possible to understand the meaning of the numbers produced by quantitative methods (Clarke 2000; Neuman 1997).

The simplest definition is that qualitative methods involve the collection and analysis of information based on its quality and NOT quantity. They are methods in which the results are primarily conveyed in visual or verbal form to establish context. They use unconstructed logic to unravel the meaning of research. This means there are no step-by step rules, terms or procedures that must be followed. Qualitative methods are often referred to as subjective.

The KAP (knowledge, attitudes, practices) study was developed by the World Health Organisation (Duncker 2000). The emphasis of the KAP tool is on qualitative data to determine knowledge, attitudes and practices and not on statistical analysis of the data. It is a model for facilitating change as it occurs in individual relationships, to incorporate new practices that are being introduced to people. It is also instrumental in identifying the factors that influence behaviour. The steps of a KAP study are based on the assumption that if knowledge is transferred, adoption will follow. The method concentrates on small group discussions with two-way communication in exchanging information about attitudes and behaviour. The advantages of using a KAP study is that it provides more accurate insight into what people actually think than other techniques. The results produced also reflect social realities more accurately than a method that asks people to act in isolation. It also provides the opportunity to study group dynamics.

2.3.2 Method and key activities

A preliminary investigation into most of the UD projects across the country was launched in order to draw a sample of areas for research. The criteria used to select the target communities were the following:

- length of use of the UD toilet;
- willingness of the community to participate in the research;
- the existence of an institution, such as a Sanitation Committee, for liaison in each community;
- cooperation of the relevant local authority/implementing agent; and
- variety of cultures, customs, etc. of the communities.

A representative sample was drawn from various communities in South Africa where UD toilets had been built in order to gather the information (see Annexure A for a map). In some instances (Eastern Cape - 100% and North West Province - ±70%) the research sample was bigger than 10% due to the small number of UD toilets already built in those areas.

In the case of KwaZulu-Natal the research sample was 10% of the number of UD toilets already built in the two target communities but less than 10% of the total number of urine-diversion toilets built in the province in June 2004. The HSRC also conducted research regarding the UD toilets in KwaZulu-Natal and the findings of their research were acknowledged and utilised in this report as cross-checking and supporting the data for this research.

The approach for the research focused on participatory data gathering in the target communities. Members of the respective Sanitation Committees in the communities were approached to assist with the sampling of the target households as well as to assist in the liaison with the community members and in the data gathering process.

The results of the research are incorporated into recommendations for the implementation of improved ecological sanitation projects (specifically UD sanitation projects).

The work programme for the research was developed in response to the areas of investigation (see Annexure A for a map). The process was the following:

- **Phase A**: Development of an interview schedule for households in the target communities and drawing the research sample (see Annexure B for the interview schedule).
- **Phase B**: Information and data gathering through interviewing members of households in the target communities.
- **Phase C**: Collation and analysis of the information and data.
- **Phase D**: Documentation of the results and conclusions.

The interviews were conducted by four social researchers of the CSIR in Northern Cape and Eastern Cape during the periods 18 to 25 August 2003, in KwaZulu-Natal during 8 to 11 June 2004 and in North West during 25 to 28 August 2004. The dates of the research varied due to the differing availability and readiness of the target communities for the research. In each of the target areas the CSIR researchers were assisted by local community members.

The researchers used the interview protocol (see Annexure B) as a guideline to steer the interviews; it was NOT used as a questionnaire. Informal interviews reveal issues that cannot be determined by implementing a questionnaire or observation only. Open-ended questions that are broad in nature were asked according to the informal interview schedule. The questions were respondent-generated, meaning that the answer of the previous question led the researcher to the next question. The researchers started discussing the UD toilet in general and guided the interviewees to the information needed. The information was gleaned from the discussions around the use of the UD toilet and people's perceptions and feelings. In cases where certain information was not provided during the discussions, questions were posed to probe the specific issue. In many cases the discussions started with the one or two respondents of the household, but other members (sometimes up to ten) of the surrounding households joined the discussions. In these cases the discussion formed a focus group and the results were classified as results from a focus group discussion.

Cross-checking of information on the same topic gathered from different sources was done by using different methods by different interviewers.

2.3.3 Constraints experienced during the project

During the early stages of the research, although eThekwini Municipality had a large number of UD toilets, it was not possible to investigate this area due to concerns raised by the local authority. After negotiations the research could commence but the questions regarding a collection/disposal system in the communities had to be omitted on request of eThekwini. Therefore, comparisons and correlations regarding these issues could not be drawn in this report.

The data is over-populated by information from the Northern Cape; the provincial government of the Northern Cape has decided to implement a dry sanitation policy due to the water scarcity in the province and information was readily available on a big scale. In the other provinces UD toilets were built in only some communities, with the exception of KwaZulu-Natal where a large number had been built. However, access to communities in KwaZulu-Natal was limited due to the concerns raised by eThekwini Municipality because they wanted the households to assume total responsibility and ownership of the UD toilets.

2.3.4 Data analysis

The interview schedule contained quantitative as well as qualitative data.

For the purpose of quantitative analysis, the questions that could be quantified were selected and coded. The data from these quantitative questions were captured and analysed on MS Excel.

For the purpose of qualitative analysis, the qualitative questions were selected and coded. The responses to the qualitative questions were listed and prioritised according to the frequency (number of times) a response was given by different respondents/interviewees.

2.4 RESEARCH FINDINGS

A total of 200 interview schedules were completed, covering 222 respondents and 1 329 household members. The responses originated from the areas listed in Table 1:

2.4.1 Background of research areas

<u>Northern Cape</u>

Five communities were selected in Northern Cape due to the size of the province as well as the fact that the provincial government was implementing a dry sanitation strategy. These communities were mainly inhabited by Afrikaans speaking (Griqua and San) people. In most cases the respective municipalities made the decision to implement UD toilets in line with the provincial strategy of dry sanitation. The UD projects were implemented by a number of consultants in the different communities.

<u>North West</u>

In North West a number of communities near Taung were visited to be able to gather a representative sample for the research. It is a sparsely populated area and inhabited by Tswana speaking (Sotho) people. The UD projects were implemented by the Greater Bophirima District Municipality before the Greater Taung Municipality was established. However, the current councillors and officials of Greater Taung

Municipality were not informed about the UD projects or other sanitation projects implemented by Bophirima Municipality.

Table 1: Areas where interviews were conducted

AREA	TOWN	NUMBER OF UD TOILETS BUILT (at time of research)	INTERVIEW SCHEDULES COMPLETED	NUMBER OF INTERVIEWEES
Northern Cape	Campbell	165	15	15
	Boegoeberg (Groblershoop)	180	15	15
	Augrabies	158	15	18
	Merriman	20	16	17
	Hanover	70	21	22
Eastern Cape	Sinyondweni	10	10	10
	Gwebinkundla	10	10	10
	Manyosini	10	10	10
KwaZulu-Natal	Umnini	310	30	38
	eHlanzeni	215	30	30
North West	Matolong	5	2	3
	Tlapeng	2	1	1
	Motsweding	10	6	7
	Lower Majeakgoro	15	8	8
	Sekhing	5	4	5
	Kokomeng	5	5	5
	Khudutlou	2	2	2

KwaZulu-Natal

Umnini and eHlanzeni are hilly, rural communities south of Durban inhabited by Zulu speaking people. These UD projects were implemented by eThekwini Municipality as a comprehensive single project across the area of Durban, with the assistance of Mvula Trust in the two target communities.

Eastern Cape

Three communities around Umtata (Manyosini, Sinyondweni and Gwebindkundla) formed part of a pilot project for UD sanitation in 1998. This pilot project was implemented by the Eastern Cape Appropriate Technology Unit (ECATU) assisted by the CSIR. Full community participation was the key to this pilot project. Ten households in each community were identified by the community members themselves to participate in the pilot project.

2.4.2 Gender of respondents

The gender of the respondents in total was 76% female and 24% male. This is due to the fact that, when the research was conducted, the female household members were more readily available during the day (being at home, and not having a day job) while the male household members were away at work. Also, one third (34%) of the households was female-headed households.

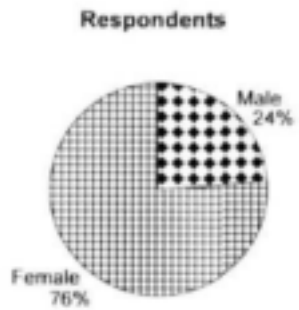


Figure 1: Composition of target group

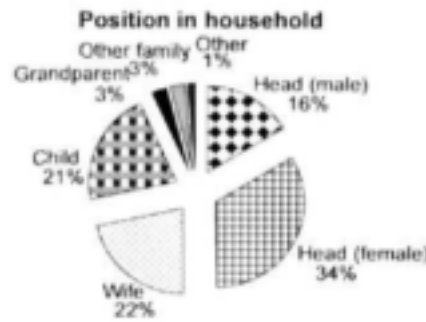


Figure 2: Position in household

2.4.3 Household information

The gender distribution of the household members that were interviewed in the various provinces was as follows:

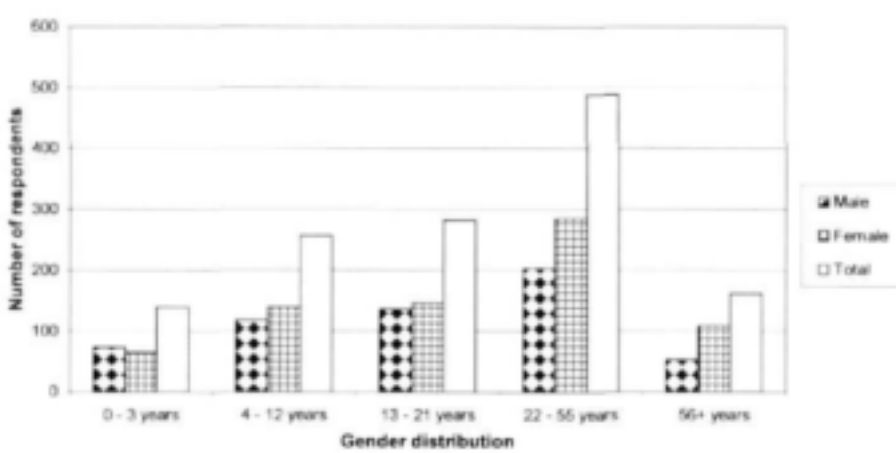


Figure 3: Gender of household members

In the age groups younger than 21 years, the gender distribution was almost equal. In the age groups older than 21 years, there were more females than males. The age group of 56 and older was quite small with fewer males than females. In general there were more females than males in the households, indicating that the UD toilets were used mostly by females.

The average size of the households varied per province and per community. In KwaZulu-Natal the households were bigger (between four and 10 people) and inhabited by more adults because the communities were quite close to Durban, a major economic centre. The average household size in the other provinces was smaller (between three to six people) and inhabited mostly by babies and children with one or two adults looking after them. These communities were mostly rural and quite a distance away from major cities and economic centres.

2.4.4 Sanitation

Types of toilets

The following types of toilets were found in the households interviewed:

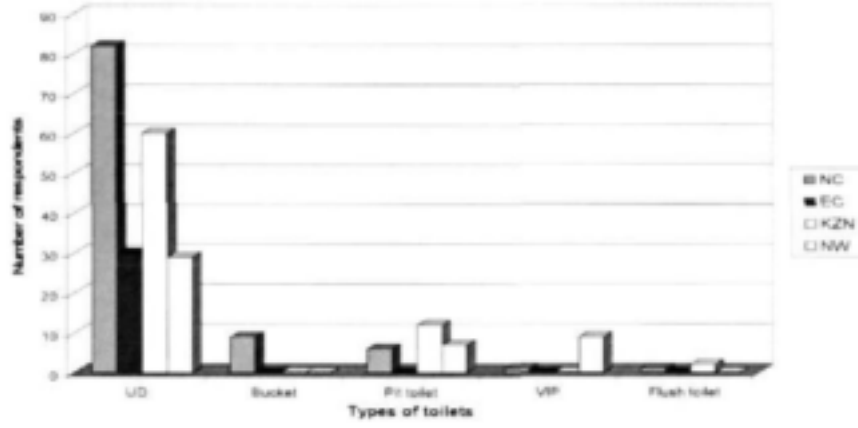
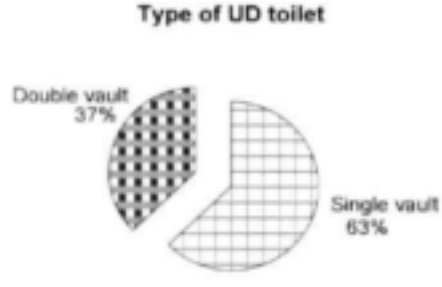


Figure 4: Types of toilets

The majority of the respondents (86%) used a UD toilet, even though some of them also still used a bucket system or still had a pit toilet or a VIP toilet in the yard. Those who had flush toilets in their yards did not use the UD toilet at all.



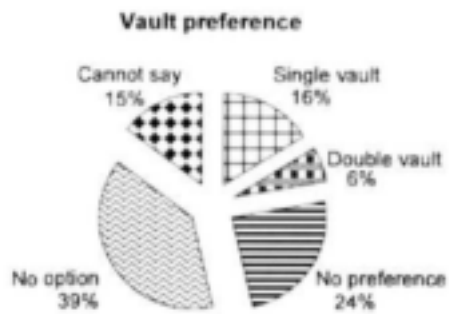
All the UD toilets in Eastern Cape and North West were constructed with single vaults. All the UD toilets in KwaZulu-Natal were constructed with double vaults. In Northern Cape, 80% of the UD toilets were constructed with single vaults. In total, almost two thirds (63%) of the UD toilets were constructed with single vaults.

Figure 5: Type of UD toilet

Vault preference

This question was posed to the respondents to determine whether they knew about an option other than the one they had.

The preference of the users regarding single or double vaults was difficult to determine as most of them either had single vaults or double vaults, and could not respond in terms of the one they did not have. Therefore, those who had a single vault preferred the single vault and those who had a double vault preferred the double vault.



More than half the respondents (54%) said that they did not have a choice regarding the vaults. This was mainly due to the fact that the UD toilets (63%) were built with single vaults and the respondents did not know about, or never used, double vault toilets.

Figure 6: Preference of vault

Those respondents (37%) who had double vaults said that they preferred the double vault for the following reasons:

- The vaults can be alternated.
- They only know the double vault.

Those who had single vaults said that they preferred the single vaults for the following reasons:

- Single vaults are less work than double vaults.
- Single vaults are easy to use and maintain.
- Single vaults are easy to clean alone.

From the research it was clear that the respondents were not informed and did not know about other options regarding the vaults, except in Northern Cape where some communities had double vault toilets and others had single vault toilets.

Length of use of the UD toilets

The respondents were asked how long they had been using the UD toilet, to determine whether it had been necessary for them to empty the vaults.

The data showed that 38% of the UD toilets were used for longer than one year, 39% for one to six months and 16% for shorter than six months. A number of UD toilets (7%) were not used at all. Most of the UD toilets were in use for six months to a year. In Northern Cape four UD toilets were in use for more than three years.

Only a few people had had to empty the vaults even though they had been using the UD toilet for an extended period, sometimes more than three years. The need to empty the vaults also depended on the size of the household and the number of people using the toilet.

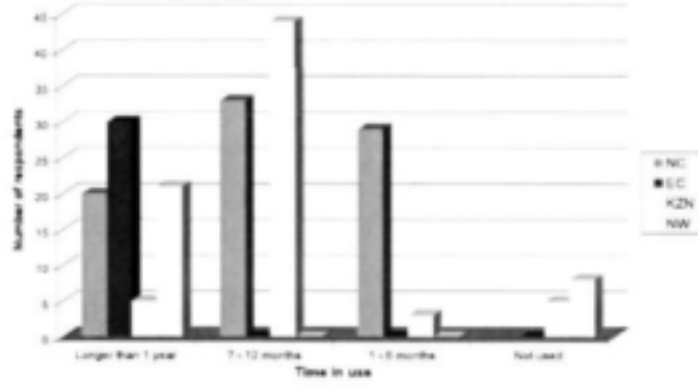


Figure 7: Time in use

Toilet providers

A question was posed to the respondents regarding the origins of funding for the UD toilets in their communities to determine their knowledge of national and provincial strategies regarding sanitation.

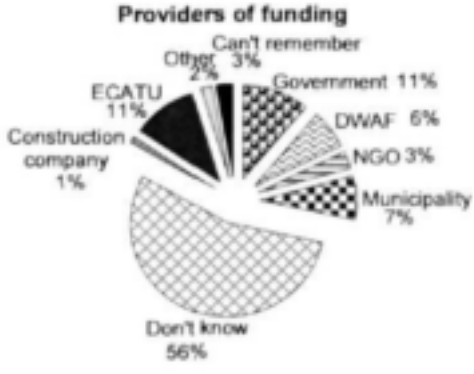


Figure 8: Providers of funding

Less than half (44%) of the respondents replied that they knew where the funding for the UD toilets came from, and only 28% knew the correct source.

More than half (56%) of the respondents replied that they did not know where the funding for the UD toilets came from, indicating that the respondents were not aware of the government's national and provincial sanitation strategies and programmes.

Household contribution towards UD toilet

Almost two thirds (64%) of the respondents did not contribute towards the construction of the UD toilet, 33% did contribute and 3% did not know whether the household contributed or not.

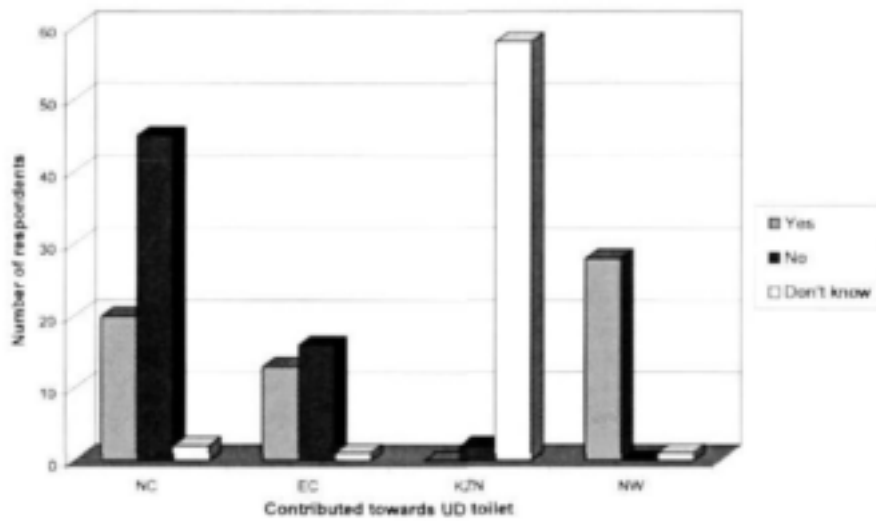


Figure 9: Contribution towards UD toilet

In KwaZulu-Natal the respondents were reluctant to say whether they contributed towards the UD toilet or not, and replied with the "Don't know" response. Probing for a different response by asking what contribution was made, it showed that people in KwaZulu-Natal did not contribute towards the UD toilet.

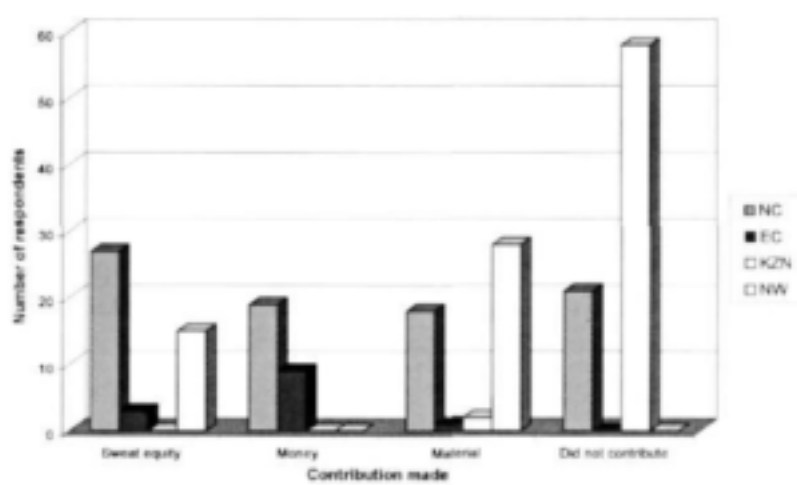


Figure 10: Contribution towards construction

Those who did contribute towards the construction of the UD toilets in the other provinces did so by providing material/water and paying money, or digging the pit (sweat equity) and providing material/water, or only paying money.

The material the respondents contributed consisted of corrugated iron for the roof (mainly from the superstructure of their old pit toilets) and bags of cement and water. Some provided bricks as well.

The sweat equity consisted of digging the pits for the vaults, or assisting the builders.

The monetary contribution consisted mainly of the R5-00 registration fee that was paid by the households in Augrabies village. The other target communities did not pay any fee/money for the UD toilet.

Location of UD toilets and preference of location

The respondents were asked whether they wanted the UD toilet to be part of their houses with an inside door now that they had been using it for a while.

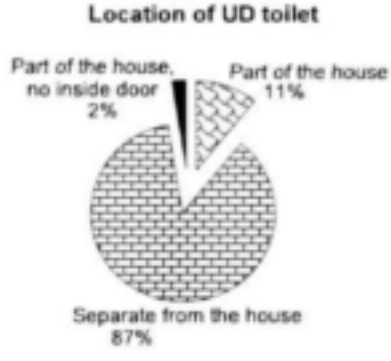


Figure 11: Location of UD toilet

The majority (87%) of the UD toilets was situated separately from the houses. The UD toilets (11%) that were part of the houses were toilets that were upgraded from the bucket system in existing railway houses. Two UD toilets were built as part of the house but had no door leading into the house.

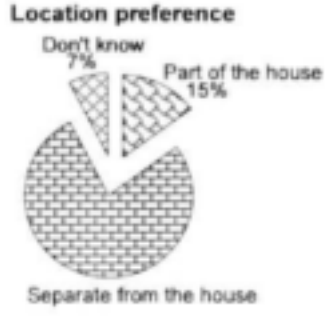


Figure 12: Preference of location for UD toilet

The majority (78%) of the respondents preferred the UD toilet to be separate from the house. The main reason for this reply was that they were used to the toilet being separate from the house. Some respondents said the toilet might create a bad smell if it was part of the house.

Perceptions of the UD toilets

The respondents were asked whether they liked the UD toilet or not. They replied in the following manner:

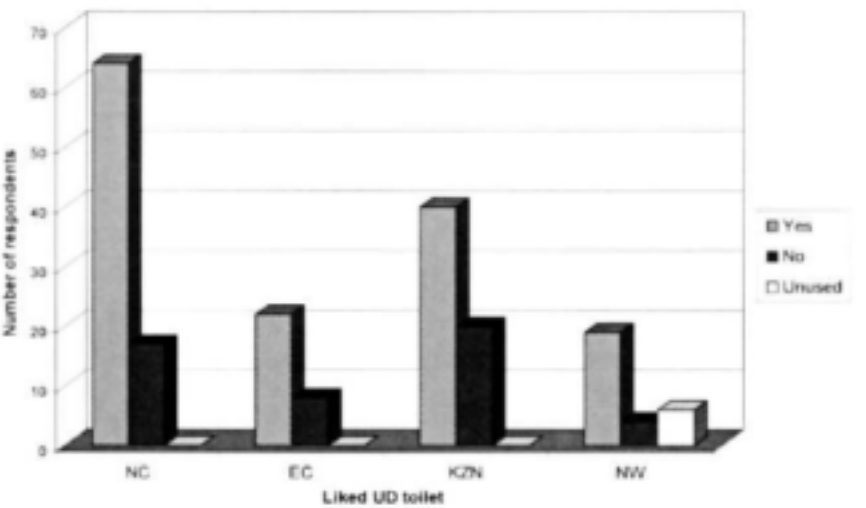


Figure 13: Like/dislike UD toilet

The majority (75%) of the respondents in the target communities said that they liked the UD toilet, but 25% said they did not like it.

The following were the reasons provided by the respondents for liking the UD toilet:

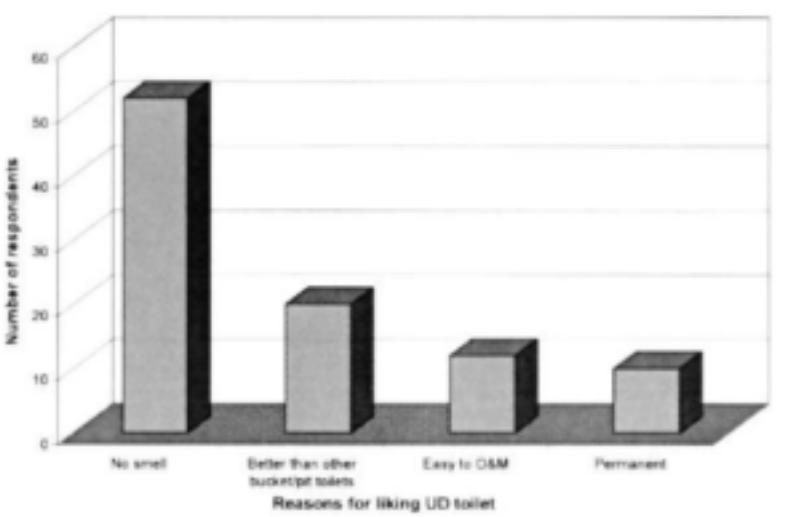


Figure 14: Reasons for liking the UD toilet

Other reasons provided were province specific and were the following:

- It is convenient, safe and comfortable.
- They have no problems with the toilet.
- If reduces the spread of diseases.
- It does not use water.
- It looks beautiful.

The reasons provided by 21% for not liking the UD toilet were mainly the following:

- Emptying of the vault (33).
- It is difficult to operate and maintain (13).
- Construction mistakes (10).
- Prefer a flush toilet (7).

It is clear from the data that emptying of the vault and handling of human faeces were the biggest barriers to the acceptance of UD toilets as a sanitation technology. The respondents said that they liked the UD toilet as a toilet but handling of the excreta would always be a problem.

When the respondents were asked whether they preferred the UD toilet (excluding the flush toilet) above other types of toilets, more than two thirds (68%) of the respondents said that they preferred a UD toilet. They provided the following main reasons:

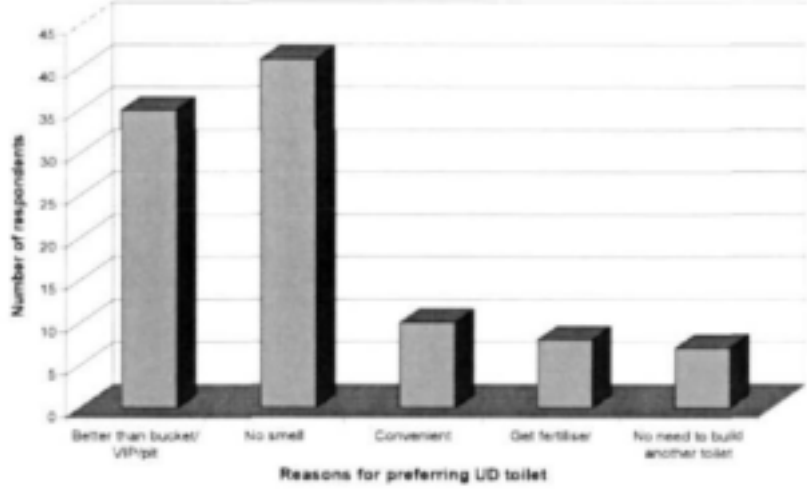


Figure 15: Reasons for preferring the UD toilet

Other reasons provided were the following:

- There are no flies.
- It is permanent.
- We don't have to pay for water.

The reasons provided for not preferring a UD toilet to other types were the following:

- Emptying of the vault.
- We don't like handling faeces.
- It is difficult to operate and maintain the UD toilet.
- It is difficult/costly to remove and reseal the slab of the vault.

The majority of the respondents (73%) also said that they would recommend the UD toilet to others for the same reasons as above.

This indicates that there is a general acceptance of the users of the UD toilet as a toilet, but not as a technology. The use and handling of human excreta was a problem for most of the users across the four provinces, which meant that the UD toilet might be used as a toilet as long as someone else removed the faeces from the vaults.

2.4.5 Training in the use of UD toilets

Training received

The respondents were asked whether they received training in the operation and maintenance of the UD toilet, in order to determine the level of knowledge of the technology as well as the health and hygiene aspects. They replied as follows:

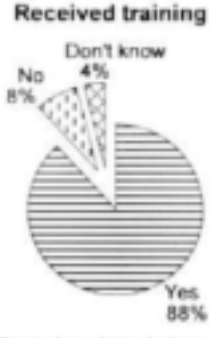


Figure 16: Received training

The majority (88%) of the respondents received training in the operation and maintenance of UD toilets. Those who did not receive training were scheduled for training. These house-holds were given posters/pamphlets depicting the operation and main-tenance of the UD toilet in the mean-time. A small number (4%) did not know whether the households re-ceived training or not.

The respondents said the training was conducted by people in the community, consultants or the Sanitation Committee. A number of people (12%) did not know who presented the training and 6% could not remember the names.

Understanding of the training

The majority (85%) of the respondents replied that the training they received was useful to the household and that they would not have been able to use the UD toilet correctly without the training.

The respondents said that training consisted of the following:

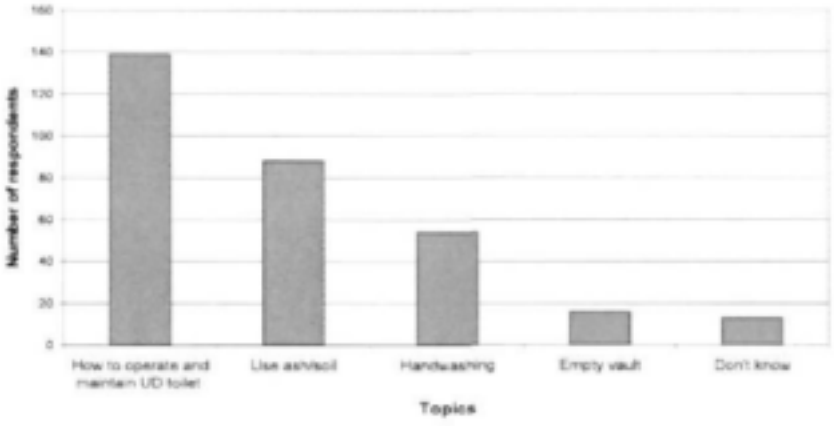


Figure 17: Topics of training provided in the target communities

Some respondents said the training also included the following:

- Health and hygiene aspects.
- Use vegetable peels to cover faeces.
- No water/moisture/rubbish in the vault.
- Excreta can be used as compost in the garden.
- Avoid using chemicals in the toilet.
- Keep the door closed.

This indicates that the users have a general knowledge on the operation and maintenance of UD toilets, but only a few (6%) mentioned health and hygiene aspects. The training on the health and hygiene was limited to washing hands and keeping the toilet clean. Training on the transmission of water and sanitation related diseases is necessary for community members to understand the importance of personal health and hygiene.

2.4.6 Operation of the UD toilets

Household use of UD toilets

The data showed that almost everybody in the household, except small children, used the UD toilet. Both women and men used the same toilet, except in a few instances where only women used the toilet because men still preferred to go to the bush to urinate, even though a urinal was installed in the UD toilet.

Children under the age of 10 were not allowed to use the UD toilet for the following reasons:

- They are too small and too young to use the seat properly.
- They are afraid they might fall in the vault.
- They defecate in the urine receptacle.
- They don't know how to use the toilet.

The children still used the veld or the old pit toilets, which represents a health risk for the children and their families. The implementation of a "kiddie seat" will be advantageous in all the communities.

Cleansing material

The respondents were asked where they disposed of the anal cleansing material after they had used the UD toilet.

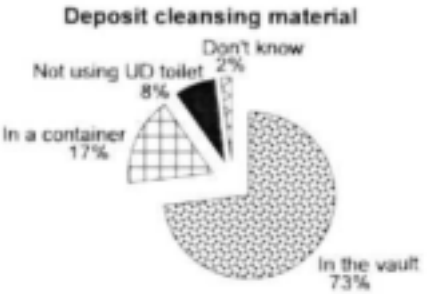
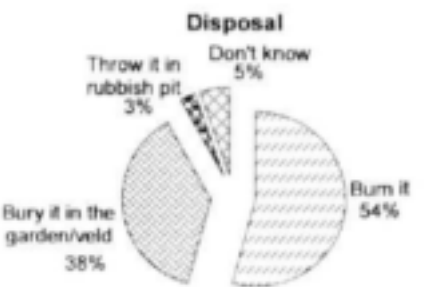


Figure 18: Deposition of cleansing material

More than two thirds (73%) of the respondents said that they deposited the anal cleansing material in the vault.



Those (17%) who kept the cleansing material in a separate container in the toilet cubicle were mostly from Eastern Cape. They disposed of it once a week or once a month by burning or burying it.

Figure 19: Disposal of cleansing material

Operation and maintenance of the UD toilets

The respondents were asked what they used to cover the faeces after using the UD toilet. They replied as follows:

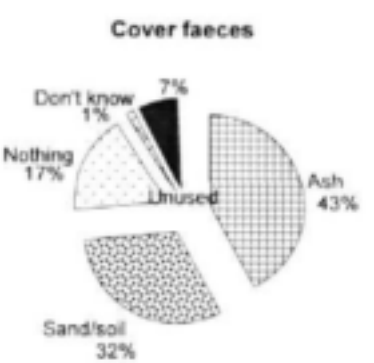


Figure 20: Covering of faeces

The majority (75%) of the respondents used either ash or sand/soil after each defecation. 17% of the respondents did not use anything to cover the faeces, and 7% of the UD toilets were not used.

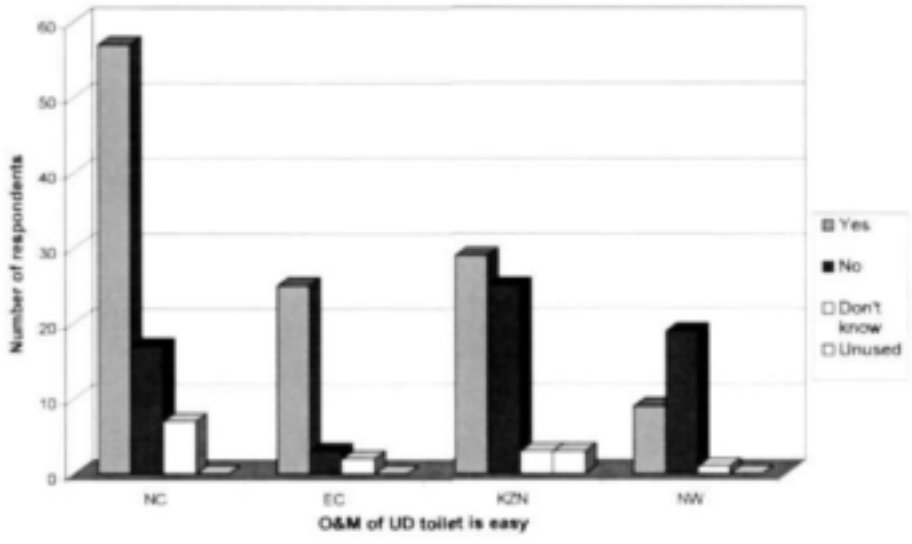


Figure 21: O&M is easy

Almost two thirds (60%) of the respondents said that the UD toilet was easy to operate and maintain (including excreta removal) while 32% said it was not easy and 8% did not know (because it had not yet been necessary to empty the vault). The respondents who said it was not easy mentioned the following reasons:

- Nobody wants to empty the vault.
- We do not want to work with excreta.
- The vaults are too deep and difficult to clean.
- The urine pipes block.
- The construction of the UD toilet inside existing houses necessitated that the excreta had to be pushed down the pedestal to the vault.

It is expected that the percentage of people replying that the operation and maintenance of the UD toilet is difficult will rise once they have had to empty their vaults.

2.4.7 Disposal and/or use of excreta

Disposal of urine

The majority (96%) of the households disposed of the urine in a soak pit. Only four respondents piped the urine to trees and plants. One respondent collected the urine in a container in order to throw it away in the veld. Only four respondents were aware of the fertiliser value of urine.

Emptying of the vaults

The respondents were asked whether they had objections to emptying the vault and disposing of the excreta themselves.

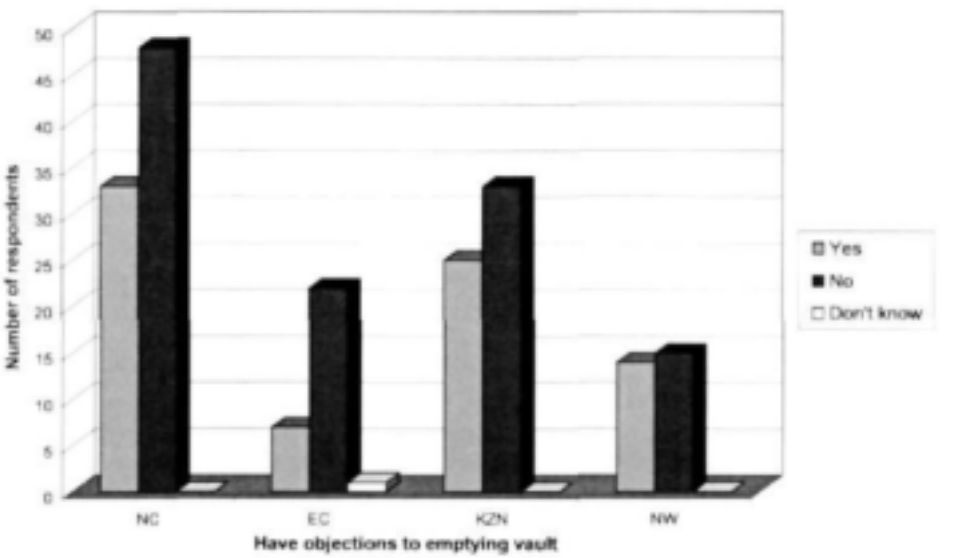


Figure 22: Objections to emptying the vault

More than half (59%) said that they did not have objections to emptying their vaults while 40% said they had objections.

The 40% of respondents who did have objections to emptying the vault and disposing of the excreta themselves provided the following reasons:

- We do not want to work with excreta.
- The municipality must take the excreta away.
- It is not easy to dispose of the contents of the vault.
- The emptying of the vault is not easy.
- Nobody is willing to empty the vault and handle the faeces.
- We will hire people to empty the vault.

Only 24% of the respondents had needed to empty their vaults since they started using the UD toilets. The expectation is that the figure for those who did not have objections to emptying the vault will decrease once they have had to do so.

Use of excreta

When asked in what way the respondents used, or will use, the contents of the vault, they replied in the following manner:

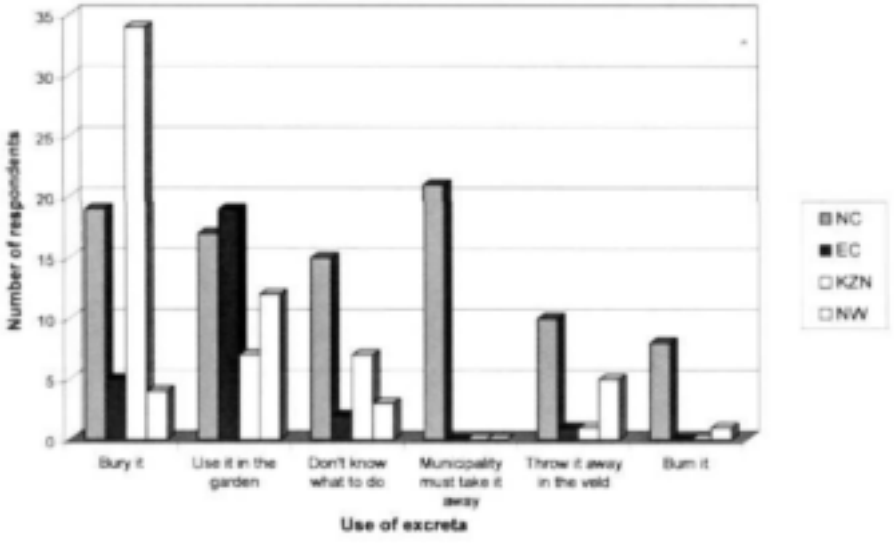


Figure 23: Use of excreta

The majority (85%) of the respondents was aware of the fertiliser value of faeces but only four (4) were aware of the fertiliser value of urine. More than half (59%) of the respondents said that they would use excreta in their gardens. The majority of the latter respondents lived in Northern Cape.

The reasons provided by 38% of the respondents for not wanting to use the excreta in their gardens, were the following:

- We don't like handling faeces.
- It is unhealthy to use excreta in the garden.
- Faeces smell, no matter how dry they are.
- Urine kills plants.

This indicates that one the features of UD technology (i.e. the availability of excreta for use as soil amendment and fertiliser) is not acceptable to the users of UD toilets. The respondents were willing to accept and use the UD toilet as a toilet (mostly because they had no other options), but not as a sanitation technology in its fullest sense.

2.4.8 Collection/disposal service

This section contains only data from Northern Cape, Eastern Cape and North West. The questions related to this section had to be omitted from the interview schedules in KwaZulu-Natal on request of the eThekwini Municipality.

Objections to a collection/disposal service

The respondents in Northern Cape, Eastern Cape and North West were asked whether they had objections to the establishment of a collection/disposal service in their communities for excreta from the UD toilets.

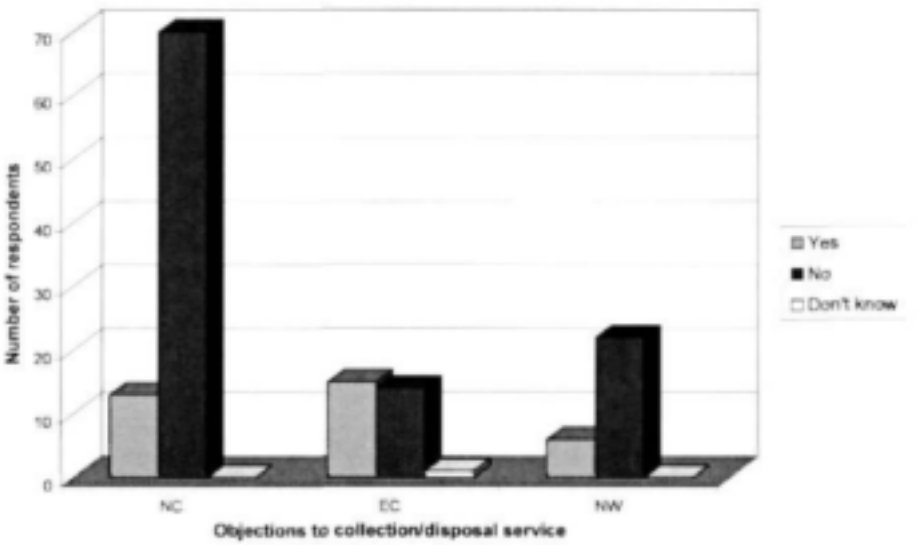


Figure 24: Objections

More than two thirds (75%) of the respondents did not have objections to the establishment of a collection/disposal service, while 25% said they did not want such a service to be established.

Willingness to pay for collection/disposal service

When the respondents were asked whether they were willing to pay for a collection/disposal service in their communities, more than half (58%) said they were willing to pay and 42% said they were not willing to pay for such a service.

The respondents who were willing to pay said they would pay the following amounts per time:

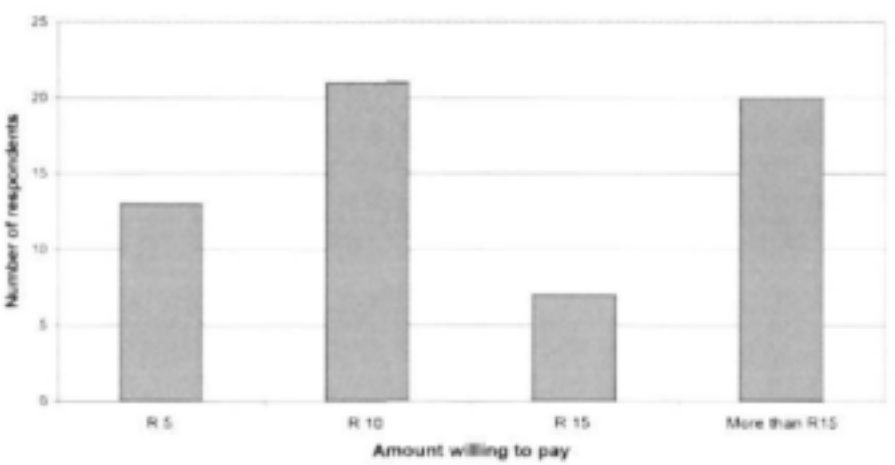


Figure 25: Amount willing to pay for service

A number of respondents were willing to pay more than R15-00 for a collection/disposal system, some even as much as R25-00. A few respondents were also willing to pay R50-00 per month (not per time) to have the excreta removed and disposed of.

Those who were not willing to pay for a collection/disposal service were willing to do it themselves and use the faeces in their gardens.

Management of the collection/disposal service

The respondents were asked who they thought should be the responsible persons/institutions for managing a collection/disposal service in their respective communities. They replied in the following way:

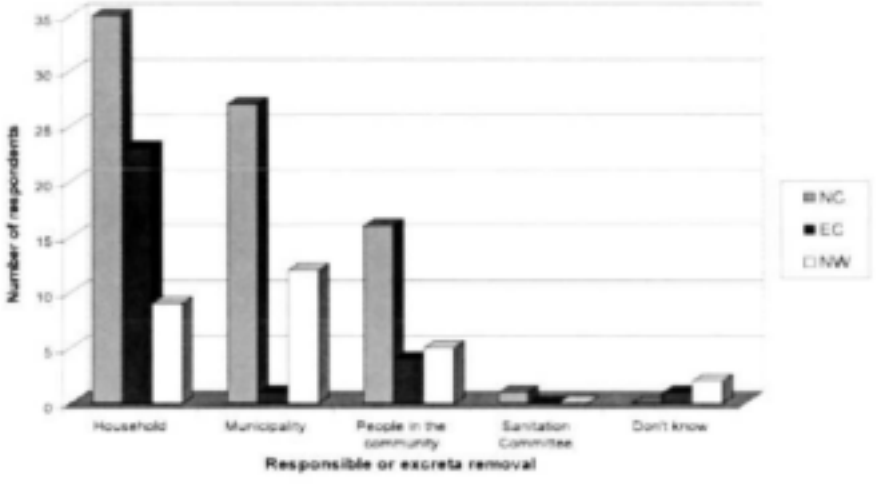


Figure 26: Responsibility for excreta disposal

Almost half the respondents (44%) said that the household was responsible for disposal of the excreta and 18% said people in the community should dispose of it. Only 1% said it was the responsibility of the Sanitation Committee, while 35% said it was the responsibility of the local municipality.

There was still the general perception, especially in some areas of Northern Cape where the bucket system was still in use, that the excreta should be removed by the municipality, as was the case with the bucket system. In the other provinces the users also expected the municipality to remove the excreta as they did when they emptied pit toilets that were full.

2.4.9 Institutional capacity in the community

Sanitation Committee

When the respondents were asked about the existence of a Sanitation Committee in their community, they were not all aware that such an organisation existed.

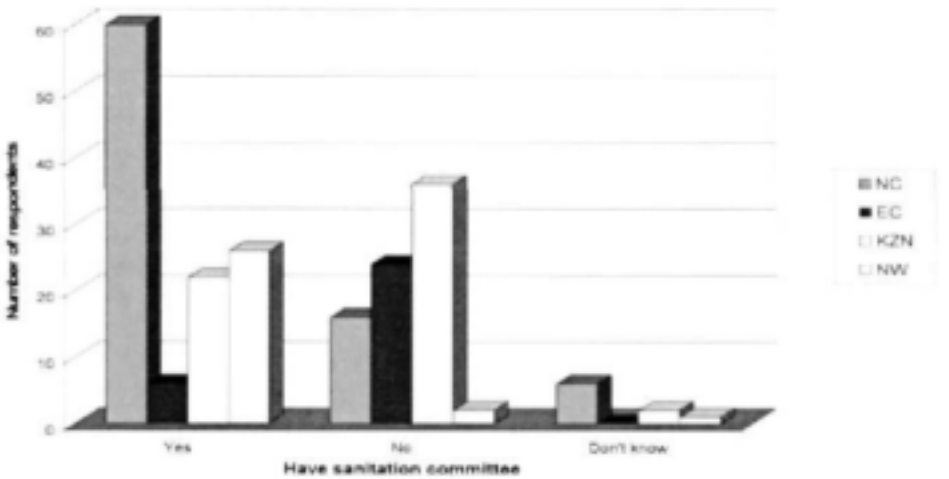


Figure 27: Existing Sanitation Committee

Two thirds (67%) of the respondents were aware that a Sanitation Committee existed in their communities.

The fact that 30% of the respondents did not know that a Sanitation Committee existed in their communities might pose a problem in terms of awareness raising, communication, monitoring and evaluation of sanitation and hygiene matters.

Most of the respondents who knew about the Sanitation Committee also knew the contact person as well as where to contact the person.

Responsibilities of Sanitation Committee

The respondents perceived the following to be the responsibilities of a Sanitation Committee:

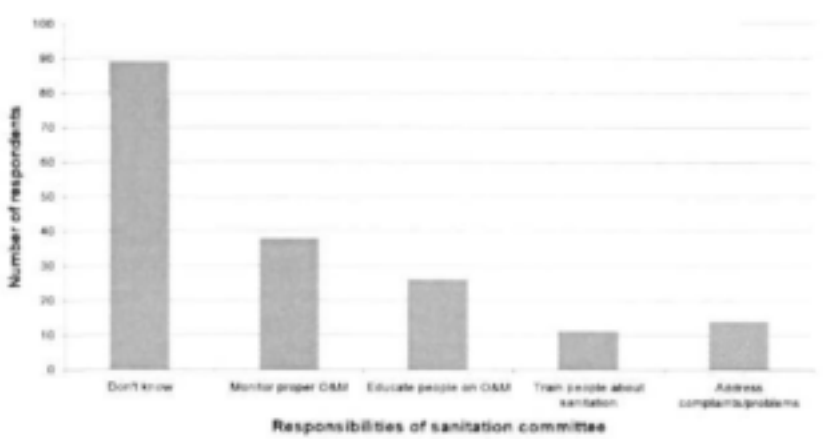


Figure 28: Responsibilities of the Sanitation Committee

Some other responsibilities mentioned were the following:

- Monitor and address complaints relating to the construction of toilets.
- Construction of more toilets.
- Educate/train community on health and hygiene matters.
- Answer questions about toilets.

Sanitation Committee Meetings

Almost half (47%) of the respondents replied that they attended the Sanitation Committee meetings. When asked what was discussed at these meetings, the respondents replied as follows:

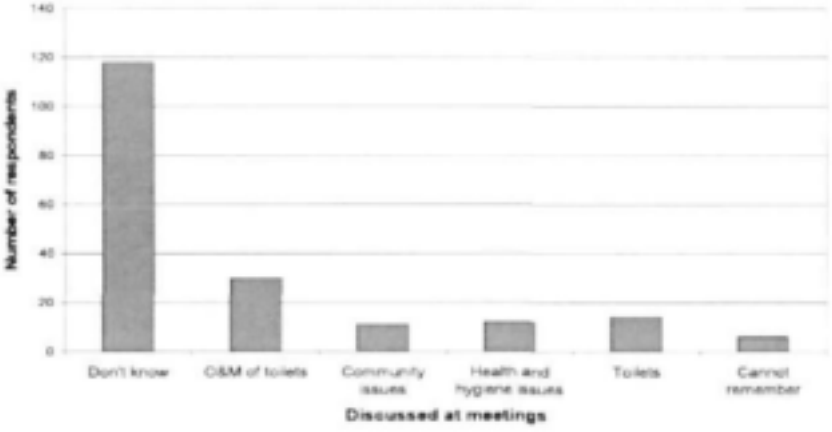


Figure 29: Discussion at committee meetings

Most of the respondents did not know what was discussed at the meetings as they did not attend the meetings or could not remember what was discussed. This indicates a lack of interest in the activities of the Sanitation Committee.

More than half (58%) of the respondents did not know whether men and women attended the meetings. Those who attended said that both men and women attended, but 5% said mostly women attended, and 2% said only women attended the meetings because men were not interested in sanitation affairs.

Environmental Health Officer (EHO)

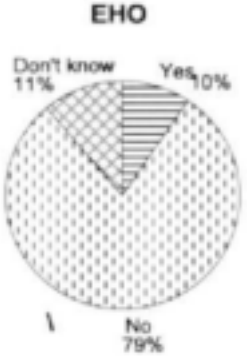


Figure 30: Existing EHO

Only 10% of the respondents replied that they knew about an EHO in their communities, while more than half (79%) said they did not have an EHO in their communities and 11% did not know whether they had one or not. These respondents also did not know any names or where to contact an EHO.

According to the local authorities and implementing agents, all the target communities had access to an EHO within the respective areas.

Community Health Workers

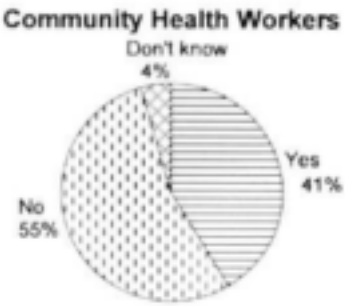


Figure 31: Existing community health workers

More than half of the respondents (55%) were not aware that there were community health workers in their communities.

The respondents who knew about the community health workers also knew their names and that they could be contacted at the community clinic or at their homes

Pictures of UD toilets in the target communities are included in Annexures C - F.

2.5 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations below are drawn from the data, as well as from the impressions and observations of the researchers.

2.5.1 Conclusions

The following general conclusions were drawn from the research (note that the research reports for the different provinces (Annexures C-F) have province-specific conclusions):

- **Approaches and coordination**: Sanitation projects in communities are usually *ad hoc* and short-term. A major weakness with these particular sanitation projects was that they were implemented by a number of loosely coordinated agencies. Not only did this result in duplication of effort and inefficient allocation of scarce resources, but also did not produce any significant improvements in the welfare of toilet users. In addition, communities were confused by different and often conflicting agency policies and methodologies, for example in relation to contributions and financing – one community was required to contribute towards the toilets while the community next door received toilets for free.

- **Communication and advocacy**: The target communities were unaware or ill informed about national sanitation policies and strategies as well as local authority development plans and programmes. It was therefore difficult for these communities to make local authorities accountable to them when they knew so little about their work and plans. There is an urgent need to improve communication channels.

There was also a lack of knowledge regarding the existence of community structures, such as the Sanitation Committee, the availability of an EHO and community health workers. No other institutional structures, such as church groups and women's groups, were used to advocate the UD toilet concept.

- **Roles and responsibilities**: There was a tendency for communities to assume that the provision of sanitation services was the responsibility of local authorities. During the research this tendency was identified in the target communities, where most of the respondents indicated that the disposal of the excreta should be the responsibility of the local municipality and not the household. Roles and responsibilities of municipalities and the communities themselves regarding sanitation were not clearly identified.

- **Capacity and skills development**: The research showed that skills development in the communities was successful as most of the UD toilets were built by community members. However, in KwaZulu-Natal the respondents said the most of the UD toilets were built by contractors, not community members themselves. The contractors were from the area but skills transfer to the community members did not occur.

  The Sanitation Committees that existed during the implementation of the sanitation projects disbanded once the projects were completed. The committee members did not continue to fulfil their roles in the communities, which could indicate that the skills transfer was not successful, or that these committee members were not willing to volunteer their services or skills for free, or that these members left the community to find work elsewhere, using the skills they learnt during the implementation of the sanitation project.

- **Training**: Training in the operation and maintenance of UD toilets was successful in most of the target communities. The users said that they would not have been capable of using the UD toilet correctly without the training. However, the health and hygiene training was inadequate, as only a few respondents mentioned health and hygiene aspects as part of the training they received.

- **UD sanitation**: The research showed that the UD toilets were popular amongst most users, but as a toilet only (having some sort of toilet is better than having no toilet at all). The main reasons were that there was no smell and that the UD toilet was better than what they used to have or not having a toilet at all. Some also said that the dry faeces could be used as compost. Those who did not like the UD toilets, preferred flush toilets because they did not want to handle human excreta. The UD toilet was accepted as a toilet but not as a technology, i.e. the respondents would use the UD toilet as a toilet but were reluctant to use the products (excreta) from the toilet.

- **Operation and maintenance**: In most cases the UD toilets were operated and maintained correctly according to the training provided (the toilets were clean, the pedestals clean and positioned correctly, the urine pipes were not blocked, the vaults and contents were dry, etc). Some problems occurred regarding blockages of the urine pipes, but this was in the process of being resolved. The respondents indicated that operation and maintenance of the UD toilets were easy, excluding the removal of excreta. Those who had had to empty the vault all said that operation and maintenance of the UD toilets were difficult because they did not want to handle excreta. A few respondents said that the UD toilet

required a lot of effort to operate and maintain and that it was not as easy as a pit toilet or a flush toilet.

- **Health and hygiene**: Most local authorities accept the importance of health and hygiene promotion, but such programme components have still not been given the emphasis, careful design (including objectives, indicators and monitoring and evaluation procedures) and budget that are required to be effective. The approaches applied have generally not been effective in changing behaviour. Health and hygiene messages were not linked closely to local cultural beliefs and practices of the communities. The general norm of not handling faeces presented a huge barrier for the use of products from the UD toilets.

- **Disposal/collection system**: The need for a disposal/collection system was very community-specific. Some community members did not want such a service or to pay for such a service. Those who were willing to pay for disposal/collection of the faeces also thought it was the responsibility of the municipality to perform this task. The general perception of the municipality being responsible for removal of the excreta originated from the roles the municipalities performed regarding the old bucket system and the emptying of old pit toilets. Advocacy and training regarding the UD toilets were insufficient to change the perceptions of the users regarding ownership of on-site sanitation.

- **Use of excreta**: Most respondents were aware of the fertiliser value of faeces but not of urine. In most cases, the urine was piped to a soakaway. Only some of the respondents were willing to use the faeces in their gardens (mainly in Northern Cape). Most respondents indicated that it was a bad practice to handle faeces and that they would not eat food that had been grown in faeces. None of the areas visited used urine for agricultural purposes as there was a general perception that urine was harmful to agricultural produce (burning).

2.5.2 Recommendations

The recommendations are provided to assist agencies to implement UD sanitation projects in general.

Commitment to sanitation on provincial/regional/local levels

There is a lack of commitment to sanitation on provincial, regional and local levels due to the fact that there are too many other pressing problems to address, as well as the lack of capacity and skills.

Sanitation needs to become a focus point and needs to be mainstreamed in the business plans and activities of provincial government departments, regional authorities and local authorities/implementing agents.

Communities and community members themselves should also become focused on sanitation (infrastructure and hygiene aspects).

Communication and advocacy on UD sanitation

Careful planning is essential for effective communication and advocacy regarding UD sanitation. Because it is a relatively new technology in South Africa, it is essential that the correct information on operation and maintenance of the systems is transferred.

Local authorities should thoroughly engage the users in a consultation process prior to implementing UD sanitation technology or projects to ensure a better understanding of the technology as well as to afford the communities an opportunity to air their views.

Local authorities should also use key/influential people or structures/institutions in the communities to disseminate the information to the users. This will enhance the sense of ownership and commitment from the side of the communities.

Formal and informal flow of information should be encouraged through networks connecting NGOs, CBOs and other social groups such as women's clubs. Informal groups are more effective in spreading information about UD sanitation projects and hygiene messages.

Needs, options and choices

Local authorities in general make investment plans with little or no understanding of the needs or interests of the communities they serve. As a result, services do not meet the needs of the communities. Local authorities should conduct surveys to fully understand the needs, priorities, practices and socio-economic characteristics of the urban poor and design projects accordingly. They should then conduct research on suitable technologies for particular areas rather than providing what officials deem to be suitable technologies. They should also explore various alternatives and liaise with institutions or service providers that are experts in sanitation technologies.

Sanitation technologies and services should meet the needs and interests of the community and should be designed so that they complement existing practices. Sanitation technologies should be selected to suit the physical characteristics and culture of the communities, and to meet the various needs of the different social groups (such as the disabled, the aged and children).

Suitable sanitation technologies should then be introduced to the communities for them to be able to make informed decisions on what option they want. Sanitation provision should be demand driven instead of supply driven, respecting the right of choice of the users. The implementation of UD sanitation to date has been supply driven, excluding the users from participating in the decision making processes. Therefore it is no surprise that communities are rejecting a good sanitation technology due to their lack of understanding of the technology and their lack of participation in decision making regarding sanitation provision.

Approaches and coordination

Approaches adopted by sanitation agencies/local authorities should be acceptable to the culture and traditions of the communities. Demand responsive approaches (DRA) and participatory approaches (including the use of PRA and PLA methods), in particular the use of approaches such as Participatory Hygiene and Sanitation Transformation (PHAST), improve the sustainability of UD sanitation projects. However, as part of these processes, it is necessary to make sure that efficient communication channels are in place, through which different social groups within the communities can convey their needs.

Local authorities should have sanitation policies that clearly state the overall goal of sanitation projects and programmes in communities (especially in terms of UD sanitation), so that all agencies work towards achieving one goal by implementing

strategies that are not in conflict. Improved coordination should produce clarity, more effective collaboration and sharing of lessons learned.

The implementation process of a UD sanitation project is a joint venture amongst officials, politicians, service providers and the community. The success of any project relies on the strong cooperation of the role players mentioned above. It should be acknowledged that the community, as the beneficiary, is a key factor throughout the process, and it is 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 project implementation should be tailor-made to suit the particular community, hence the importance of consulting with the community. If the whole process is implemented properly, the community will use, operate and maintain the UD sanitation system effectively, as they chose it (association with the sanitation system and the sense of ownership is strong).

Roles and responsibilities

The existence of a sanitation strategy is pivotal to the success of UD sanitation programmes and projects. The strategy should clearly specify the roles and responsibilities of all agencies (including the communities themselves), identify appropriate strategies, and outline the resources needed and sources of those resources.

In order to achieve sustainable and cost-effective improvements in sanitation conditions there is a need to improve the links between sanitation agencies/local authorities and communities. It is necessary for both local authorities and communities to clarify their roles and responsibilities, specifically regarding UD sanitation.

As long as communities are not clear about the roles and responsibilities of sanitation agencies and about their own rights, problems of poor quality services, corruption, misrepresentation and unaccountability will ensue. Civic education should also clarify the role of the communities themselves in improving sanitation services, so that they can play their very important part.

Training in operation and maintenance

The difference in operation and maintenance between a pit toilet, bucket toilet and UD toilet is significant. Proper training in the O&M of UD toilets for all stakeholders is crucial, especially the users. No training or insufficient training will impede the progress and sustainability of an excellent technology.

The local authority should train people or structures in the communities on O&M of UD sanitation and use these people/structures to impart the knowledge to the entire community. These people/structures could also be responsible for monitoring the use of UD toilets and conduct follow-up training where necessary. An incentive (such as an allowance) should be made available to these people/structures, recognising their effort, motivating proper use of UD toilets and creating employment opportunities.

Communities should be enabled to select sanitation technologies that they can manage. Training should be provided to community members concerning the hygienic use, maintenance and operation of those technologies, and backup services should be made available. In provinces where training was adequate, the community structures (Sanitation Committees) that were trained on the operation and

maintenance of UD sanitation systems should conduct an after care service (monitoring the use of the toilets and gathering and/or addressing the problems identified). The sanitation committee should work closely with other established structures, such as community health workers from the clinic, to ensure that the reinforcement of training covers the broader community.

Health and hygiene

Sanitation is not only about a toilet, it is about general health and hygiene. The effectiveness and sustainability of sanitation programmes depends on a healthy balance between the engineering components (the hardware) and the socio-economic and institutional issues (the software).

Participatory hygiene activities, in which communities identify their own sanitation problems and their causes, and plan to solve them, are more effective in bringing about real behaviour change than externally dominated programmes. Programmes should be continuous and systematic, including refresher training in the use of UD sanitation for people recruited from the communities themselves. Programmes should have strong links with the necessary infrastructure improvements – more hand-washing cannot take place without access to water and safe excreta disposal cannot occur without appropriate facilities.

Promotion processes should be systematic and continuous, rather than sporadic, and education sessions should be carried out at times and in locations that are convenient to the different groups of the communities. Messages and methods of communication should be appropriate to the conditions faced by the communities. Health and hygiene education is more effective if learnt at an early stage. School children can also take health and hygiene education messages home to their parents and siblings.

Capacity and skills building

Proper sanitation should be treated not just as a health issue but as a first step towards poverty alleviation and as an essential precondition for economic and social development. Sanitation projects are more attractive to communities if they create employment or training opportunities for local people. Therefore, local authorities should employ a holistic approach to UD sanitation development, as opposed to a limited project approach. UD sanitation projects should be linked with improvements in health, education and income-generation and to income generating activities in the communities.

Community partnering, in which communities contribute towards investment in UD sanitation, can help to make projects successful and sustainable. When households share the cost of building their own UD toilets, overall building costs drop, usage rises and facilities are better maintained; but it is also important, by use of credit or subsidies, to make sure that the poor can participate.

Construction of the UD toilet

Building standards for UD toilets in communities should be flexible and appropriate. Communities have often done a lot of work in terms of constructing their own houses, toilets and waste disposal facilities; government departments and local authorities should build upon this initiative by introducing flexible standards (as far as possible where it does not impede the proper operation of the UD system) and advise or train community members so that they can construct safe and effective structures.

Construction companies should also adhere to the standards that are applicable for the design of a UD toilet. Poor construction, in order to save money, only deters users from optimal utilisation of the UD toilets.

Cost recovery for a collection/disposal service

Financing sanitation services and cost recovery are among the key issues that affect project sustainability. Whereas sanitation agencies are worried about cost and cost recovery, the communities face all sorts of problems associated with poverty. Willingness-to-pay (WTP) surveys and full cost accounting should be used to set tariffs that are affordable to the communities and cover at least the costs of operation and maintenance (disposal of excreta) of the sanitation service.

Communities are prepared to pay for services as long as the charge is related to the quality of the services they receive and use. Unfortunately, rates are often increased on a yearly basis even when there is no improvement in services or when services are actually deteriorating. Payments inevitably suffer in such circumstances.

Use of excreta

A feature of UD sanitation technology is the availability of excreta from the toilet for use as soil conditioner or fertiliser. However, the cultural perceptions and beliefs of the users represent a major stumbling block to accomplishing this purpose. It is generally considered unacceptable for people to handle human faeces, especially concerning food production. Food and human faeces are not even supposed to be mentioned in the same breath.

Urine is also perceived as harmful to plants, even though babies' urine is used for medicinal purposes, for example treating eye infections.

The general knowledge of the average person in the communities regarding the fertiliser value of urine and faeces is very poor. People who used the UD toilets were informed about the fertiliser value of urine and faeces, but were still unwilling to use it.

Monitoring and evaluation

Monitoring and evaluation are key elements for the sustainability of any technology. In order for UD technology to be successful, the government (local council) should offer post-project services in various ways, such as assistance in identifying entrepreneurs for the establishment of disposal/collection enterprises to serve people that are not willing to empty the vaults, but who are prepared to pay. Monitoring mechanisms should be in place to ensure that the project was well implemented and to establish, with the users, any problems they encountered regarding the system. The health and/or environmental departments/sections of the local council should support the efforts of the community institutional capacity (volunteers) by providing incentives/allowances, since the majority of these people are unemployed. This will ensure the sustainability of the system. Most of the community structures (e.g. Sanitation Committees) are dismantled after implementation of the project.

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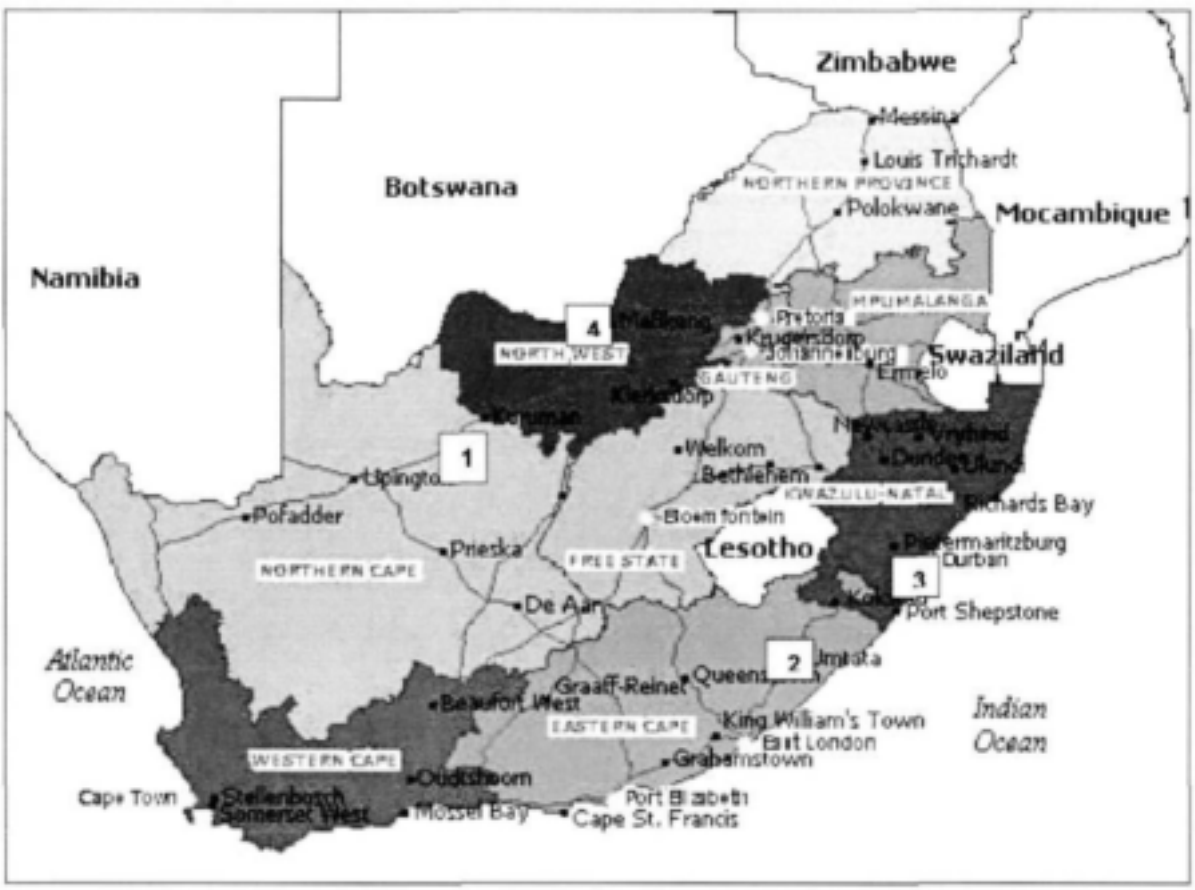
ANNEXURE A:
AREAS OF INVESTIGATION



AREA	TOWN
1. Northern Cape Province	Campbell
	Boegoeberg (Groblershoop)
	Augrabies
	Merriman
	Hanover
2. Eastern Cape Province	Sinyondweni
	Gwebinkundla
	Manyosini
3. KwaZulu-Natal	Umnini
	Hlanzeni
4. North West Province	Matolong
	Tlapeng
	Motsweding
	Lower Majeakgoro
	Sekhing
	Kokomeng
	Khudutlou

ANNEXURE B

INTERVIEW SCHEDULE

INTERVIEW SCHEDULE FOR HOUSEHOLD/INDIVIDUAL

Date:_____ Name of interviewer:_____

Person(s) interviewed:_____

M		F	

Position in household:_____

1. HOUSEHOLD INFORMATION

1.1 Name of community																			
1.2 Number of people in household by age / gender																			
0-3yrs.				**4-12 yrs.**				**13-21 yrs.**				**22-55 yrs.**				**56yrs.+**			
M		**F**		**M**		**F**		**M**		**F**		**M**		**F**		**M**		**F**	

2. SANITATION

Please take note not to provide the options to the interviewees, only mark off what they mention.

2.1 What types of toilets are in the yard/on the property?
* Pit toilet * VIP toilet * Bucket * UDS * Other.....

2.2 What type of urine diversion toilet is in the yard/on the property?
* Single vault * Double vault

2.3 Where is the UD toilet situated?
* Part of the house * Separate from the house

2.4 Who built the toilet? .....

.....

.....

2.5 Who provided the funding for the toilet? .....

.....

.....

2.6 Did the household contribute towards the toilet? * Yes * No

2.7 If yes, in what way?
* Sweat equity/labour * Paid in money * Provided material

2.8 How long have they been using the toilet?
* 1 – 6 months * 7 – 12 months * Longer than a year

2.9 Which UD toilet, in their opinion, is better?
* Double vault * Single vault * No preference

2.10 Why, in their opinion, is the one better than the other? .....

.....

.....

2.11 If toilet is separate from the house, now that they have used it for some time, would they rather prefer it to be part of the house? * Yes * No

2.12 Do they like the toilet? * Yes * No

2.13 If yes, what do they like about the toilet? .....

.....

.....

.....

2.14 If no, what do they not like about the toilet? .....

.....

.....

.....

2.15 Do they prefer the toilet above other toilets (apart from flush toilets)? * Yes * No

2.16 If yes, why? .....

.....

.....

.....

2.17 If no, why not? .....

.....

.....

.....

2.18 Will they recommend the toilet to other people? * Yes * No

2.19 If yes, why? .....

.....

.....

2.20 If no, why not? .....

.....

.....

.....

3. OPERATION OF THE URINE DIVERSION TOILET

Please take note not to provide the options to the interviewees, only mark off what they mention.

3.1 Did the household receive any training in the operation and maintenance of the toilet? * Yes * No

3.2 If yes, who provided the training? .....

.....

.....

3.3 What did the training consist of? .....

.....

.....

.....

3.4 Was the training useful to the household? * Yes * No

3.5 If not, why not? .....

.....

.....

.....

3.6 How many household members use this toilet? .....

3.7 Do men and women use the same toilet? * Yes * No

3.8 If not, why not?.....

.....

.....

.....

3.9 Do children under the age of 10 use the toilet? * Yes * No

3.10 If not, why not?.....

.....

.....

.....

3.11 Where is the used anal cleansing material (toilet paper) deposited?
* In the vault * In a separate container inside the toilet cubicle

3.12 If stored in a separate container, where is it disposed of later?
* Burn it * Throw it in a rubbish pit * Bury it in the garden/veld

3.13 How often do they dispose of the cleansing material?
* Once a week * Once in 2 weeks * Once a month

3.14 What do they use to cover the faeces in the vault?
* Ash * Sand/soil * Other.....

3.15 Is the toilet easy to operate and maintain (including excreta removal)? * Yes * No

3.16 If no, what are the problems? .....

.....

.....

.....

3.17 Describe the physical condition of the toilet. .....

.....

.....

.....

.....

1.4 RE-USE

Please take note not to provide the options to the interviewees, only mark off what they mention.

4.1 Where does the household dispose of the urine?
* Soak pit * Pipe to trees/plants * To collection container (for later use)

4.2 Does the household have objections to emptying the vault and disposing of the contents themselves? * Yes * No

4.3 If yes, what are the objections? .....

.....

4.4 Was it necessary to empty the vault since they started using the toilet? * Yes * No

4.5 What does/will the household do when the vault is full?
* Bury it * Burn it * Throw it in a rubbish pit * Throw it away in the veld *
Use it in the garden * Don't know what to do

4.6 Are they aware of the fertiliser value of faeces and urine? * Yes * No

4.7 If yes, do/will they use the faces and/or urine in their gardens? * Yes * No

4.8 If no, why not? .....

.....

.....

.....

4.9 Does the household have any objections to the establishment of a collection/disposal service?
* Yes * No

4.10 Is the household prepared to pay for such a service? * Yes * No

4.11 If yes, how much are they willing to pay?
* R 5-00 * R 10-00 * R 15-00 * More than R 15-00

4.12 Who, in the their opinion, should manage the collection/disposal service?
* People in the community * The household * The Municipality
* Independent contractor * Other.....

4. COMMUNITY INSTITUTIONAL CAPACITY

Please take note not to provide the options to the interviewees, only mark off what they mention.

5.1 Is there a sanitation committee in the village? * Yes * No

5.2 Who is the contact person for this committee? .....

5.3 Where can the person be contacted? .....

.....

5.4 What does the household think are the responsibilities of this committee? .....

.....

.....

.....

5.5 Do members of the household attend the meetings? * Yes * No

5.6 If yes, what do they discuss at the meetings? .....

.....

.....

.....

.....

5.7 Do men and women attend the meetings or discussions?: * Yes * No

5.8 Is there an Environmental Health Officer in the community? * Yes * No

5.9 Name: .....

5.10 Where can he/she be contacted: .....

5.11 Is there a Community Health Worker in the community? * Yes * No

5.12 Name: .....

5.13 Where can he/she be contacted: .....

Thank the respondents sincerely for his/her/their contribution and cooperation.

ANNEXURE C

RESEARCH FINDINGS ON OWNERSHIP AND USE OF URINE-DIVERSION SANITATION SYSTEMS

Northern Cape Province

CONTENTS

List of figures

1. RESEARCH FINDINGS

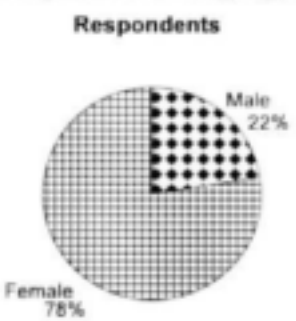
The results from the interviews and completed questionnaires are presented below.

A total of 87 interview schedules were completed in the Northern Cape Province (a sample of 10% of the total number of UD toilets in the target communities), covering 87 interviewees and 436 household members.

The responses originated from the following areas:

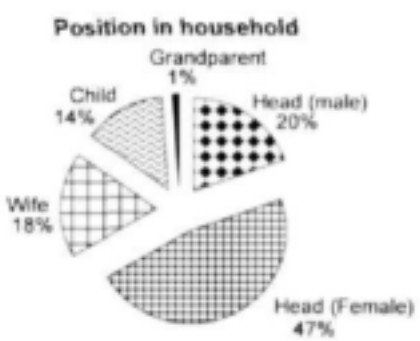
AREA	TOWN	INTERVIEW SCHEDULES COMPLETED	NUMBER OF INTERVIEWEES
Northern Cape	Campbell	15	15
	Boegoeberg (Groblershoop)	15	15
	Augrabies	15	18
	Merriman	16	17
	Hanover	21	22

Figure 1(a): Composition of target group



The gender distribution of the respondents was 21% (18) male and 79% (69) female. This is due to the fact that the female household members were more readily available during the day (being at home, and not having a day job) while the male household members were away at work.

Figure 1(b): Position in the household

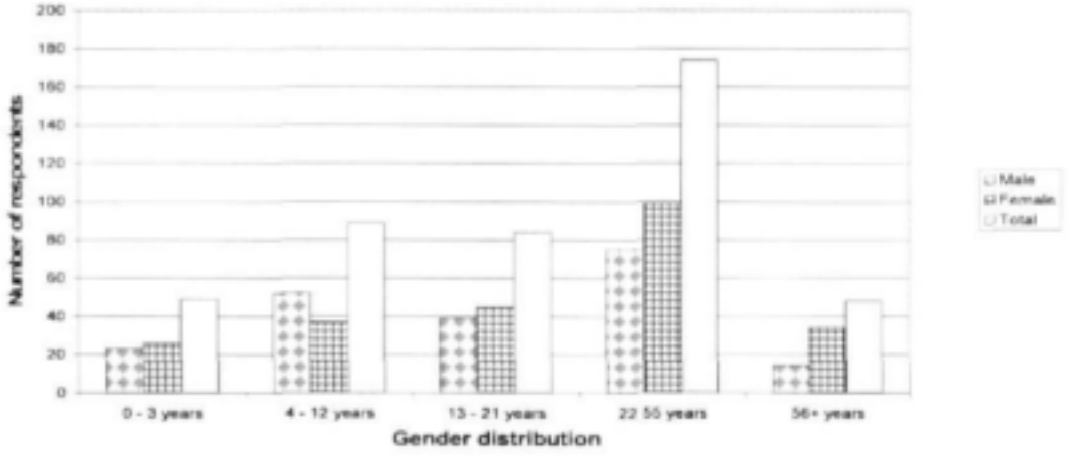


Almost half (47%) of the households were female-headed.

1.1 HOUSEHOLD INFORMATION

The gender distribution of all the household members of the households that were interviewed was as follows:

Figure 2: Gender of household members

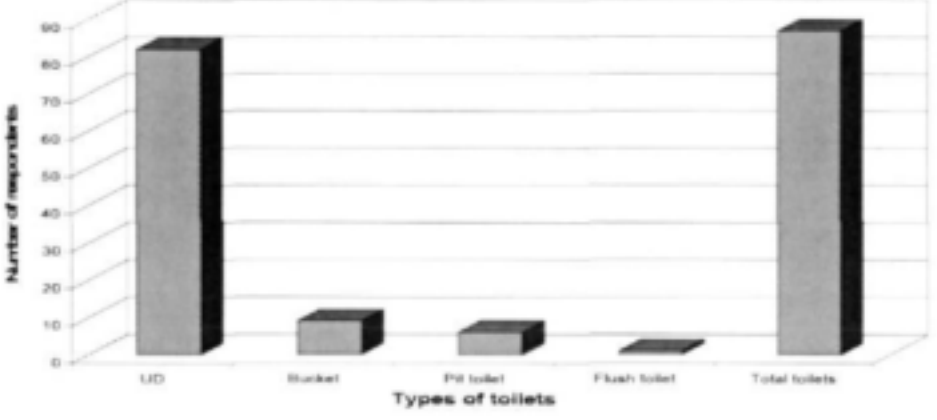


1.2 SANITATION

1.2.1 Types of toilets

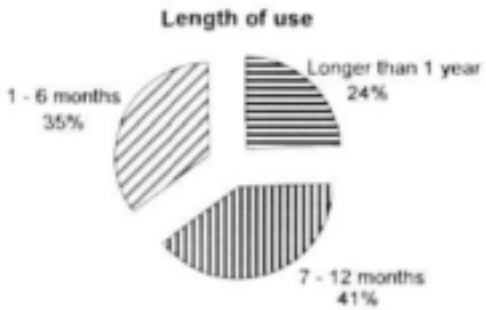
The UD toilet was not the only toilet found in the yards of the respondents. The following types of toilets were also found:

Figure 3: Type of toilet



The majority (94%) of the respondents used a UD toilet, but some of them also still used a bucket system or still had a pit toilet in the yard, together with the UD toilet. One (1) respondent had a flush toilet, but also used the UD toilet.

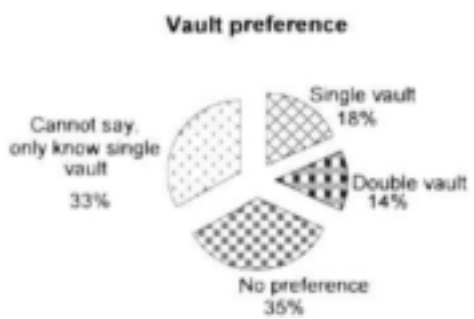
Figure 4: Length of use of the UD toilet



The data showed that almost half (41%) of the UD toilets were used for seven to twelve months, 24% for longer than one year and 35% for shorter than six months.

This means that the perceptions of the respondents regarding the removal of excreta could not be determined fully because 76% of the respondents had used the UD toilet for less than a year and the vaults had not filled up yet.

Figure 5: Preference of vault



More than a third (35%) of the respondents had no preference regarding vaults and a third (33%) said that they only knew a single vault. This was mainly due to the fact that most of the UD toilets were built with single vaults and the respondents did not know about, or had never used, double vaults.

Those who had a double vault said that they preferred the double vault for the following reasons:

- The vaults can be alternated.
- The double vault is the only toilet known to them.

Those who had a single vault said that the preferred the single vault for the following reasons:

- Single vaults are less work than double vaults.
- Single vault is easy to clean for one person.
- Single vault is convenient to use.

1.2.2 Toilet providers

A question was posed to the respondents regarding the origins of funding for the UD toilets in their communities.

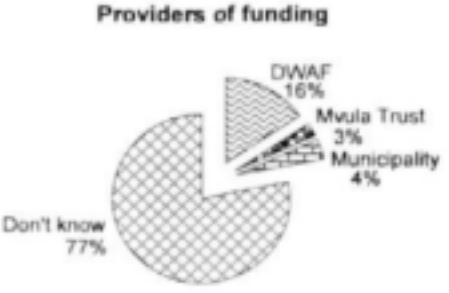


Figure 6: Funding of UD toilet

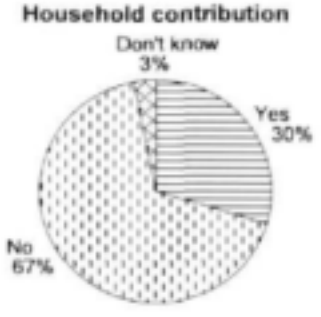
Only 21% of the respondents replied that they knew where the funding for the UD toilets came from, and only 13% knew the correct source (DWAF). More than two thirds (77%) of the respondents replied that they did not know where the funding for the UD toilet came from.

This indicates a lack of communication by the project implementers regarding the strategies and programmes of national and local government.

1.2.3 Household contribution towards UD toilet

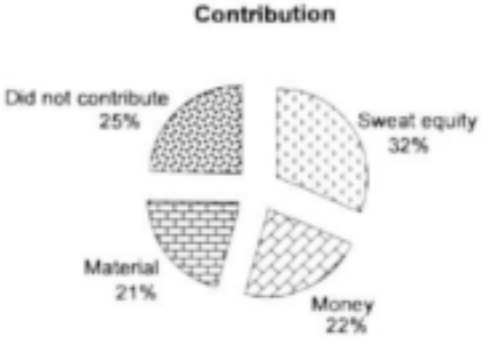
When asked whether the households contributed towards the construction and/or funding of the UD toilet, more than two thirds of the respondents (67%) said that they did not contribute towards the construction of the UD toilet, while 30% said they did contribute. Two respondents did not know whether their households contributed or not.

Figure 7: Household contribution



Those respondents who said that they contributed towards the construction and funding of the UD toilet, contributed by providing material, sweat equity and paying a fee.

Figure 8: Contribution towards construction

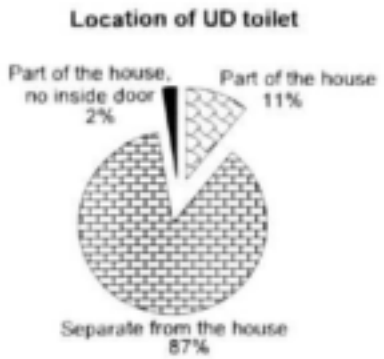


The material the respondents contributed consisted of corrugated iron for the roof (mainly from the superstructure of their old pit toilets) and bags of cement. The sweat equity consisted of digging the pits for the vaults, or assisting the builders. The monetary contribution consisted mainly of the R5-00 registration fee that was paid by the households in Augrabies village.

1.2.4 Household preference

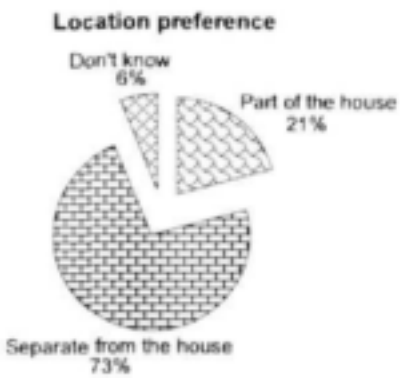
The respondents were asked whether they wanted the UD toilet to be part of their houses (with an inside door to the house) now that they had been using it for a while.

Figure 9: Location of UD toilet



The majority of the UD toilets (87%) were situated separately from the house. Only 11% of the UD toilets were constructed as part of the house with an inside door. Two UD toilets were constructed as part of the house but with an outside door, no door leading into the house.

Figure 10: Preference of location for UD toilet



The majority (73%) of the respondents preferred the UD toilet to be separate from the house. The main reason for this reply was that they were used to the toilet being separate from the house. Some respondents said the toilet might create a bad smell if it is part of the house.

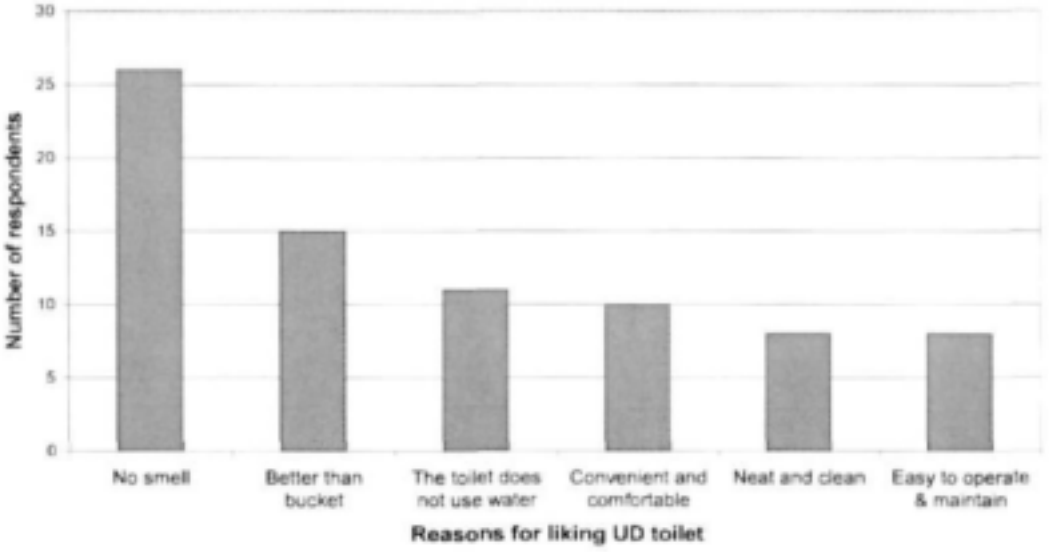
1.2.5 Perceptions of UD toilet

Figure 11: Like/dislike UD toilet

When asked whether the respondents liked the UD toilet or not, the majority (79%) said they liked it.

The 79% who said they liked the UD toilet, provided the following reasons:

Figure 12: Reasons for liking the UD toilet

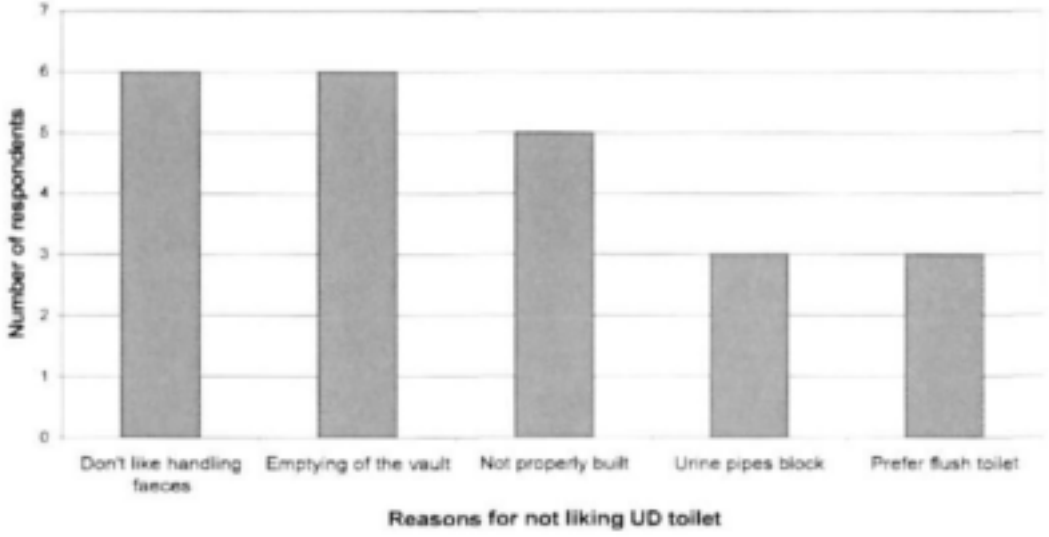


Other reasons provided were the following:

- It looks good.
- It is better than going to the bush, especially when it rains.
- It works well.
- Dry faeces can be used as compost.
- Excreta can be taken away and burned.
- It is better than a VIP/pit toilet.
- One has no problems with the toilet.

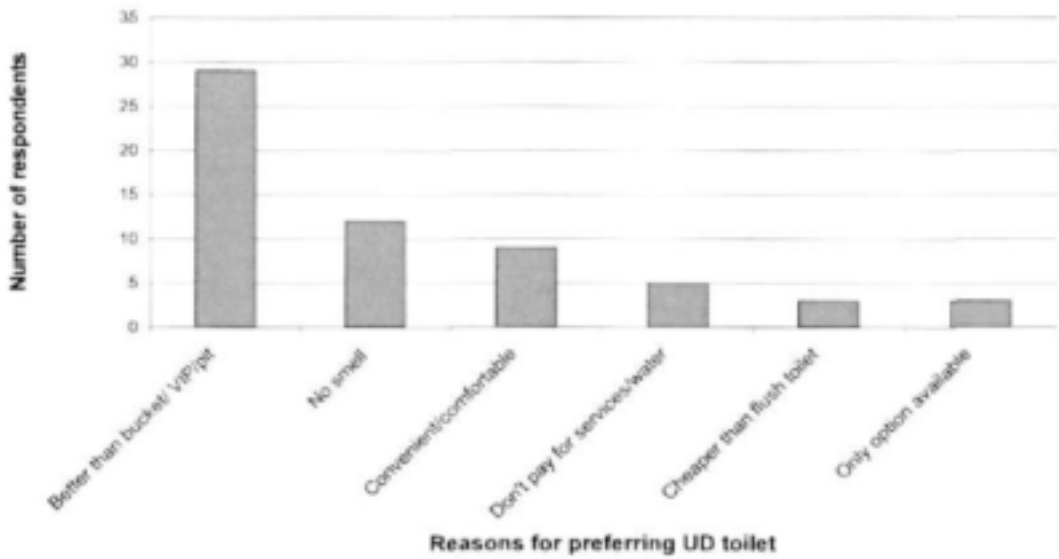
The 21% of the respondents who said they did not like the UD toilet provided the following reasons:

Figure 13: Reasons for not liking the UD toilet



The majority (75%) of the respondents said that they preferred a UD toilet to other types for the following reasons:

Figure 14: Reasons for preferring the UD toilet

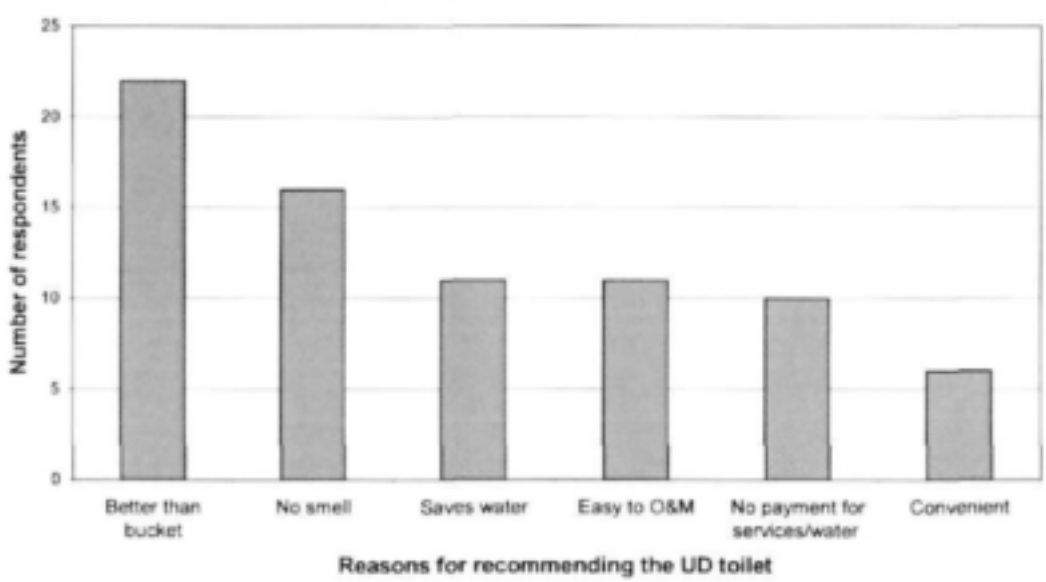


The reasons provided for not preferring a UD toilet to other types were the following:

- They only know the UD toilet, they do not know other toilets.
- The emptying of the vault is problematic.
- There are too many things that should not be done in the UD toilet.

The majority of the respondents (77%) also said that they would recommend the UD toilet to others for the following reasons:

Figure 15: Reasons for recommending the UD toilet



Other reasons provided were the following:

- Faeces and urine can be separated, faeces dry up easily.
- There are no cockroaches, it is neat and clean.
- It looks good. It is a good toilet.
- It is safe to use.
- There are no problems with the toilet when used correctly.
- It is better than any other toilets.
- It is for free.

The reasons for not recommending the UD toilet to others are the following:

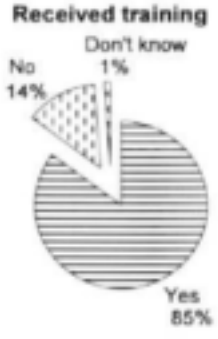
- People should be allowed to make their own choices regarding toilets.
- The emptying of the vault, they don't like handling faeces.
- They don't really think it is something that can work.

1.3 TRAINING IN THE USE OF UD TOILETS

1.3.1 Training received

The respondents were asked whether they received training in the operation and maintenance of the UD toilet, who provided the training and did they find the training useful.

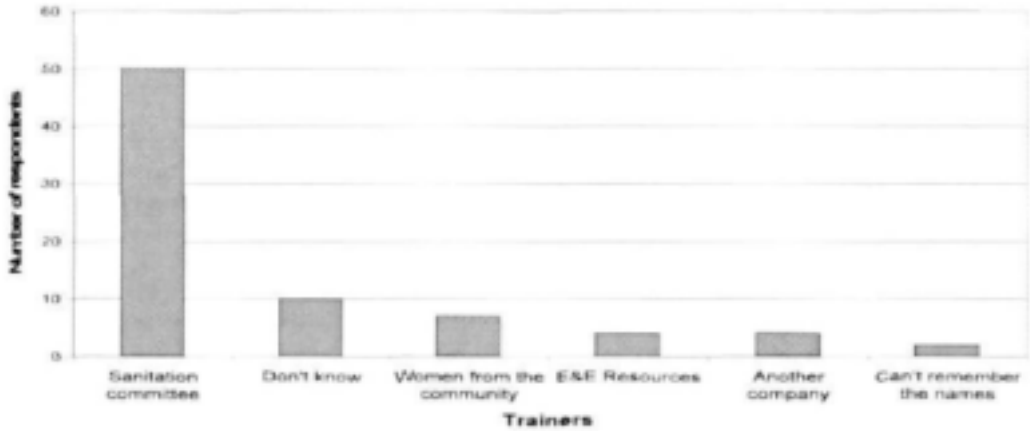
Figure 16: Received training



The majority (85%) of the respondents received training in the operation and maintenance of the UD toilets. Those who did not receive training were scheduled for training. They were given a poster in the meantime that depicted the operation and main-tenance of the UD toilet.

The respondents said the training was conducted by the following:

Figure 17: Trainers of O&M



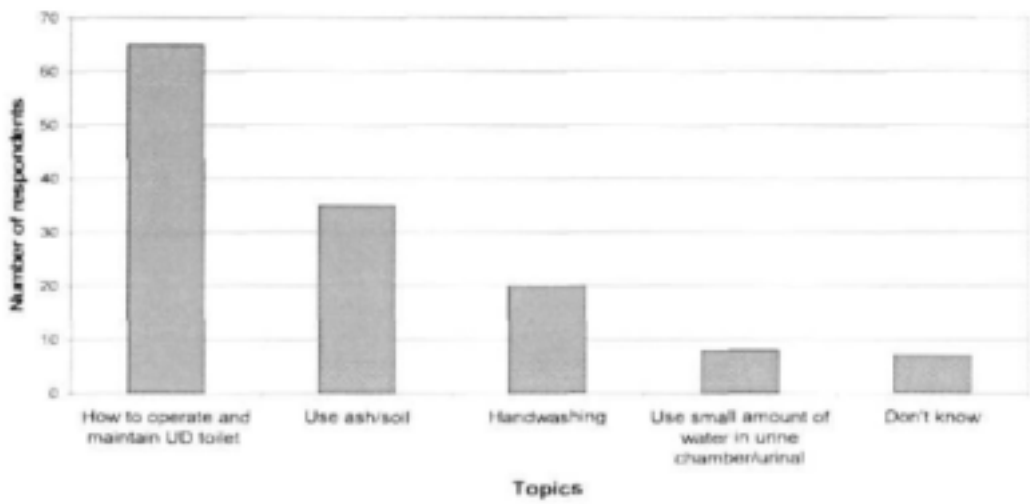
The majority (86%) of the respondents replied that the training they received was useful to the household. The respondents (10%) who did not receive training were scheduled for training and were given a poster/ pamphlet depicting the operation and maintenance of the UD toilet in the meantime. Two respondents said the training was not useful for the following reasons:

- We don't like the UD toilet; therefore, the training was not useful.
- She does not do what she was told because she hates working with faeces.

1.3.2 Understanding of the training

When the respondents were asked what the training consisted of, in order to determine the depth of the training, they said it consisted of the following:

Figure 18: Contents of training provided in the target communities



Some respondents said the training also included the following:

- Use vegetable peels to cover the faeces.
- Health and hygiene aspects.
- No moisture/water in the vault.
- Use dry faeces as fertiliser/compost in the garden.
- Spread of diseases if hands are not washed.

Their responses indicate that the training was sufficient, but there is still room for improvement. The focus on operation and maintenance was good; however, the lack of focus on the use of excreta needs attention.

1.4 OPERATION OF THE UD TOILETS

1.4.1 Household use of UD toilets

The data showed that almost everybody in the household, except small children, used the UD toilet. Both women and men use the same toilet, except in a few instances where only women used the toilet, men still preferred to go to the bush to urinate.

Children under the age of 10 did not use the UD toilet for the following reasons:

- They are too small and too young.
- They are afraid they might fall into the pit.
- They defecate in the urine chamber.
- They might not use the toilet properly.

1.4.2 Cleansing material

The respondents were asked where they disposed of the anal cleansing material after they used the UD toilet.

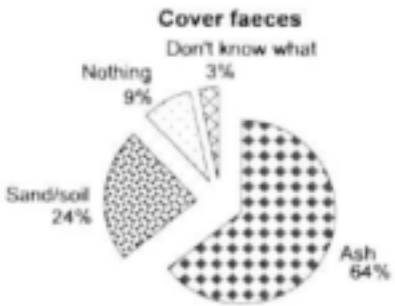
The majority (92%) of the respondents said that they deposited the cleansing material in the vault. The seven (7) respondents, who kept the cleansing material in a separate container in the toilet cubicle, disposed of it by burning it (6) or burying it in the garden/veld (1).

The cleansing material was mostly disposed of once a week or once in two weeks.

1.4.3 Operation and maintenance of the UD toilets

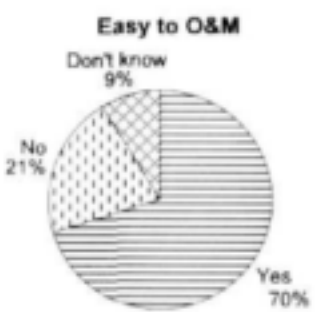
The respondents were asked what they used to cover the faeces after using the UD toilet. They replied as follows:

Figure 19: Covering of faeces



The majority of the respondents used ash or sand to cover the faeces in the vault. Some did not use anything to cover the faeces, indicating a lack of training.

Figure 20: O&M of UD toilet



The majority of the respondents (70%) said that the UD toilet was easy to operate and maintain (including excreta removal).

The only problems mentioned were the following:

- They do not want to work with excreta.
- The urine pipes block.
- The vaults are too deep and difficult to clean.
- The construction of the UD toilet inside existing houses necessitates that the excreta have to be pushed down the pedestal to the vault.
- It is difficult for a woman alone to clean the vault.
- The construction was not properly executed.

1.5 USE OF EXCRETA

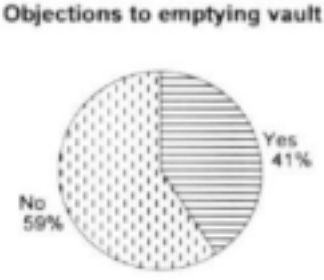
1.5.1 Disposal of urine

The majority of the households (94%) disposed of the urine in a soak pit. Only four (4) respondents disposed of the urine to trees and plants. One (1) respondent collected the urine in a container and threw it away in the veld when the container was full.

1.5.2 Emptying of the vault

When the respondents were asked whether they had objections to emptying the vault and disposing of the excreta themselves, 59% said that they had no objections, while 41% said they had objections.

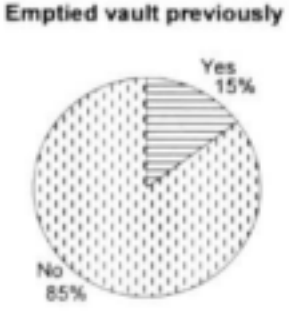
Figure 21: Objections to emptying the vault



The respondents, who did have objections to emptying the vault and disposing of the excreta themselves, provided the following reasons:

- We do not want to work with excreta/faeces.
- The municipality must take the excreta away.
- It is difficult to empty the vault on your own.
- One has to hire people to empty the pit.
- Opening the slab and sealing it again is a problem.
- Don't know where to dispose of the excreta.

Figure 22: Needed to empty vault

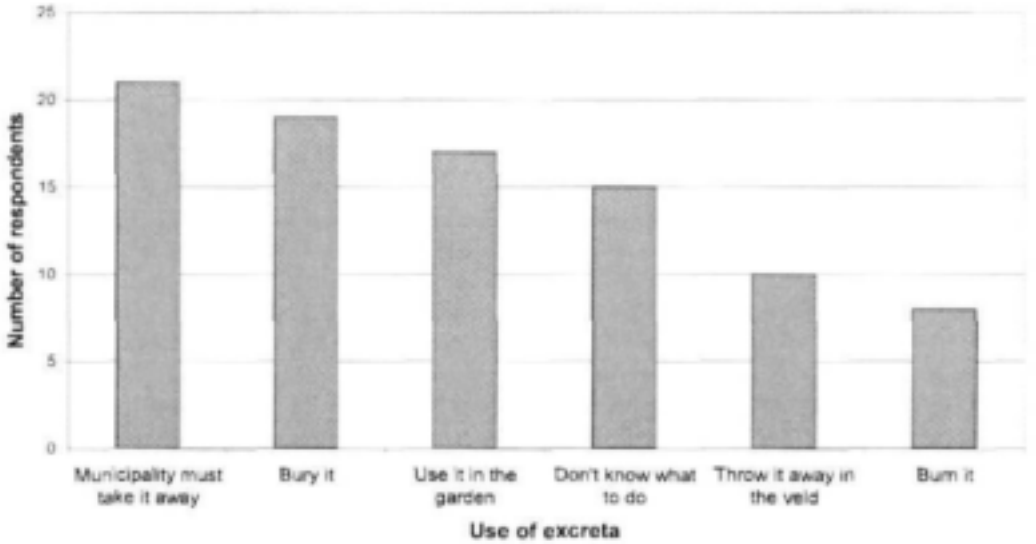


Not all the respondents had needed to empty the vault since they started using the UD toilet. Only 15% had needed to do so.

1.5.3 Use of excreta

When asked in what way the respondents use or will use the contents of the vault, they replied in the following manner:

Figure 23: Use of excreta



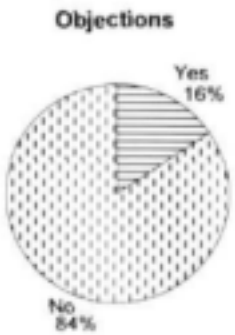
The majority (82%) of the respondents were aware of the fertiliser value of faeces and were also willing to use it in their gardens. The reasons provided by 18% of the respondents for not wanting to use the faeces in their gardens, were the following:

- We don't have a garden.
- We don't like handling faeces.
- We don't think using excreta in the garden is a good thing to do, it is unhealthy.
- We do not want to eat vegetables that grew in excreta.

1.6 COLLECTION/DISPOSAL SERVICE

1.6.1 Objections to a collection/ disposal service

Figure 24: Objections



When asked whether the respondents wanted a collection/ disposal service for the excreta to be established, the majority (84%) said they had no objections to the establishment of a collection/ disposal service, while 16% said they did not want it.

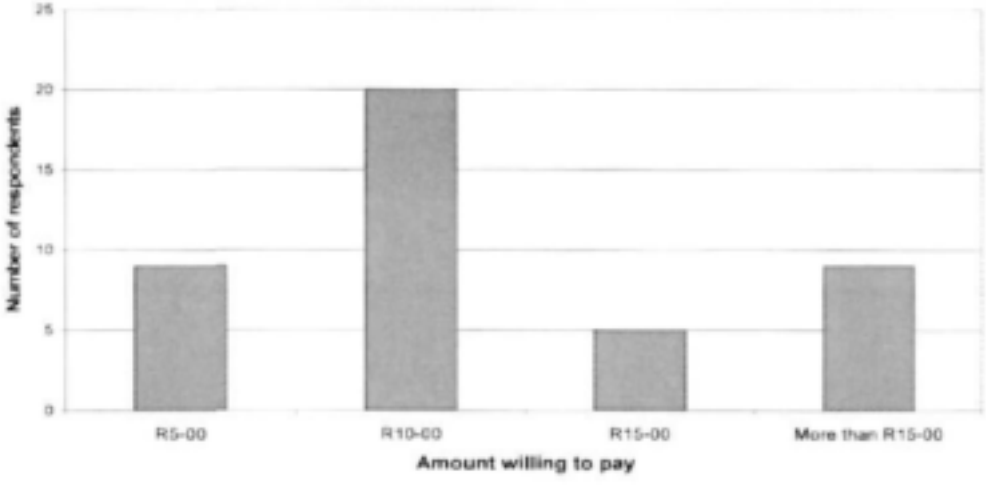
1.6.2 Willingness to pay for collection/ disposal service

Figure 25: Willingness to pay for service

When the respondents were asked whether they were willing to pay for a collection/disposal service, they were divided in their opinion: 56% said they would pay and 44% said they were not willing to pay.

Those (56%) who were willing to pay said they would pay in the following manner:

Figure 26: Amount willing to pay for service



1.6.3 Management of the collection/ disposal service

The respondents replied in the following way concerning the responsible persons/institutions for managing the collection/disposal service:

Figure 27: Responsibility for excreta disposal

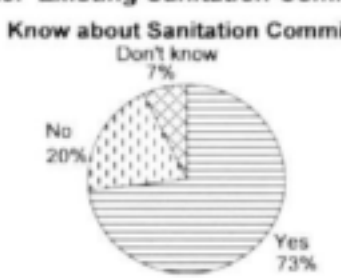
Almost half the respondents (45%) said that the local municipality was responsible for disposal of the excreta, 34% said the household was responsible and 20% said the people in the community should manage it. Only 1% said it is the responsibility of the Sanitation Committee.

1.7 INSTITUTIONAL CAPACITY IN THE COMMUNITY

1.7.1 Sanitation Committee

When the respondents were asked about the existence of a sanitation committee in their community, they were not all aware of such an institution.

Figure 28: Existing Sanitation Committee

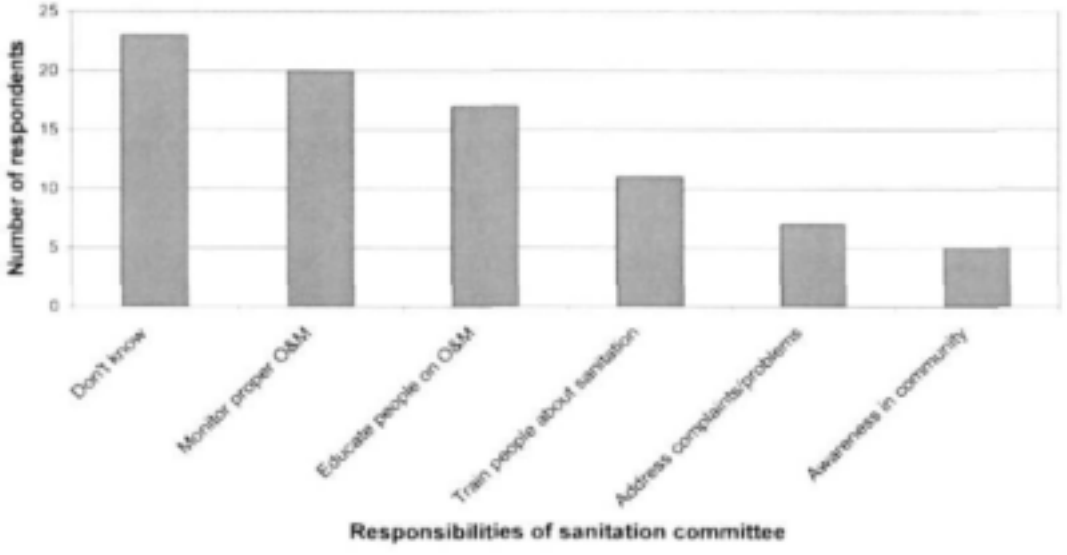


However, 73% of the respondents knew about the Sanitation Committee and also knew the contact person, as well as where to contact the person.

1.7.2 Responsibilities of Sanitation Committee

The respondents perceived the following to be the responsibilities of a sanitation committee:

Figure 29: Responsibilities of the Sanitation Committee



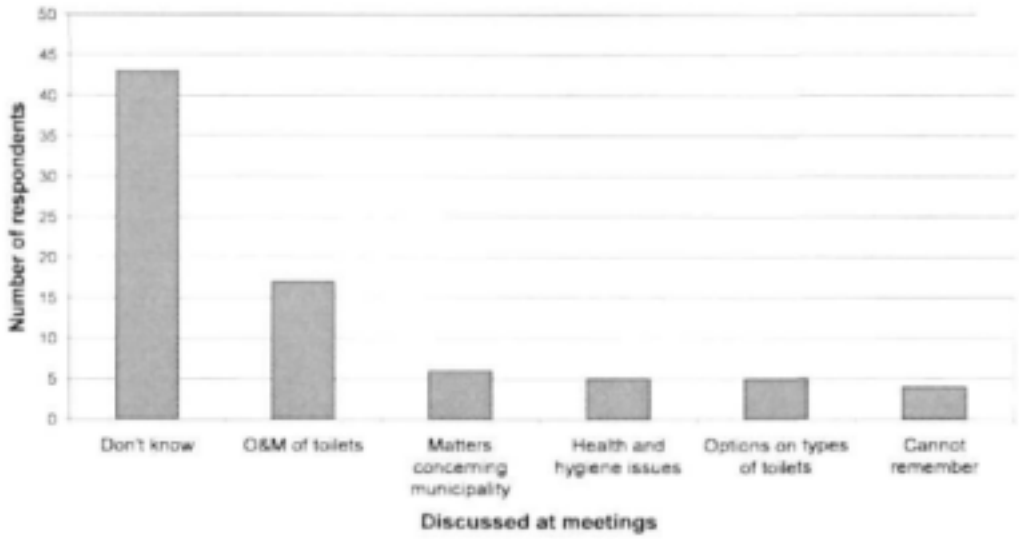
Some other responsibilities noted were the following:

- Educate/train the community about health and hygiene aspects.
- Monitor the construction of the toilets.
- Answer questions about toilets.
- Monitor health and hygiene education done by the health workers.
- Build new toilets.

1.7.3 Sanitation Committee Meetings

Almost half (47%) of the respondents replied that they attended the Sanitation Committees' meetings. When asked what was discussed at these meetings, the responses were as follows:

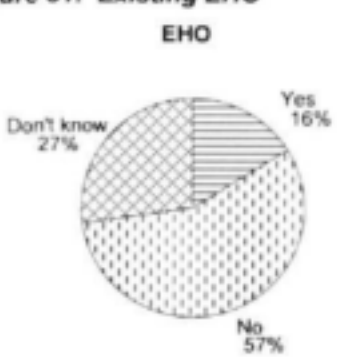
Figure 30: Discussion at Sanitation Committee meetings



The respondents who attended the meetings said that both men and women attended, although seven (7) respondents said that only women attended as men were not interested in toilet business.

1.7.4 Environmental Health Officer (EHO)

Figure 31: Existing EHO



Only 16% of the respondents replied that they knew about an EHO in their communities, while more than half the respondents (57%) said they did not have an EHO. These respondents also did not know any names or where to contact an EHO.

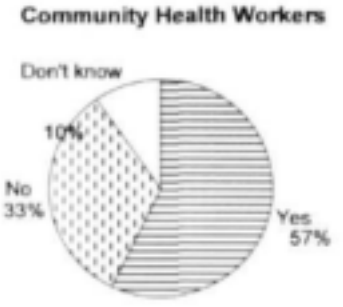
According to the local authorities and implementing agents, all the target communities had access to an EHO within their areas.

1.7.5 Community Health Workers

More than half the respondents (57%) were aware that there were community health workers in their communities.

The respondents who knew about the community health workers also knew their names and knew that they could be contacted at the Clinic in the community or at their homes.

Figure 32: Existing Community Health Workers



2. PHYSICAL CONDITION OF THE UD TOILETS

The following photographs depict the physical condition of the UD toilets in the target communities:

Hanover

Merriman, De Aar

Figure 33: Photographs of UD toilets

Campbell

Boegoeberg (Groblershoop)

Augrabies

In most cases the physical condition of the UD toilets in use were good to excellent. The toilets were kept clean and hygienic. Some of them had a poster depicting the use and the hygiene of the toilet stuck on the walls or door.

In some instances, however, the toilet was dirty and smelly. The construction was not executed properly and the household decided not to use or maintain the toilet.

UD toilets built in existing houses, where a flush toilet or a bucket system was converted to UD, necessitated that the vault be built outside the foundations of the house, resulting in the pedestal not being situated above the vault. This resulted in the household members having to push the excreta down for it to fall into the vault.

3. CONCLUSIONS

The conclusions below are drawn from the data, as well as from the impressions and perceptions of the researchers.

The following conclusions were drawn from the data:

- **Approaches and coordination**: Sanitation projects in communities are usually *ad hoc* and short-term. A major weakness with sanitation projects in communities of the Northern Cape Province is that they are implemented by a number of loosely coordinated agencies. Not only did this result in duplication of effort and inefficient allocation of scarce resources, but it also did not produce any significant improvements in the welfare of the users. In addition, communities are confused by different and often conflicting agency policies and methodologies, for example in relation to contributions and financing.

- **Communication and advocacy**: The communities in the Northern Cape Province are unaware or ill informed about local authority development plans and programmes. Therefore, it is difficult for communities to make local authorities

accountable to them when they know so little about their work and plans. There is an urgent need to improve such structures, attitudes and ways of working.

There is also a lack of knowledge regarding community structures, such as the sanitation committee, the availability of an EHO or the existence of community health workers.

- **Roles and responsibilities**: There is a tendency for communities in the Northern Cape Province to assume that the provision of sanitation services is solely the responsibility of local authorities. During the research this tendency was identified in two of the target communities where sanitation projects had been implemented.

- **Capacity and skills building**: The research shows that skills building in the communities of the Northern Cape Province was successful as most of the UD toilets were built by community members.

- **Training**: The training in operation and maintenance of the UD toilets was successful. The users said that they would not have been capable of using the UD toilets correctly without the training. However, the health and hygiene training needs to be refreshed as very few respondents mentioned health and hygiene aspects as part of the training received.

- **UD sanitation**: The research shows that the UD toilets are popular amongst most users in the Northern Cape Province for various reasons. The main reasons were that there is no smell, the UD toilet does not use water and that the faeces could be used as compost. Those who did not like the UD toilets, preferred a flush toilet. The respondents did not have a specific preference for either a double vault or a single vault. Those who had a single vault had never used a double vault before and preferred the single vault. Likewise, those who had a double vault never used a single vault before and preferred a double vault.

- **Operation and maintenance**: The UD toilets in the Northern Cape communities are operated and maintained correctly in most cases. Some problems occurred regarding the size of the urine pipes, but this is in the process of being resolved.

- **Health and hygiene**: Most local authorities accept the importance of health and hygiene promotion, but such programme components have still not been given the emphasis, careful design (including objectives, indicators and monitoring and evaluation procedures) and budget that are required to be effective. The approaches that have been applied have generally not been effective in changing behaviour. There is a need to link health and hygiene messages very closely with the local cultural beliefs and practices of the communities.

- **Disposal/collection system**: The need for a disposal/collection system is very community-specific. Most communities did not want to pay for such a service. Only two communities in the De Aar area were willing to pay for disposal/collection of the faeces, and thought it was the responsibility of the municipality to do this.

- **Use of the excreta**: Most respondents were aware of the fertiliser value of the urine and faeces, but were only willing to use the faeces in their gardens. In most cases, the urine was piped to a soak away.

ANNEXURE D

RESEARCH FINDINGS ON OWNERSHIP AND USE OF URINE-DIVERSION SANITATION SYSTEMS

Eastern Cape Province

CONTENTS

List of figures

1. RESEARCH FINDINGS

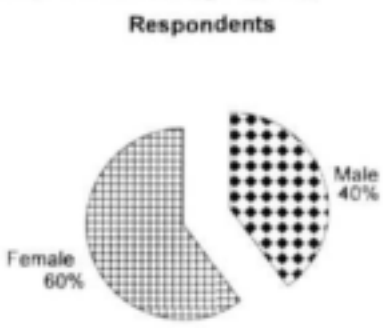
The results from the interviews and completed questionnaires are presented below. Conclusions are made in Section 3.

A total of 30 interview schedules were completed in the Eastern Cape Province (a sample of 100% of the UD toilets), covering 30 interviewees and 236 household members.

The responses originated from the following areas:

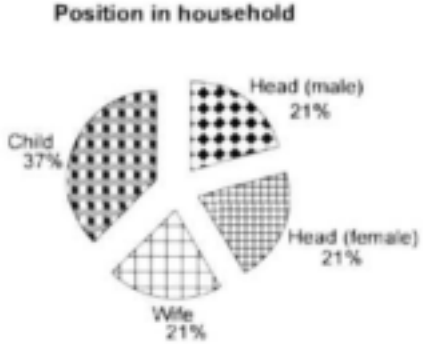
AREA	TOWN	INTERVIEW SCHEDULES COMPLETED	NUMBER OF INTERVIEWEES
Eastern Cape	Manyosini	10	10
	Sinyondweni	10	10
	Gwebinkundla	10	10

Figure 1: Composition of target group



The gender distribution of all the respondents was 40% (12) male and 60% (18) female. This is due to the high unemployment figure in the Eastern Cape Province; therefore, both male and female household members were available at home during the day when the research was conducted.

Figure 2: Position in the household



The positions of the respondents in their households were equally distributed between male heads of households (21%), female heads of households (21%) and wives (21%). More than two thirds of the respondents were children in the households, the parents were way visiting and the schools were closed for holidays

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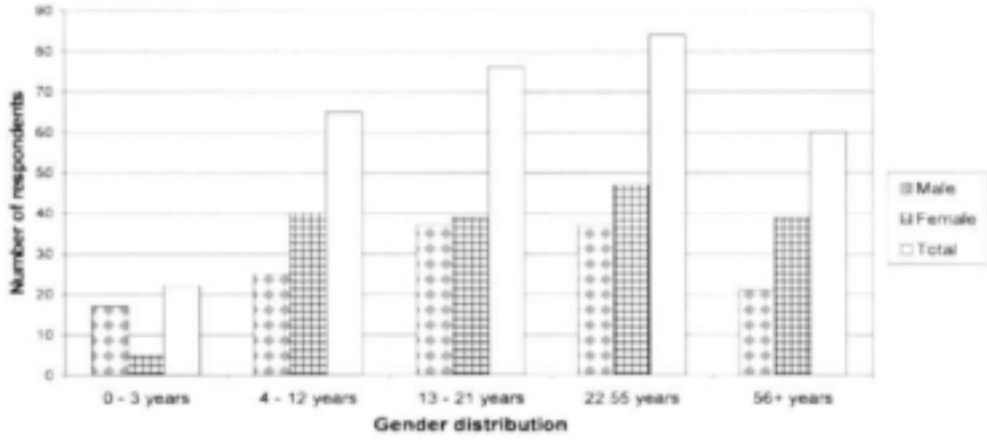
1.1 HOUSEHOLD INFORMATION

The gender distribution of the interviewed household members was as follows:

Figure 3: Gender of household members

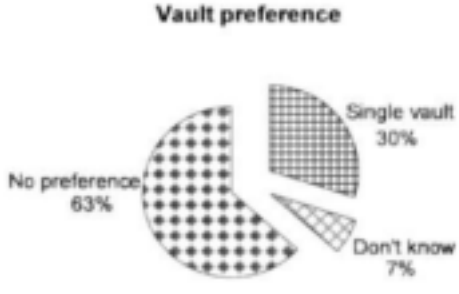


1.2 SANITATION

1.2.1 Types of toilets

The UD toilet was the only toilet found in the households of the target communities in the Eastern Cape Province. All these toilets were built with single vaults and had been used by the households for longer than a year.

Figure 4: Preference of vault



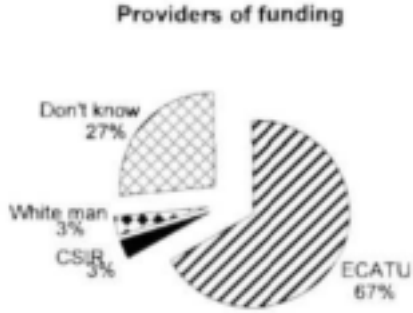
Almost two thirds (63%) of the respondents had no preference regarding the vaults and 30% said that they preferred a single vault. Seven percent of the respondents did not know which they preferred, because all the toilets had been built with a single vault.

Those who had a single vault said that they preferred the single vault because it is easy to use.

1.2.2 Toilet providers

A question was posed to the respondents regarding the origins of funding for the UD toilets in their communities.

Figure 5: Funding of UD toilet



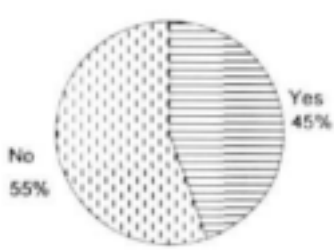
Two thirds (67%) of the respondents knew where the funding for the UD toilets came from, and also knew the correct source (ECATU).

This indicates that the community information sessions and participation were adequate and to the advantage of the users of the UD toilets. The respondents were aware of the source of funding and the purpose of the UD project in their areas.

1.2.3 Household contribution towards UD toilet

The households were asked whether they contributed towards the construction and/or funding of their UD toilets.

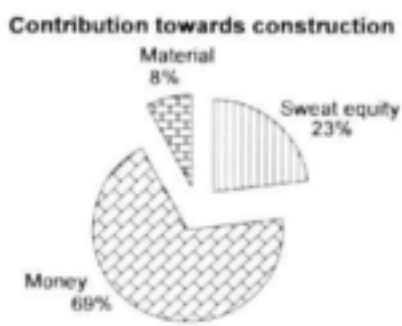
Figure 6: Household contribution



More than half of the respondents (55%) said they did not contribute towards the construction of the UD toilet, while 45% said they did contribute.

Those who contributed towards the construction of their UD toilets, did so by providing material, assisting the builders or paid for the baskets that were put in the vaults.

Figure 7: Contribution towards construction

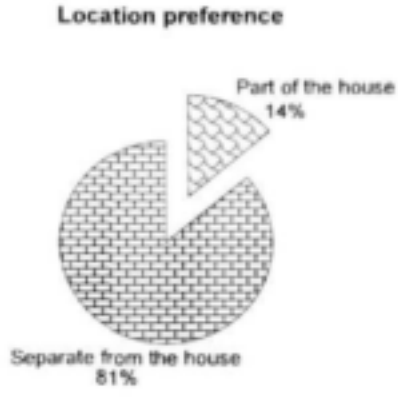


The material the respondents contributed consisted of corrugated iron for the roof (mainly from the superstructure of their old pit toilets). The sweat equity consisted of assisting/cooking for the builders.

1.2.4 Household preference

All the existing UD toilets were built separately from the houses. The respondents were asked whether they wanted the UD toilet to be part of their houses with an inside door now that they had been using it for a while.

Figure 8: Location of UD toilet



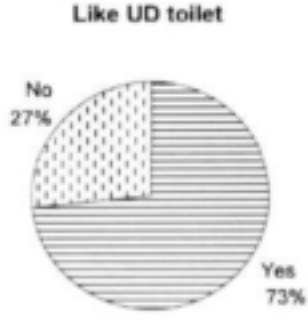
The majority (81%) of the respondents preferred the UD toilet to be separate from the house. The main reason for this reply was that they were used to the toilet being separate from the house.

Only 4% preferred the toilet to be part of the house, while one (1) person did not know whether he wanted the toilet as part of the house or not.

1.2.5 Perceptions of UD toilet

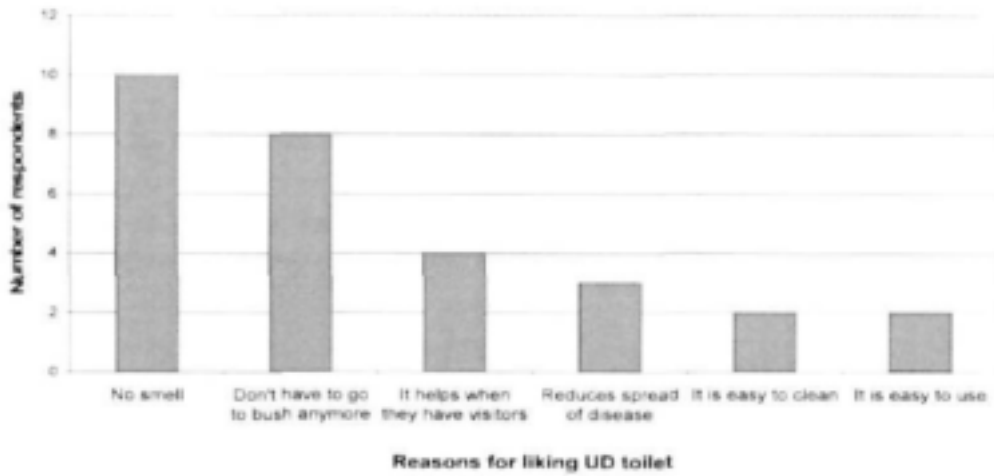
When the respondents were asked whether they liked the UD toilet or not, the majority (73%) of the respondents said they liked the UD toilet. Only 27% did not like it.

Figure 9: Like/dislike UD toilet



The following reasons for the respondents liking the toilet were provided:

Figure 10: Reasons for liking the UD toilet

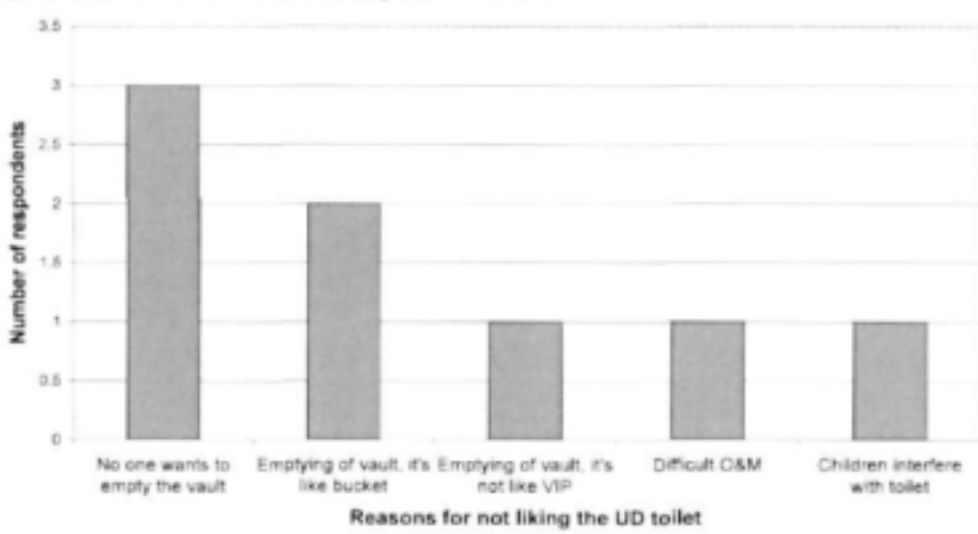


Other reasons provided were the following:

- There are no problems with the toilet.
- It can be used by both men and women.
- They get fertiliser from the toilet.
- The way it is operated.

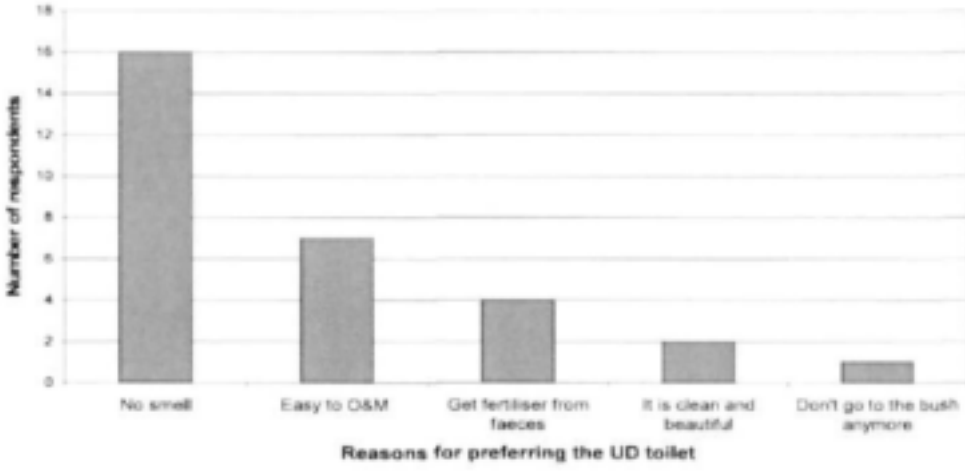
The reasons the respondents gave for not liking the UD toilet were the following:

Figure 11: Reasons for not liking the UD toilet



The majority (77%) of the respondents said that they preferred a UD toilet to other types for the following reasons:

Figure 12: Reasons for preferring the UD toilet

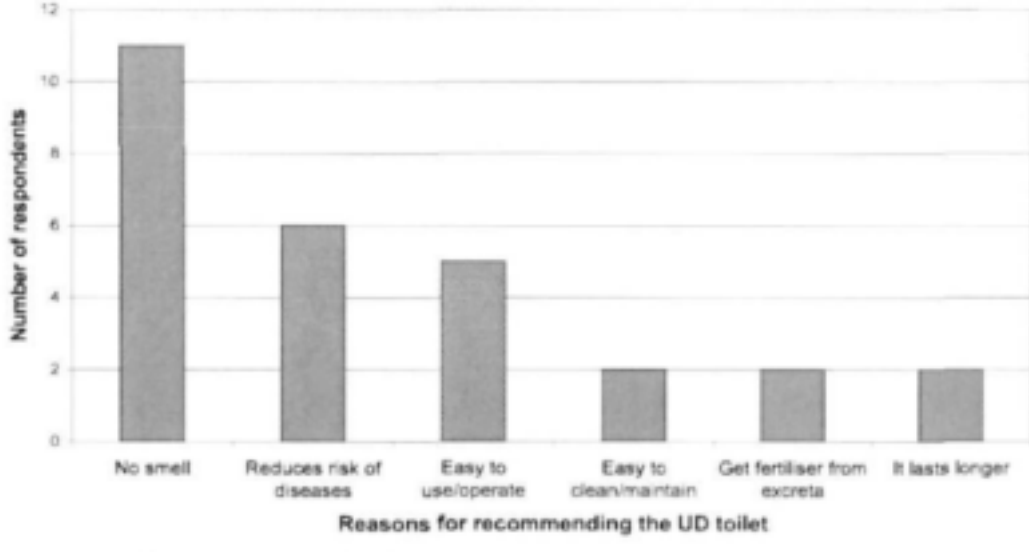


The reasons provided for not preferring a UD toilet to other types were the following:

- Because of the difficulty of operation and maintenance.
- Emptying the contents of the vault.
- We prefer a VIP toilet.

The majority (77%) of the respondents also said that they would recommend the UD toilet to others for the following reasons:

Figure 13: Reasons for recommending the UD toilet



Other reasons provided were the following:

- It is well/properly built.
- Its construction is very simple.
- It is good and we like it.

The reasons for not recommending the UD toilet to others are the following:

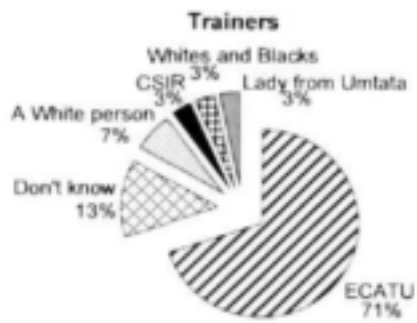
- Because of the emptying of the vault.
- The faeces do not dry out.
- The urine pipe is broken.

1.3 TRAINING IN THE USE OF UD TOILETS

1.3.1 Training received

Almost all (97%) the respondents received training in the operation and maintenance of the UD toilets. The respondents said the training was conducted by the following:

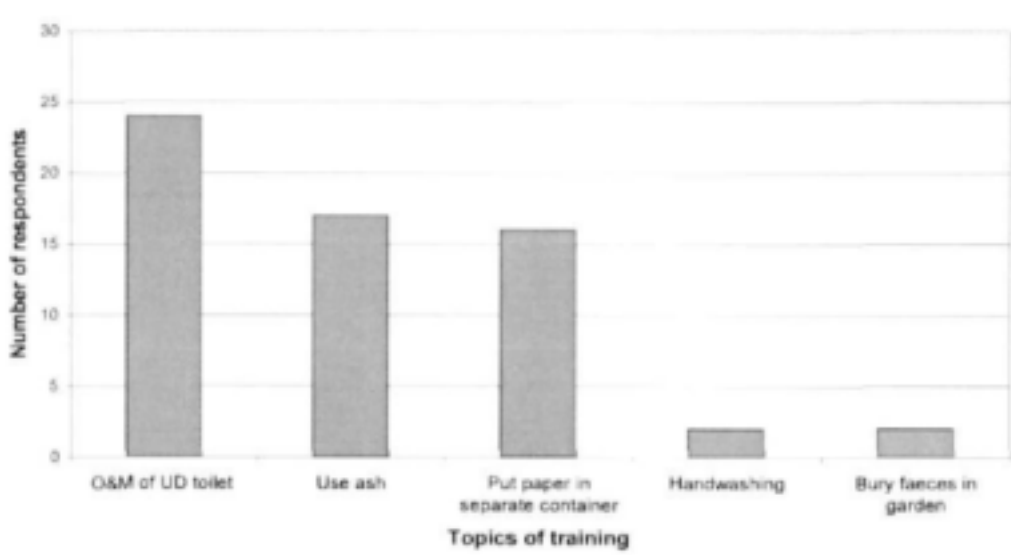
Figure 14: Trainers on O&M



1.3.2 Understanding of the training

The majority (87%) of the respondents replied that the training they received was useful to the household. According to the respondents, the training consisted of the following:

Figure 15: Contents of training



Some respondents said the training also included the following:

- Have two buckets, one for used paper and one for ash.
- Use brush to clean the seat.
- Hygiene.

1.4 OPERATION OF THE UD TOILETS

1.4.1 Household use of UD toilet

The data showed that almost everybody in the household, except small children, used the UD toilet. Both women and men used the same toilet.

Most of the children under the age of 10 did not use the UD toilet for the following reasons:

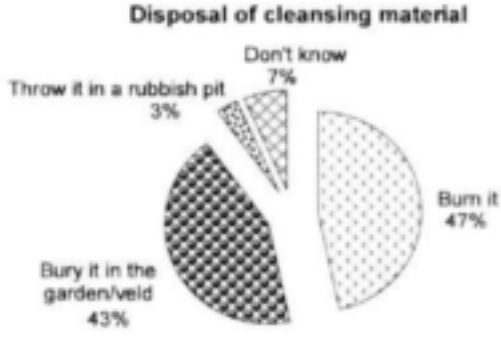
- They do not know how to use/ operate the toilet.
- They are afraid the children might not use the toilet properly.
- They make it dirty.
- They are afraid they might fall into the pit.
- They don't use ash.
- The seat is too high for them.

1.4.2 Cleansing material

The respondents were asked where they disposed of the anal cleansing material after they used the UD toilet. The majority (93%) of the respondents said that they deposited the cleansing material in a separate container in the toilet cubicle. The cleansing material is mostly disposed of once a week or once a month.

They disposed of it in the following manner:

Figure 16: Disposal of cleansing material



1.4.3 Operation and maintenance of the UD toilet

The respondents were asked what they used to cover the faeces after using the UD toilet. The majority (93%) covered the faeces with ash.

The majority of the respondents (83%) said that the UD toilet is easy to operate and maintain (including excreta removal). The only problems mentioned were the following:

- The young people do not want to empty the vault.
- Emptying the contents of the vault.
- The contents of the vault are very heavy to carry.

1.5 USE OF EXCRETA

1.5.1 Disposal of urine

The majority (90%) of the households disposed of the urine in a soak pit. Only one (1) household piped the urine to trees/plants.

1.5.2 Emptying of the vault

The respondents were asked whether they had objections to emptying the vault and disposing of the excreta themselves. More than two thirds (73%) of the respondents said that they had no objections.

The 23% of the respondents who did have objections to emptying the vault and disposing of the excreta themselves provided the following reasons:

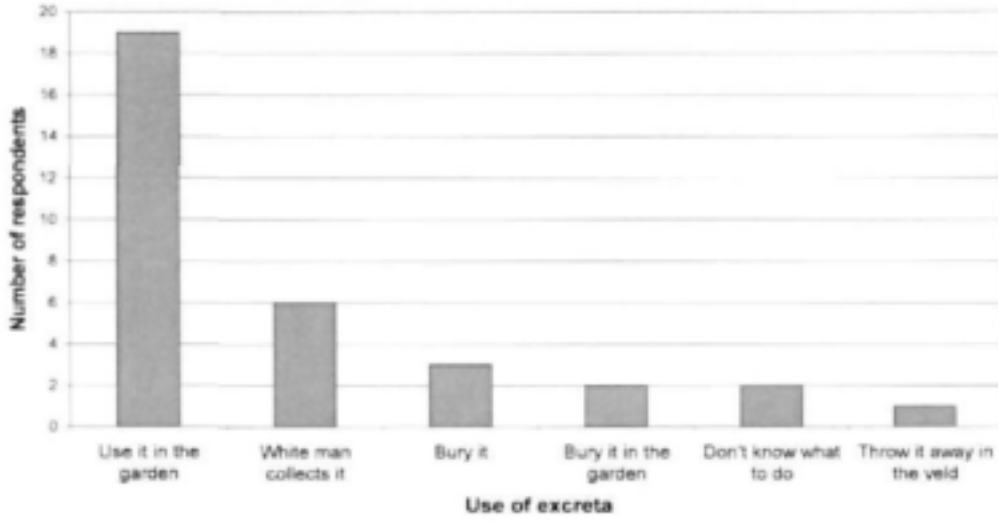
- The emptying of the vault is not easy.
- It is not easy to dispose of the contents of the vault.
- Excreta are a human waste that is not good for human consumption through eating the vegetables.
- No one is prepared to empty the vault.

The majority (93%) of the respondents needed to empty the vault since they started using the UD toilet. Only two (2) households did not need to empty the vault because they did not use the UD toilet.

1.5.3 Use of excreta

When asked in what way the respondents use or will use the contents of the vault, they replied in the following manner:

Figure 17: Use of excreta



Almost all (97%) the respondents were aware of the fertiliser value of faeces and urine. The majority (83%) was willing to use the excreta in their gardens, while three (3) households were not willing. One (1) household said that they use the excreta for maize but will not use it in the vegetable garden.

The reasons provided by the 3 households for not wanting to use the excreta in their gardens, were the following:

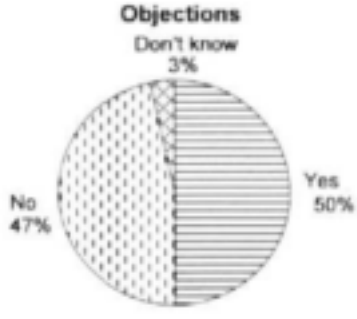
- The head of the household does not want faeces to be used in the garden.
- It makes the garden smell bad.
- Urine kills plants.

1.6 COLLECTION/DISPOSAL SERVICE

1.6.1 Objections to a collection/ disposal service

When asked whether the respondents wanted a collection/ disposal service for the excreta to be established, they were divided in their opinion.

Figure 18: Objections

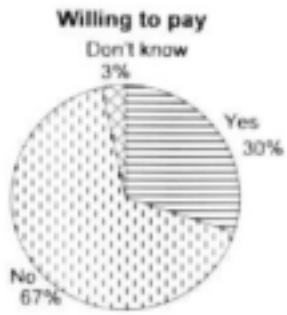


Half (50%) of the respondents did not have any objections to the establishment of a collection/disposal service, while 46% said they did not want such a service to be established. One (1) household did not know whether they wanted a collection/ disposal service or not.

1.6.2 Willingness to pay for collection/ disposal service

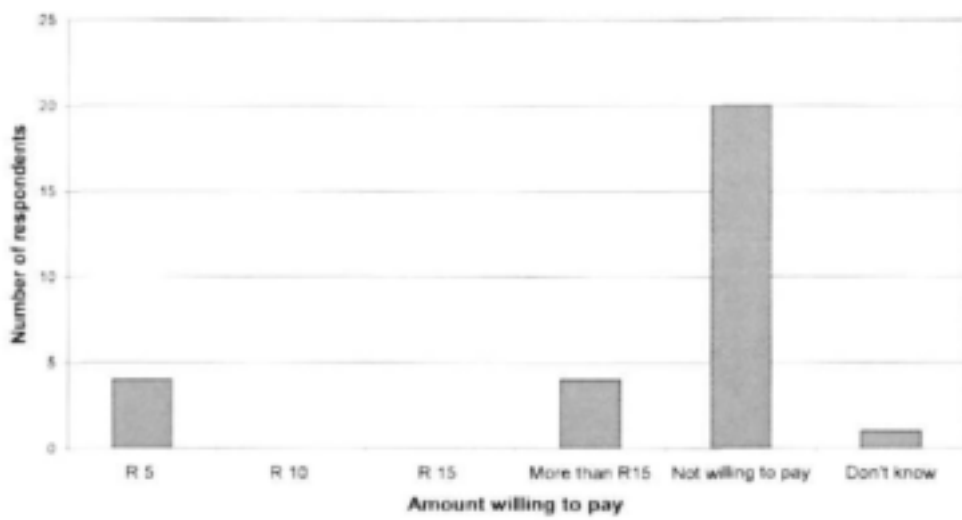
When the respondents were asked whether they were willing to pay for a collection/disposal service, two thirds (66%) of the respondents were not willing to pay.

Figure 19: Willingness to pay for service



Those (30%) who were willing to pay said they would pay in the following manner:

Figure 20: Amount willing to pay for service



1.6.3 Management of the collection/ disposal service

The majority of the respondents (85%) said that the household was responsible for disposal of the excreta, 7% said people in the community were responsible and 4% said the local municipality should dispose of the excreta.

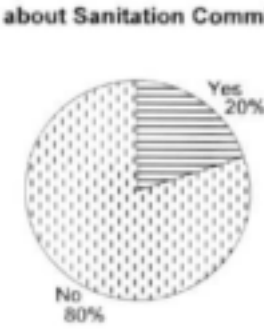
Figure 21: Responsibility for excreta disposal

1.7 INSTITUTIONAL CAPACITY IN THE COMMUNITY

1.7.1 Sanitation Committee

When the respondents were asked about the existence of a Sanitation Committee in their community, the majority (80%) of them said that they did not have such a committee in their respective communities. However, 20% said they were aware of a Sanitation Committee and also knew the names and contact details of a Sanitation Committee member.

Figure 22: Existing Sanitation Committee

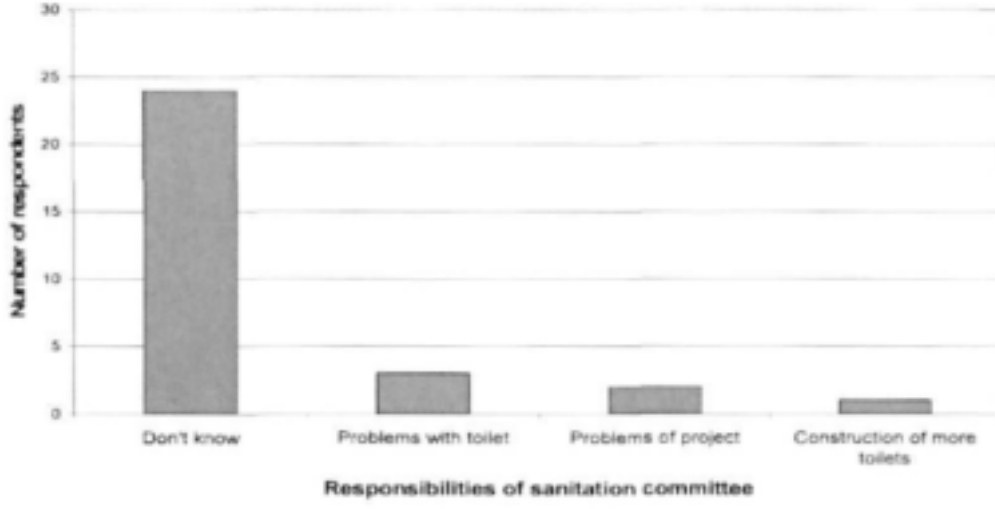


The Sanitation Committees in two of the target communities were established for the purpose of the UD project and disbanded once the project was completed. In one of the target communities the Sanitation Committee already existed when the UD project was implemented and continued with their activities after completion of the UD project.

1.7.2 Responsibilities of Sanitation Committee

Those respondents who knew about the Sanitation Committee perceived the following tasks to be the responsibilities of the committee in their communities:

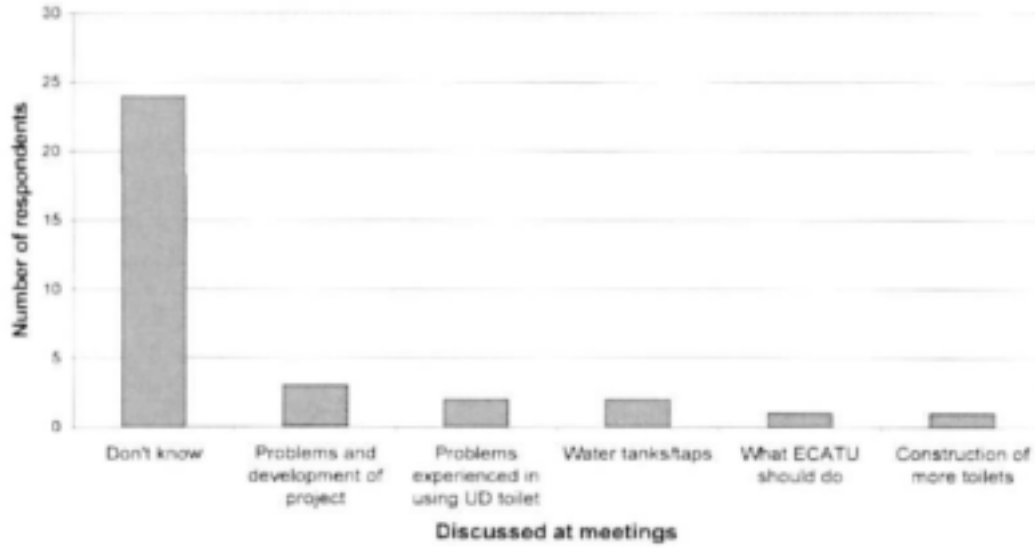
Figure 23: Responsibilities of Sanitation Committee



1.7.3 Sanitation Committee Meetings

Only six (6) respondents replied that they attended the Sanitation Committees' meetings. When asked what was discussed at these meetings, they mentioned the following:

Figure 24: Discussion at committee meetings



Both men and women attended these meetings. The "don't know"-response was given by the respondents who did not attend these meetings.

1.7.4 Environmental Health Officer (EHO)

All the respondents (100%) said that they did not have an EHO in their communities. They also did not know any names or where to contact an EHO.

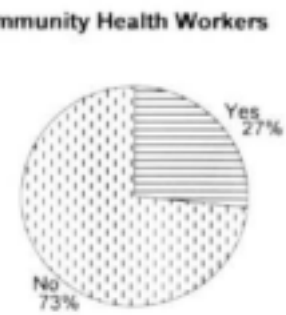
According to the local authorities and implementing agents, all the communities in the Eastern Cape had access to an EHO within the areas.

1.7.5 Community Health Workers

More than two thirds of the respondents (73%) were not aware that there were community health workers in their communities. Only 27% said that they knew about the community health workers.

The respondents who knew about the community health workers also knew their names and how to contact them.

Figure 25: Existing Community Health Workers



2. PHYSICAL CONDITIONS OF THE UD TOILETS

The following photographs depict the physical condition of the UD toilets in the target communities:

Manyosini

Sinyondweni

Figure 26: Photographs of UD toilets

Gwebinkundla

In most cases the physical condition of the UD toilets in use was good to excellent. The toilets were kept clean and hygienic.

In some instances, however, the toilet was dirty and smelly. The construction was not executed properly and the household decided not to use or maintain the toilet. This is the case in especially Gwebinkundla.

Some toilets were not used as toilets but as storage places for building material for their houses or other valuables because the toilet was the only place that could be locked.

3. CONCLUSIONS

The conclusions below are drawn from the data, as well as from the impressions and perceptions of the researchers.

- **Approaches and coordination**: Sanitation projects in communities are usually *ad hoc* and short-term. A major strength with sanitation projects in the target communities in the Eastern Cape was that they were implemented by one implementing agent (ECATU with the assistance if the CSIR). Not only did this result in eliminating the duplication of effort and inefficient allocation of scarce resources, but it also produced a significant improvement in the welfare of the users. In addition, the communities were not confused by different and often conflicting agency policies and methodologies, for example in relation to contributions and financing.

- **Communication and advocacy**: The communities in the Eastern Cape are unaware or ill informed about local authority development plans and programmes. Therefore, it is difficult for communities to make local authorities accountable to them when they know so little about their work and plans. There is an urgent need to improve such structures, attitudes and ways of working.

  There is also a lack of knowledge regarding community structures, such as the continued existence of a sanitation committee and the availability of an EHO.

- **Roles and responsibilities**: There is a tendency for communities in the Eastern Cape to assume that the provision of sanitation services is solely the responsibility of local authorities. Only in two of the target communities did the respondents take responsibility for improving their own villages.

- **Capacity and skills development**: The research shows that skills development in the Eastern Cape communities was relatively successful as most of the UD toilets were built by ECATU with the assistance of community members.

- **Training**: The training in the operation and maintenance of UD toilets was very successful. The users said that they would not have been capable of using the UD toilet correctly without the training. However, the health and hygiene training needs to be refreshed as very few respondents mentioned health and hygiene aspects as part of the training received.

- **UD sanitation**: The research shows that the UD toilets were popular amongst most users in the Eastern Cape for various reasons. The main reasons were that there was no smell, the UD toilet did not use water and that the faeces could be used as compost. Those who did not like the UD toilets, preferred a flush toilet.

The respondents did not have a specific preference for either a double vault or a single vault, as they were only familiar with the single vault.

- **Operation and maintenance**: The UD toilets in the Eastern Cape are operated and maintained correctly in most cases. Only in one of the target communities, the UD toilets were not properly operated and maintained. A possible reason for this was that the headman/chief of the village did not like the UD toilet.

- **Health and hygiene**: Most local authorities accept the importance of health and hygiene promotion, but such programme components have still not been given the emphasis, careful design (including objectives, indicators and monitoring and evaluation procedures) and budget that are required to be effective. Refresher health and hygiene training is necessary to assist behaviour change. There is also a need to link health and hygiene messages very closely with the local cultural beliefs and practices of the communities in the Eastern Cape.

- **Disposal/collection system**: The need for a disposal/collection system is very community-specific. Two communities did not want to pay for such a service. Only one of the target communities was willing to pay for disposal/collection of the faeces.

- **Use of the excreta**: Most respondents were aware of the fertiliser value of the urine and faeces, but were only willing to use the faeces in their gardens. In most cases, the urine was piped to a soakaway.

ANNEXURE E

RESEARCH FINDINGS ON ACCEPTANCE AND USE OF URINE DIVERSION SANITATION SYSTEMS

KwaZulu-Natal

CONTENTS

List of figures

1. RESEARCH FINDINGS

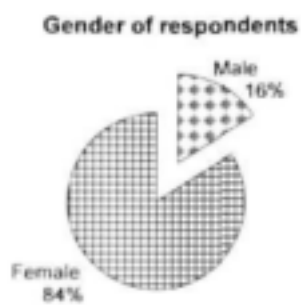
The results from the interviews conducted between 8 and 11 June 2004 are presented below. Conclusions are drawn in Section 3.

The responses originated from the following areas:

AREA	TOWN	NUMBER OF UD TOILETS BUILT	INTERVIEW SCHEDULES COMPLETED	NUMBER OF INTERVIEWEES
KwaZulu-Natal	Umnini	284	30	38
	eHlanzeni	210	30	30

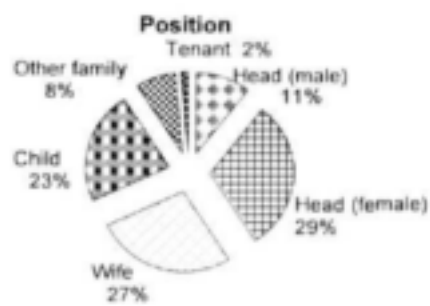
A total of 60 interview schedules were completed in KwaZulu-Natal, covering 68 respondents representing 392 household members. The sample comprises more than 10% of the total number of UD toilets built in the two target communities in June 2004.

Figure 1: Composition of target group



The gender distribution of all the respondents was 84% (57) male and 16% (11) female. This is mainly due to the fact that the female household members were more readily available during the day (being at home and not having a day job) while the male household members were away at work.

Figure 2: Position in the household

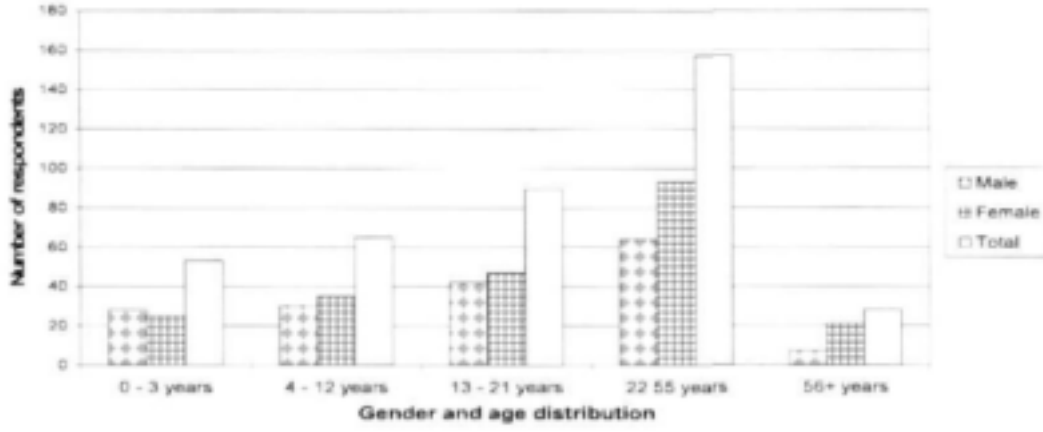


Some of the households (29%) were female-headed households.

1.1 HOUSEHOLD INFORMATION

The gender distribution of the household members that were interviewed was as follows:

Figure 3: Gender of household members



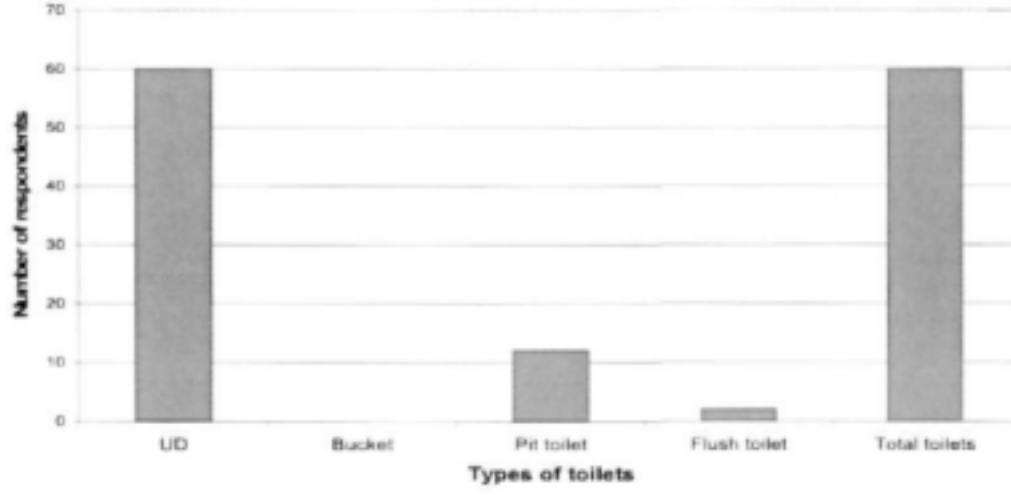
Households in the two target communities comprised most of the family members because the communities were close to a big city (Durban); therefore, those who had jobs could live at home.

1.2 SANITATION

1.2.1 Types of toilets

The UD toilet was not the only toilet found in the yards of the respondents. Some households (20%) also used pit toilets and two (2) households used flush toilets.

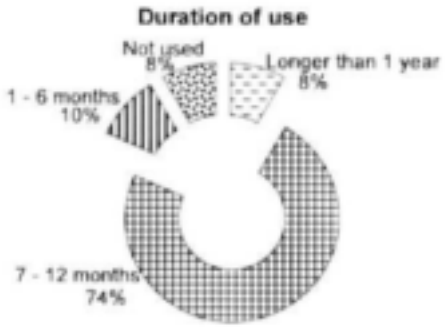
Figure 4: Types of toilets



The pit toilets were still in use by especially children under the age of ten and by those households that did not use the UD toilets.

The UD toilets were all built with double vaults. This meant that the respondents did not know about a single vault or how it operates, and could therefore not say whether they preferred a single or a double vault.

Figure 5: Length in use of UD toilet

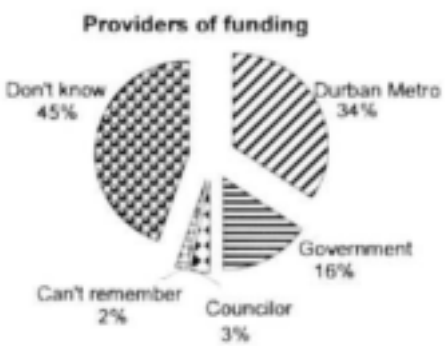


The majority of the UD toilets (74%) had been used by the households for seven to 12 months. This meant that the vaults had not filled up yet and therefore the perceptions of the people regarding the removal of excreta could not be tested on an experiential basis.

1.2.2 Funding for the UD toilet

A question was posed to the respondents regarding the origins of the funding for the UD toilets in their communities, to determine whether the respondents were aware of the provincial and local sanitation strategies and programmes.

Figure 6: Funding for UD toilet



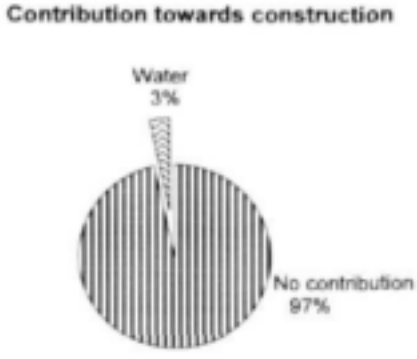
Almost half (45%) of the respondents did not know where the funding for the UD toilets came from; 53% thought it came from some form of government and 2% could not remember.

This indicates that the communities were ill informed about the strategies and programmes of local and national government regarding sanitation. This impacts on the sustainability of sanitation projects and also creates a sense of non-ownership in the communities.

1.2.3 Household contribution towards UD toilet

A question was posed to the respondents regarding any form of contribution from them towards obtaining a toilet, to determine what sense of participation and ownership they displayed in terms of the toilet.

Figure 7: Household contribution



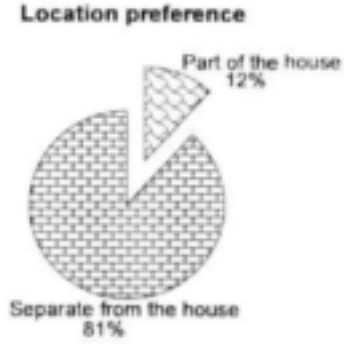
Almost all the respondents (97%) said they did not contribute anything towards the construction or the funding of the UD toilet, while 3% said they contributed water for the builders.

Lack of contribution towards the UD toilets, whether it be money, effort or material, creates a sense of non-ownership with the users of the toilets as they perceive them to be something they were given and therefore not their responsibility.

1.2.4 Household preference

All the existing UD toilets were built separately from the houses. It is the general perception that any toilet, except a flush toilet, should be separate from the house to escape the smell and to prevent transmission of diseases.

Figure 8: Location preference



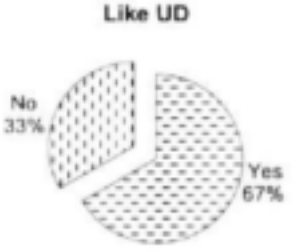
The majority (81%) of the respondents preferred the UD toilet to be separate from the house. The main reason for this reply was that they were used to the toilet being separate from the house.

Only 4% preferred the toilet to be part of the house, while one (1) person did not know whether he wanted the toilet as part of the house or not.

1.2.5 Perceptions of UD toilet

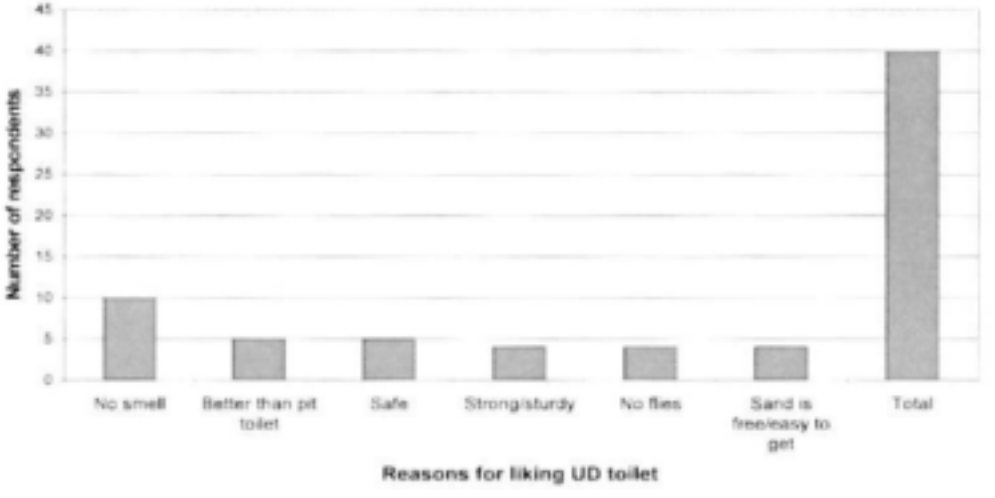
When the respondents were asked whether they liked the UD toilet or not, two thirds (67%) of the respondents said that they liked it. One third (33%) of the respondents did not like the UD toilet and eight (8) households did not use the toilet at all.

Figure 9: Like/dislike UD toilet



The following reasons for the respondents liking the toilet were provided:

Figure 10: Reasons for liking the UD toilet

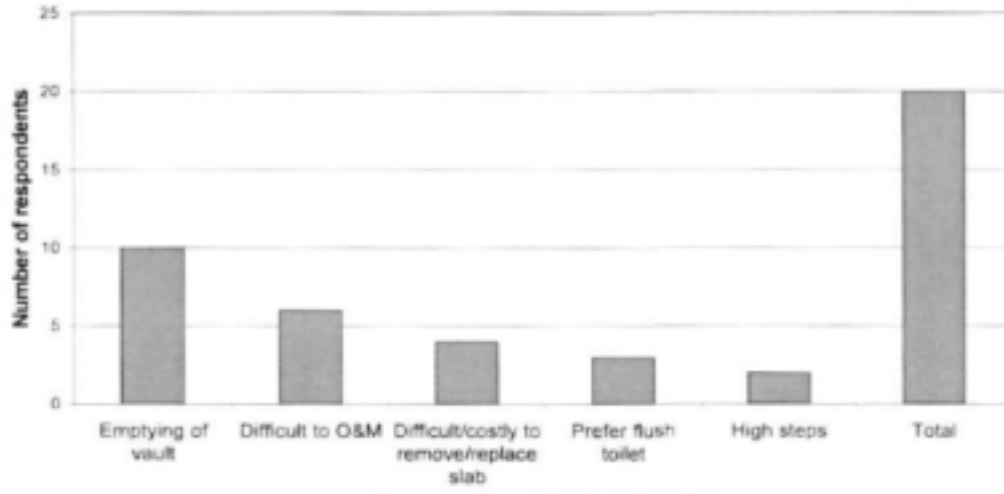


Other reasons provided were the following:

- There is privacy.
- It is clean, there are no germs and diseases.
- The seat is covered, the pedestal has a lid that deters flies.
- The government has built it for the household.
- No rainwater gets inside the toilet.
- No need to dig another pit.
- It is easy to clean and use.
- There are no problems with the toilet.

The reasons the respondents provided for not liking the UD toilet were the following:

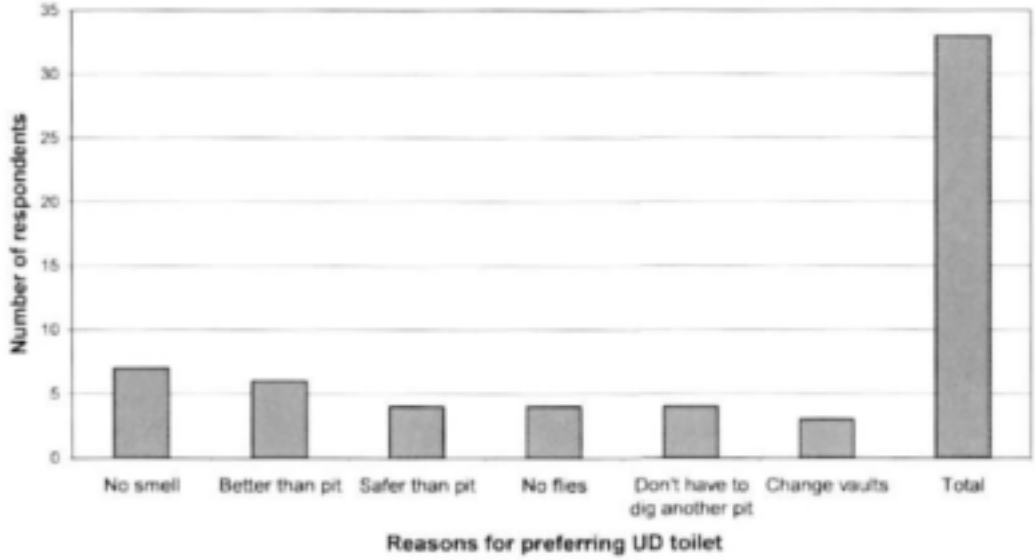
Figure 11: Reasons for not liking the UD toilet



These reasons indicate that removal of the faeces is perceived to be problematic even though the respondents had not yet needed to empty the vaults. The perceptions of people in general around handling human excreta are negative, even amongst respondents who said that they liked the UD toilet.

Just more than half (56%) the respondents said that they preferred a UD toilet to other types for the following reasons:

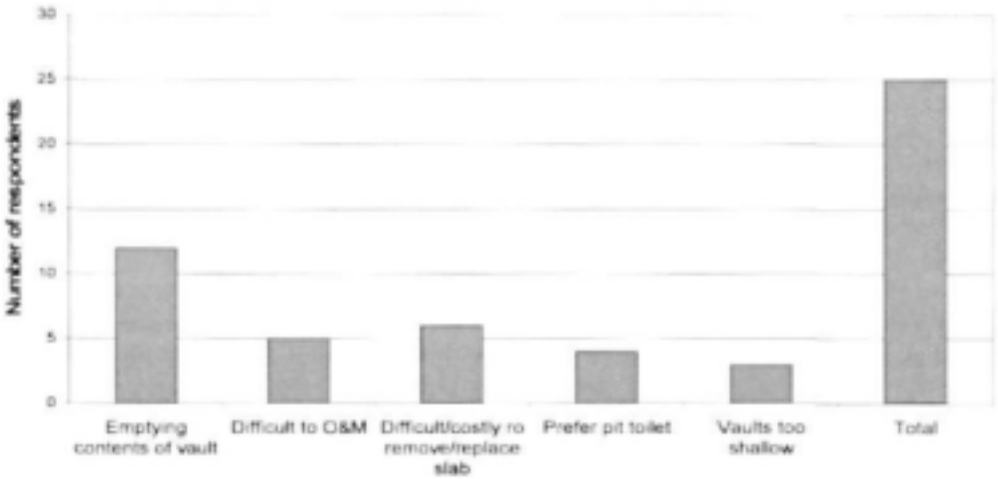
Figure 12: Reasons for preferring the UD toilet



These reasons indicate that the UD toilets were perceived to be an improvement to the pit toilets they used to have, and that it was better to have some toilet than nothing at all.

The reasons provided by the 42% respondents for not preferring a UD toilet to other types of toilet were the following:

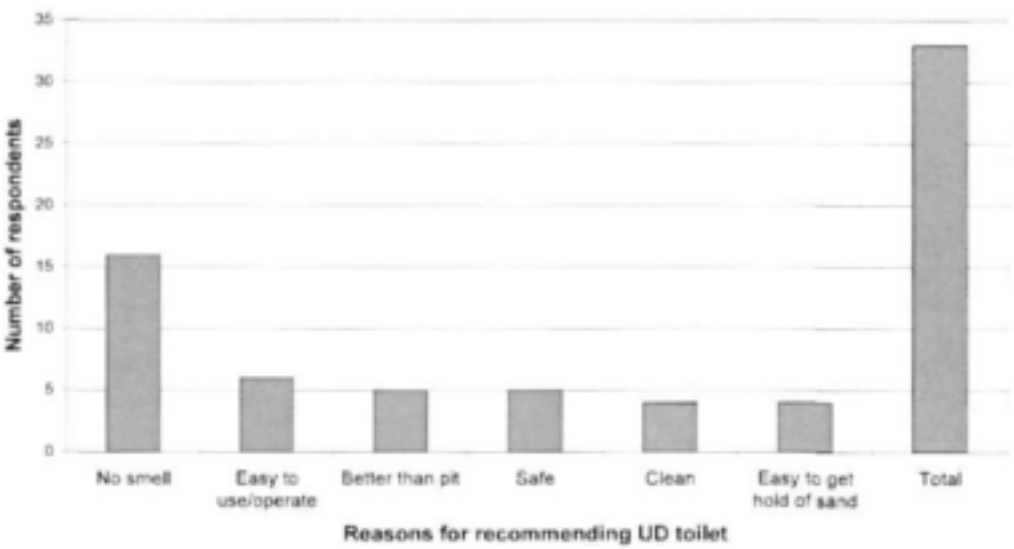
Figure 13: Reasons for not preferring the UD toilet



These reasons indicate that the operation and maintenance of UD toilets were perceived to be difficult and requiring effort. The respondents preferred not to have to make an effort with a toilet.

Only 46% of the respondents said that they would recommend the UD toilet to others for the following reasons:

Figure 14: Reasons for recommending the UD toilet



Other reasons provided were the following:

- It is easy to clean.
- It is free from flies.
- The two vaults can be used interchangeably, no need to dig another pit.
- There is privacy.

The reasons for not recommending the UD toilet to others were the following:

- Because of the emptying of the vault.
- It is difficult and costly to remove and replace the vault covering slab.
- It is difficult to operate and maintain the toilet.

The HSRC research and results confirmed that the respondents did not want to handle human excreta and that they preferred a flush toilet (HSRC Client Report, p 17).

1.3 TRAINING IN THE USE OF UD TOILETS

1.3.1 Training received

Almost all (91%) of the respondents received training in operation and maintenance of the UD toilets. Some respondents also had a poster depicting the activities required for this.

In order to determine who provided the training, and whether the persons responsible were from within or outside the community, the interviewees said the training was conducted by the following:

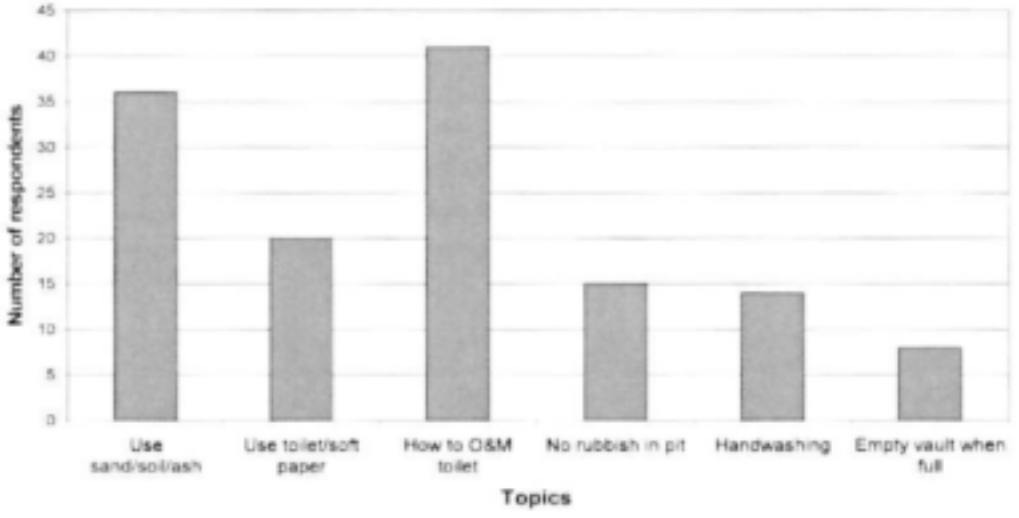
Figure 15: Trainers on O&M of UD toilets in communities

Only 10% of the respondents said that the training was conducted by people from their community, which means that the skills and knowledge of the UD toilets are external to the communities. More than a third (41%) of the respondents did not know who the trainers were and could therefore not contact them to address any problems.

1.3.2 Understanding of the training

The majority (87%) of the respondents replied that the training they received was useful to the household. According to the respondents, the training consisted of the following:

Figure 16: Contents of training



Some respondents said the training also included the following:

- Check vaults and level the heaped faeces inside.
- Keep the toilet clean.
- Moving the pedestal to the other vault when the first one is full.

These responses indicate that the training was comprehensive, covering operation and maintenance, the removal of excreta, as well as hygiene issues.

The HSRC report confirmed that training was conducted but that the users wanted more information and further education on the UD toilet (HSRC Client Report, p 26).

1.4 OPERATION OF THE UD TOILETS

1.4.1 Household use of UD toilet

The data showed that almost everybody in the household, except small children, used the UD toilet. Both women and men used the same toilet.

Most of the children under the age of 10 still used the pit toilets or the veld. They did not use the UD toilet for the following reasons:

- They are too young/small (babies in nappies) to use the UD toilet.
- They are afraid that the children might not use the toilet properly.
- They are afraid that that the children might fall into the vault.
- The seat is too high for the children.

These responses indicate that the UD toilet was perceived as a toilet for adults because it is not easy for children to use the pedestal correctly. The introduction of a "kiddie seat" will be advantageous.

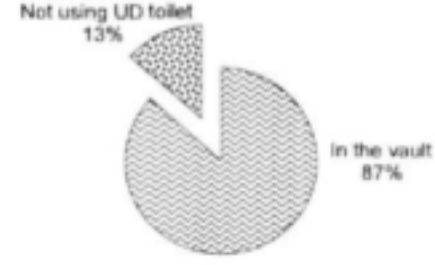
1.4.2 Cleansing material

The respondents were asked where they disposed of the anal cleansing material after they had used the toilet.

The majority (87%) of the respondents said that they deposited the cleansing material in the vault. No separate container was used in the toilet.

A number of households (13%) did not use the UD toilet at all.

Figure 17: Disposal of cleansing material



1.4.3 Operation and maintenance of the UD toilet

The respondents were asked what they used to cover the faeces after using the UD toilet. The majority (81%) covered the faeces with sand and 4% used ash.

Almost half the respondents (48%) said that the UD toilet was easy to operate and maintain (including excreta removal). The problems mentioned were the following:

- It is difficult and costly to remove and replace the covering slab when emptying the vault / unsealing the covering slab.
- Emptying the contents of the vault is not nice.
- Nobody wants to remove the excreta.
- Looking directly at faecal matter is not nice.

The HSRC report mentions that the users found the operation and maintenance of the UD toilet difficult, complicated and too much work (HSRC Client Report, p 28).

1.5 USE OF EXCRETA

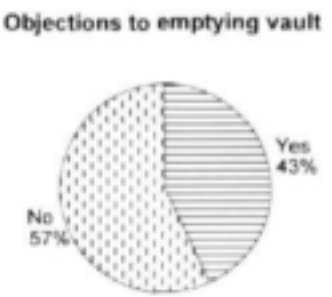
1.5.1 Disposal of urine

All (100%) the households disposed of the urine in a soak pit that was constructed with the UD toilet. The use of urine was not advocated by eThekwini Municipality.

1.5.2 Emptying of the vault

The respondents were asked whether they had objections to emptying the vault and disposing of the excreta themselves.

Figure 18: Objections



More than half (57%) of the respondents said that they did not have objections to emptying the vaults, while 43% said that they did have ob-jections.

This indicates that the UD toilets have not been fully accepted by the users.

The respondents who did have objections to emptying the vault and disposing of the excreta themselves, provided the following reasons:

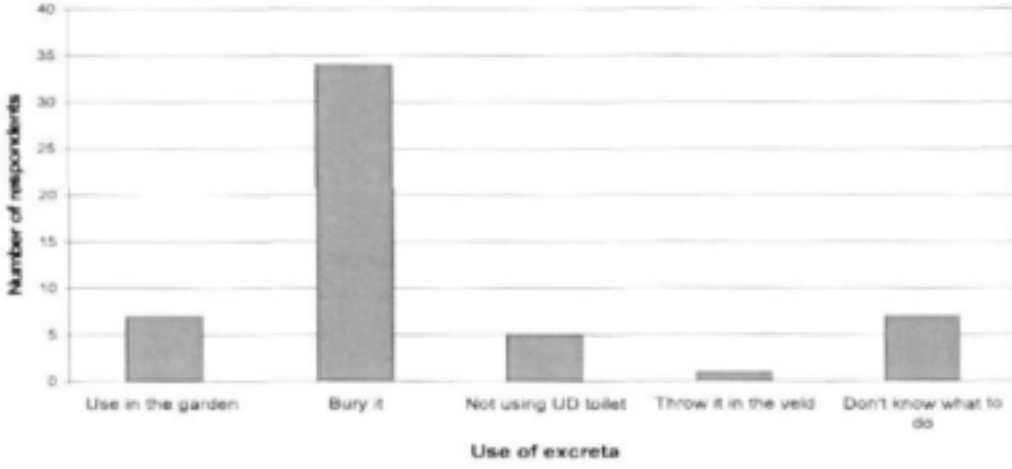
- We don't want to work with or handle faeces or rubbish (unpleasant).
- Nobody is prepared to empty the vault.
- It is difficult and costly to remove and replace the covering slab at the back when emptying the vault.
- The household will ask someone else to empty the vault on their behalf.
- They do not know how to open the covering slab.

Because the UD toilets had double vaults, only 8% of the respondents said that they had needed to empty the vaults since they started using the UD toilet. The covers of these specific vaults were not resealed correctly and rainwater entered the vaults, creating a problem. The majority (92%) had not needed to empty the vaults yet. This indicates the possibility that, once the majority of the people have had to empty the vaults, acceptance of the technology will diminish.

1.5.3 Use of excreta

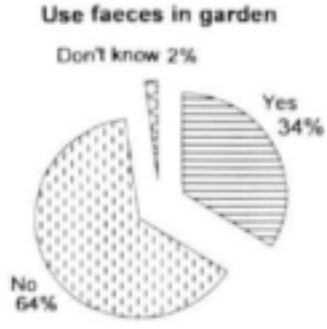
Even though eThekwini Municipality did not advocate the use of human excreta (urine and dry faeces) from the UD toilet, a question was asked whether they were aware of the fertiliser value of human excreta and in what way they used, or might use, the contents of the vault. They replied in the following manner:

Figure 19: Use of excreta



More than two thirds (75%) of the respondents were aware of the fertiliser value of faeces, but most (79%) were not aware of the fertiliser value of urine. Almost two thirds (64%) were not willing to use faeces in their gardens, while 34% said they would use them.

Figure 20: Use of faeces in gardens



The reasons provided by the households for not wanting to use faeces in their gardens, were the following:

- It is dirty.
- Human faeces are not meant to be used for fertilising purposes.
- It is a bad thing / it is not the right thing to do / it is not good.
- One cannot eat vegetables fertilised by human excreta.
- It is an unusual and unaccepted practice to use human faeces for fertilising purposes.
- One cannot use faeces in the vegetable garden.
- It is smelly when it rains.

1.6 COLLECTION/DISPOSAL SERVICE

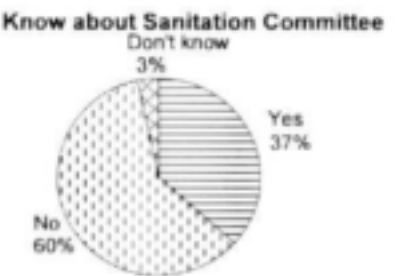
This section of the interview schedule was omitted on request of eThekwini Municipality.

1.7 INSTITUTIONAL CAPACITY IN THE COMMUNITY

1.7.1 Sanitation Committee

When the respondents were asked about the existence of a Sanitation Committee in their community, 60% said that they did not have such an institution any longer. However, 37% said they were aware of a Sanitation Committee in their communities and also knew the names and contact details of their committee member.

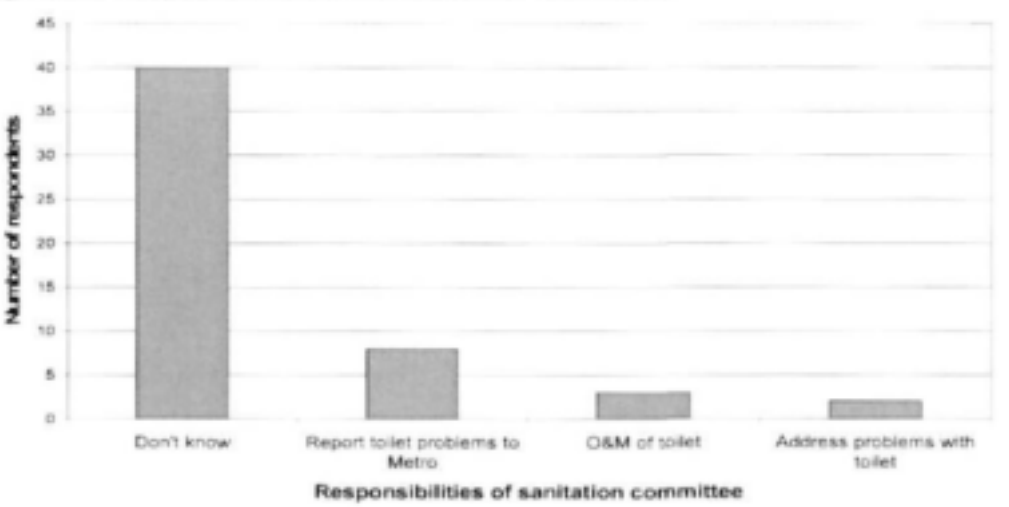
Figure 21: Existing Sanitation Committee



1.7.2 Responsibilities of Sanitation Committee

Those respondents who knew about the Sanitation Committee perceived the following tasks to be the responsibilities of the committee in their communities:

Figure 22: Responsibilities of the Sanitation Committee



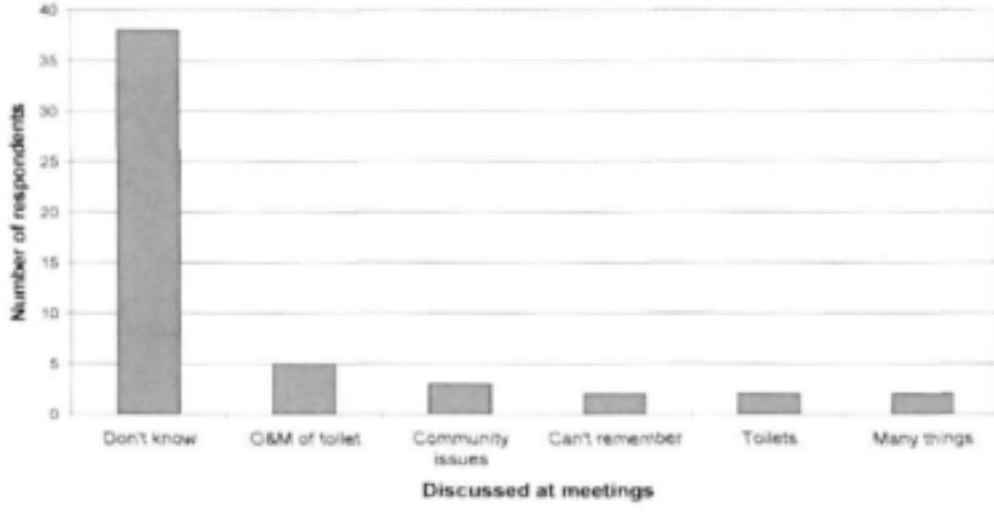
These responses indicate that some of the respondents still viewed the operation and maintenance of the UD toilets to be outside the responsibility of the households.

1.7.3 Sanitation Committee Meetings

A third (36%) of the respondents replied that they attended the Sanitation Committees' meetings.

When asked what was discussed at these meetings, they mentioned the following:

Figure 23: Discussion at committee meetings



Both men and women attended these meetings. Only a few respondents (14%) could remember what was discussed at the meetings. The "Don't know"-response was given by the respondents who did not attend the meetings.

1.7.4 Environmental Health Officer (EHO)

Almost all the respondents (91%) said that they did not have an EHO in their communities. They also did not know any names or where to contact an EHO.

Those who knew (9%) about an EHO in their communities also knew their names and where to contact them.

1.7.5 Community Health Workers

More than two thirds of the respondents (78%) were not aware that there were community health workers in their area. Only 22% said that they knew about community health workers.

The respondents who knew about the community health workers also knew their names and how to contact them.

2. PHYSICAL CONDITION OF THE UD TOILETS

The general condition of the UD toilets that were being used in the target communities was good to excellent. There were a few construction and maintenance problems, but not serious neglect on the part of the builders or household members. The toilets were kept clean and hygienic.

However, in some households the toilets were very dirty and smelly. The construction was not executed properly and the household decided not to use or maintain the toilet. Some toilets were not used as toilets at all but as storage places for building material or other valuables because the toilet was the only place that could be locked. Some toilets were also used as animal pens or hen houses. The HSRC report also referred to this (HSRC Client Report, p38).

The following photographs depict the physical condition of the UD toilets in the target communities:

Umnini

eHlanzeni

Figure 24: Photographs of UD toilets

3. CONCLUSIONS

The following conclusions were drawn from the data:

- **Approaches and coordination**: Sanitation projects in communities are usually *ad hoc* and short-term. A major strength with sanitation projects in the target communities in KwaZulu-Natal was that they were implemented as part of a water and sanitation delivery strategy by eThekwini municipality. Not only did this result in eliminating the duplication of effort and inefficient allocation of scarce resources, but it also effected an improvement in the welfare of the users. In addition, the target communities were not confused by different and often conflicting agency policies and methodologies (for example in relation to contributions and financing the users did not need to contribute at all).

- **Communication and advocacy**: The target communities in KwaZulu-Natal were unaware or ill informed about local authority development plans and programmes. Therefore, it is difficult for communities to make local authorities accountable to them when they know so little about their work and plans. There is an urgent need to improve communication channels.

  There is also a lack of knowledge regarding community structures, such as the continued existence of a Sanitation Committee and the availability of an EHO or community health workers.

- **Roles and responsibilities**: There is a tendency for communities in KwaZulu-Natal to assume that the provision of sanitation services is solely the responsibility of local authorities. They are still under the impression that the local authority will provide operation and maintenance of the toilets, especially regarding the removal of excreta.

- **Training**: Training in the operation and maintenance of the UD toilets were successful. The users said that they would not have been capable of using the UD toilets correctly without the training. However, the health and hygiene training needs to be refreshed as very few respondents mentioned these aspects as part of the training they received.

- **UD sanitation**: The research shows that the UD toilets were not very popular amongst some users in KwaZulu-Natal, mainly because the removal and handling of human faeces were unacceptable to them. Those who liked the toilet mentioned that there is no smell and that it is safe and sturdy and better than having no toilet at all. Those who did not like the UD toilets, would have preferred to have a flush toilet, and some also said they would rather use a pit toilet. This indicates that UD sanitation technology has not been fully accepted.

- **Operation and maintenance**: The UD toilets in the target communities in KwaZulu-Natal are operated and maintained correctly in most cases. Some respondents did not use the UD toilet at all because they found it too difficult and complicated.

- **Health and hygiene**: eThekwini Municipality accepts the importance of health and hygiene promotion and conducts research to improve the situation. However, refresher training is necessary to assist behaviour change and to improve the information and knowledge base of the users. There is also a need to link health and hygiene messages very closely with the local cultural beliefs and practices of the communities.

- **Disposal/collection system**: This issue was not discussed with the target communities.

- **Use of the excreta**: Even though eThekwini Municipality did not advocate use of the products from UD toilets, most respondents were aware of the fertiliser value of faeces. However, the majority was not willing to use human excreta at all. Those who had no objections to using human excreta were only willing to use faeces in their gardens, but not urine.

4. REFERENCES

Human Sciences Research Council (undated). *Rural water and education programme: Acceptability of the new system: Final report*.

ANNEXURE F

RESEARCH FINDINGS ON OWNERSHIP AND USE OF URINE-DIVERSION SANITATION SYSTEMS

North West Province

CONTENTS

List of figures

1. RESEARCH FINDINGS

The results from the interviews and completed questionnaires are presented below. Conclusions are made in Section 3.

A total of 29 interview schedules were completed in the North West Province (a sample of approximately 70% of the total UD toilets in the target communities), covering 35 interviewees and 186 household members. The gender distribution of all the respondents was 29% (10) male and 71% (25) female. This is due to the fact that women were readily available and at home in the North West Province, while the men were away at work in the nearby Taung and Mafikeng or in the cities when the research was conducted. 10% of the households were also female headed.

The responses originated from the following areas:

AREA	TOWN	INTERVIEW SCHEDULES COMPLETED	NUMBER OF INTERVIEWEES
Taung	Matolong	2	3
	Tlapeng	1	1
	Motsweding	6	7
	Lower Majeakgoro	8	8
	Sekhing	4	5
	Kokomeng	5	5
	Khudutlou	2	2

Figure 1: Composition of target group

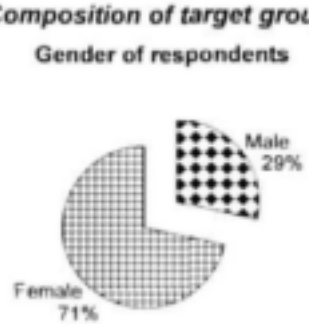
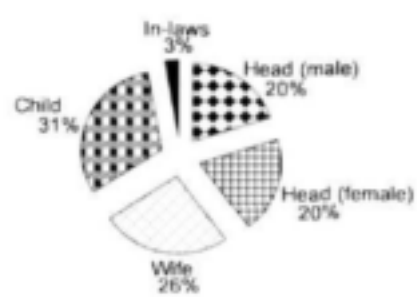


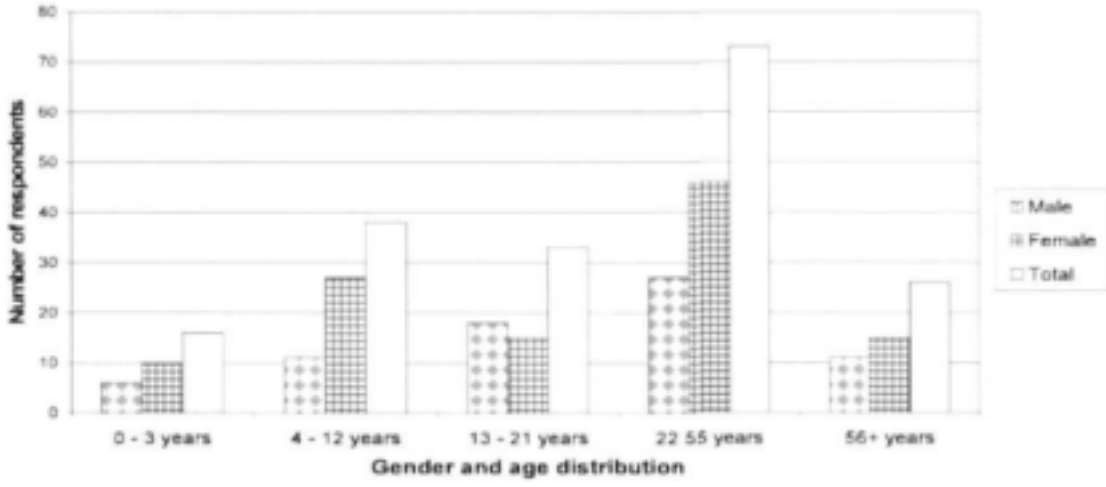
Figure 2: Position in household



1.1 HOUSEHOLD INFORMATION

The gender distribution of the household members that were interviewed is as follows:

Figure 3: Gender of household members

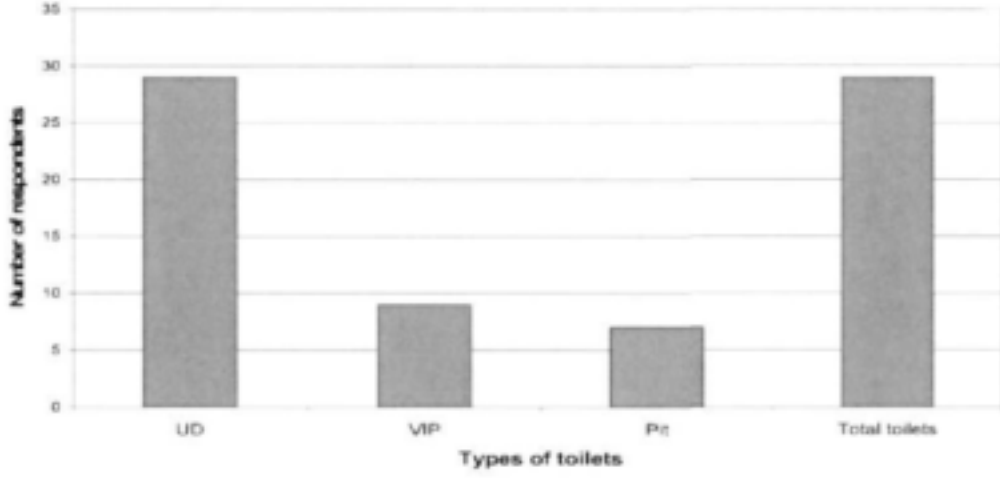


1.2 SANITATION

1.2.1 Types of toilets

The UD toilet was not the only toilet found in the target communities in the North West Province. The respondents all had UD toilets but seven (7) also had pit toilets and nine (9) had VIP toilets in their yards.

Figure 4: Types of toilets

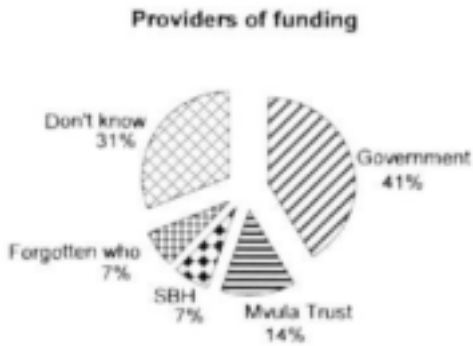


All the UD toilets were built with single vaults and had been used by the households for longer than a year.

1.2.2 Funding for the UD toilet

A question was posed to the respondents regarding the origins of funding for the UD toilets in their communities.

Figure 5: Funding of UD toilet



All the respondents knew that the construction of the UD toilets were funded, but only 41% knew the correct source. Other sources mentioned were the implementing agents or builders of the UD toilet.

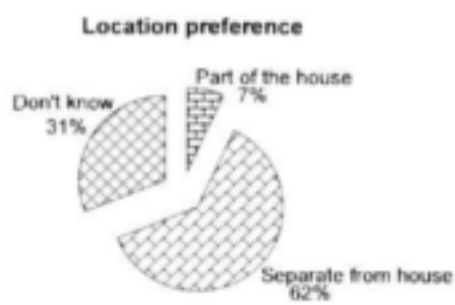
1.2.3 Household contribution towards UD toilet

The households were asked whether they contributed towards the construction of their UD toilets. All the respondents said that they contributed to the toilet by providing materials (65%) and sweat equity (35%). No one contributed in monetary form.

1.2.4 Household preference

The respondents were asked whether they wanted the UD toilet to be part of their houses, with an inside door, now that they had been using it for a while.

Figure 6: Location preference



Almost two thirds (62%) of the respondents preferred the UD toilet to be separate from the house. The main reason for this reply was that they were used to toilets being separate from houses.

Only 7% preferred the toilet to be part of the house, while a third of the respondents (31%) did not know whether they wanted the UD toilet as part of their houses or not.

1.2.5 Perceptions of UD toilet

When the respondents were asked whether they liked the UD toilet or not, almost two thirds of the respondents (65%) said they liked the UD toilet and 14% did not like it. However, 21% of the respondents' UD toilets were unused.

Figure 7: Like/dislike UD toilet

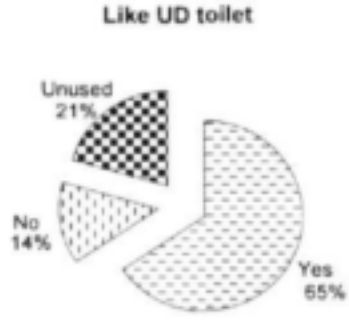
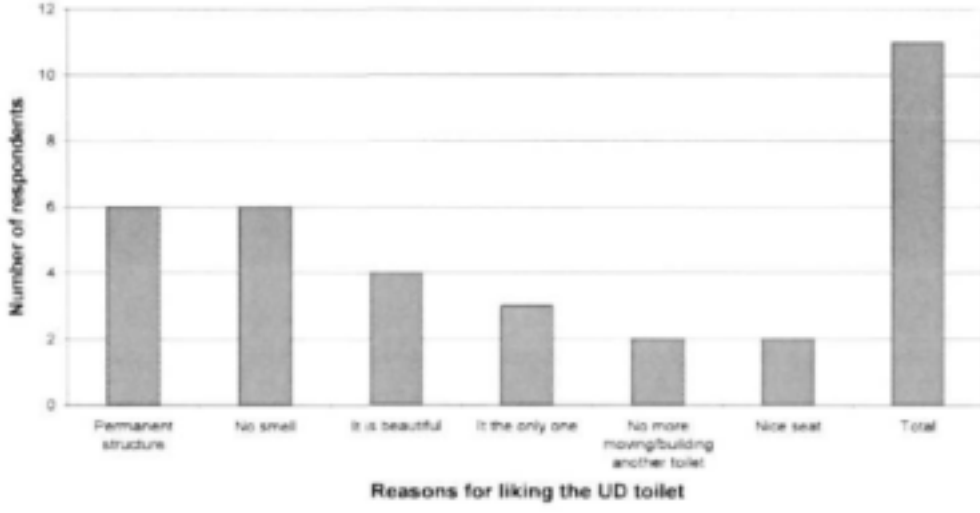


Figure 8: Reasons for liking the UD toilet



Other reasons provided were the following:

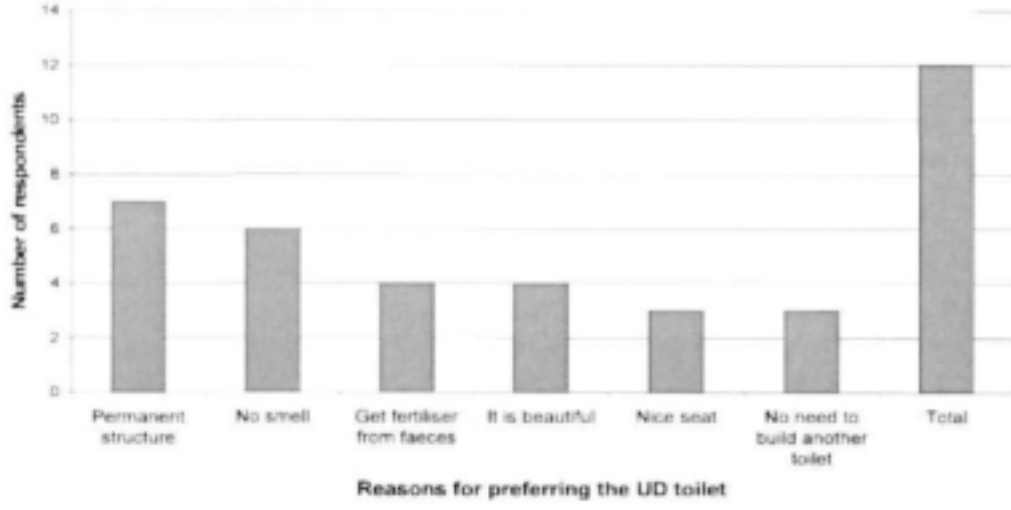
- Household will empty dry faeces, which is not as bad as wet one (no smell).
- The toilet has a hand washing facility erected outside the toilet.
- UD toilet is better quality than VIP and pit toilets.
- It is different from a pit or VIP toilet.
- It takes longer to fill up; it takes more than 5 years before it needed to be emptied.
- Faeces do not stay long in the pit; vault is emptied at various intervals.
- It is clean.
- The toilet is made of bricks and has a covering slab made of cement.
- There is enough space inside.

The reasons the respondents gave for not liking the UD toilet were the following:

- The fact that the household has to empty the vault when it's full.
- It is not a VIP, it requires a lot of effort to operate it.
- The smell of faeces goes through the entire house.
- There is a strong wind coming from the vent pipe.

More than two thirds (67%) of the respondents said that they preferred a UD toilet to other types for the following reasons:

Figure 9: Reasons for preferring the UD toilet



The reasons provided for not preferring a UD toilet to other types were the following:

- Emptying the contents of the vault (25%).
- It is not a VIP, it requires a lot of effort to operate it (13%).
- Shallow pit (2%).
- The smell of faeces through the whole house (2%).

The same (67%) respondents also said that they would recommend the UD toilet to others for the same reasons as provided for preferring the UD toilet.

1.3 TRAINING IN THE USE OF UD TOILETS

1.3.1 Training received

Most (82%) of the respondents received training in the operation and maintenance of the UD toilets.

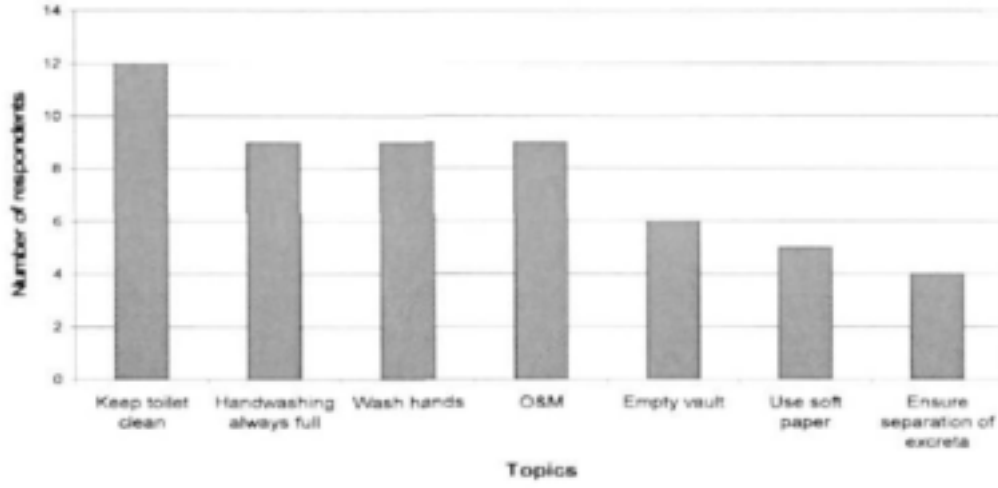
The respondents said the training was conducted by the following:

Figure 10: Trainers on O&M

1.3.2 Understanding of the training

All the respondents who received training replied that the training they received was useful to the household. According to the respondents, the training consisted of the following:

Figure 11: Contents of training



Some respondents said the training also included the following:

- Always keep the toilet lid closed.
- Empty the vault in the garden.
- Use ash after a while.
- Fly screen should not be removed.

These responses indicate that the training focused on the hygiene aspects but also included operation and maintenance. The operation and maintenance training was not sufficient as most of the respondents did not know about using ash after each defecation.

1.4 OPERATION OF THE UD TOILET

1.4.1 Household use of UD toilet

The data showed that in the households that used the UD toilet, almost everybody in the household, except small children, used it. Both women and men used the same toilet. The children younger than 10 years old still used the VIP or pit toilets, or the veld. Most of the children under the age of 10 did not use the UD toilet for the following reasons:

- They are too young to use the toilet properly (30%).
- They are afraid the children might fall into the pit (2%).
- They don't know how to use it properly; they might defecate in the urine chamber (1%).

1.4.2 Cleansing material

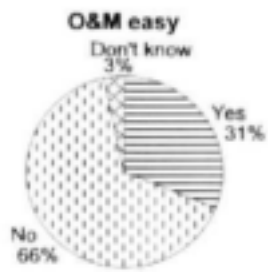
The respondents were asked where they disposed of the anal cleansing material after they used the UD toilet.

The majority (93%) of the respondents said that they deposited the cleansing material in the vault. Eight (8) respondents indicated that they did not use the UD toilet at all.

1.4.3 Operation and maintenance of the UD toilet

The respondents were asked what they used to cover the faeces after using the UD toilet. All the respondents (100%) who used the UD toilet said they did not cover the faeces with anything after using the UD toilet. One (1) respondent said they used a white powder to cover the faeces.

Figure 12: Operation and maintenance of UD toilet



Two thirds (66%) of the respondents who used the UD toilet said that the UD toilet was not easy to operate and maintain (including excreta removal).

The problems mentioned were the following:

- Emptying the contents of the vault is difficult (45%).
- It is unpleasant to handle human excreta (20%).
- It is difficult and unpleasant to rake wet faeces (smelly), as the pit is deeper than 1m (1%).
- The faeces will be smelly when they empty the vault (1%).

1.5 USE OF EXCRETA

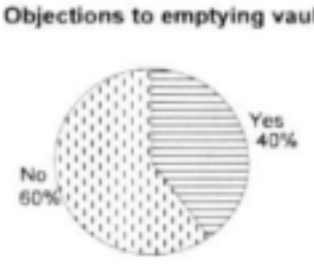
1.5.1 Disposal of urine

All the households (100%) dispose of the urine in soak pits that were constructed with the UD toilets.

1.5.2 Emptying of the vault

The respondents were asked whether they had objections to emptying the vault and disposing of the excreta themselves.

Figure 13: Objections to emptying vault

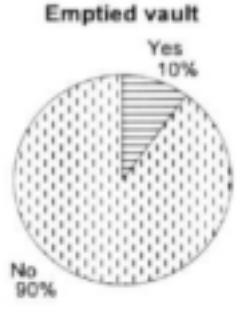


Almost two thirds (60%) said that they had no objections to emptying the vault. The fact that 40% of the households had objections to emptying the vaults indicates that the technology was not fully accepted in the communities.

The respondents, who did have objections to emptying the vault and disposing of the excreta themselves, provided the following reasons:

- The household will hire someone to empty the vault (50%).
- It is a difficult task (these household did not use the UD toilet – 38%).
- It is bad to handle human faeces (12%).

Figure 14: Emptied vault

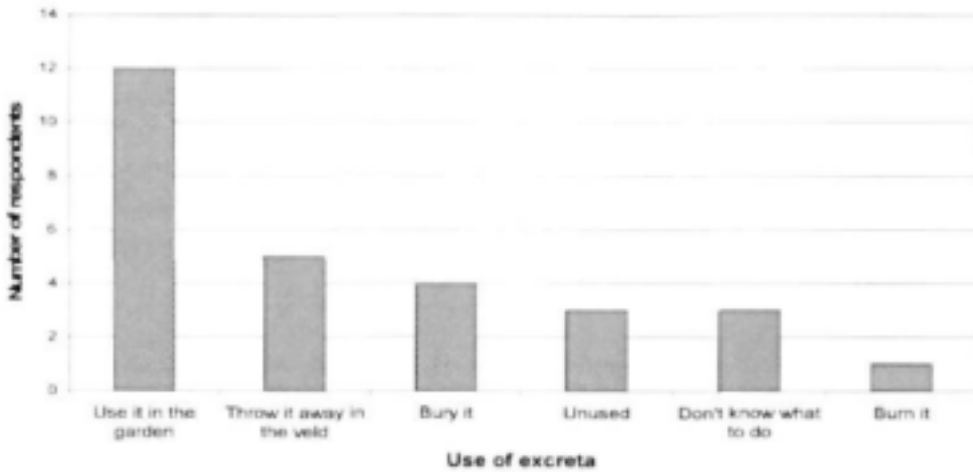


The majority (90%) of the respondents did not need to empty the vault since they started using their UD toilets. Only two (2) households had needed to empty the vaults.

1.5.3 Use of excreta

When asked in what way the respondents use or will use the contents of the vault, they replied in the following manner:

Figure 15: Use of excreta



Almost all (93%) the respondents were aware of the fertiliser value of faeces but only 14% was aware of the fertiliser value of urine. Just more than half (55%) was willing to use the excreta (mainly faeces) in their gardens. The reasons provided by the households for not wanting to use the excreta in their gardens, were the following:

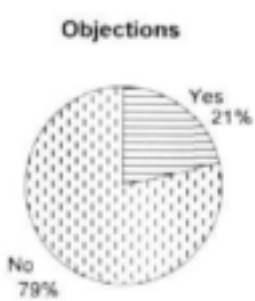
- It is unhealthy to use human faeces in the vegetable garden - not good for human consumption (27%).
- Urine is a waste, it smells and cannot be used as a fertiliser (24%).
- Lack of knowledge on the usefulness of urine (20%).
- Urine is harmful for agricultural production/plants (20%).

1.6 COLLECTION/DISPOSAL SERVICE

1.6.1 Objections to a collection/disposal service

The respondents were asked if they wanted an excreta collection/disposal service for the excreta to be established.

Figure 16: Objections

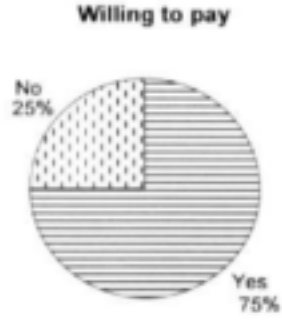


Most (79%) of the respondents did not have any objections to the establishment of a collection/disposal service, while 21% said they did not want such a service to be established.

1.6.2 Willingness to pay for collection/disposal service

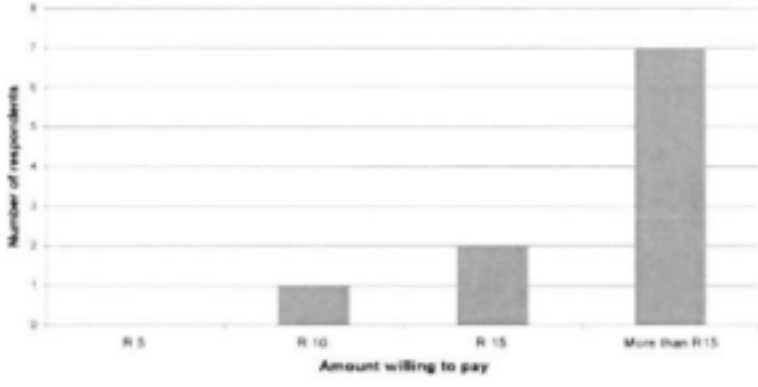
When the respondents were asked whether they were willing to pay for a collection/disposal service, the majority (75%) of the respondents said that they would gladly pay for such a service.

Figure 17: Willingness to pay for service



Those (75%) who were willing to pay said they would pay the following amounts:

Figure 18: Amount willing to pay for service



The majority of those who were willing to pay for a collection/disposal service were willing to pay more than R 15-00. This indicates again that the UD users were not willing to handle the excreta themselves and would rather have it disposed of by someone else.

1.6.3 Management of the collection/ disposal service

The respondents were asked who they thought should be responsible for managing the collection/disposal service. They replied as follows:

Figure 19: Responsibility for excreta disposal

Almost half of the respondents (43%) said that the local municipality should be responsible for managing the removal of excreta. Only 18% said people in the community should be responsible and 32% said it was the responsibility of the households.

This is another indication that the UD users did not want to handle excreta and placed the responsibility with the local municipality, much in the same way as the respondents thought water-borne sanitation is handled.

1.7 INSTITUTIONAL CAPACITY IN THE COMMUNITY

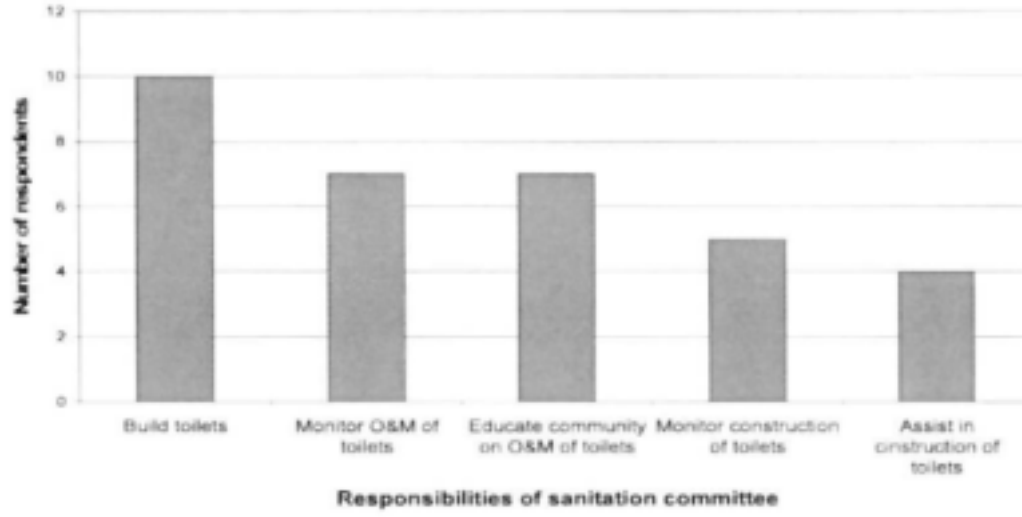
1.7.1 Sanitation Committee

When the respondents were asked about the existence of a Sanitation Committee in their community, the majority (90%) of them said that they had such an organisation in their respective communities and also knew the names and contact details of the sanitation committee members.

1.7.2 Responsibilities of Sanitation Committee

Those respondents who knew about the sanitation committee perceived the following tasks to be the responsibilities of the sanitation committee in their communities:

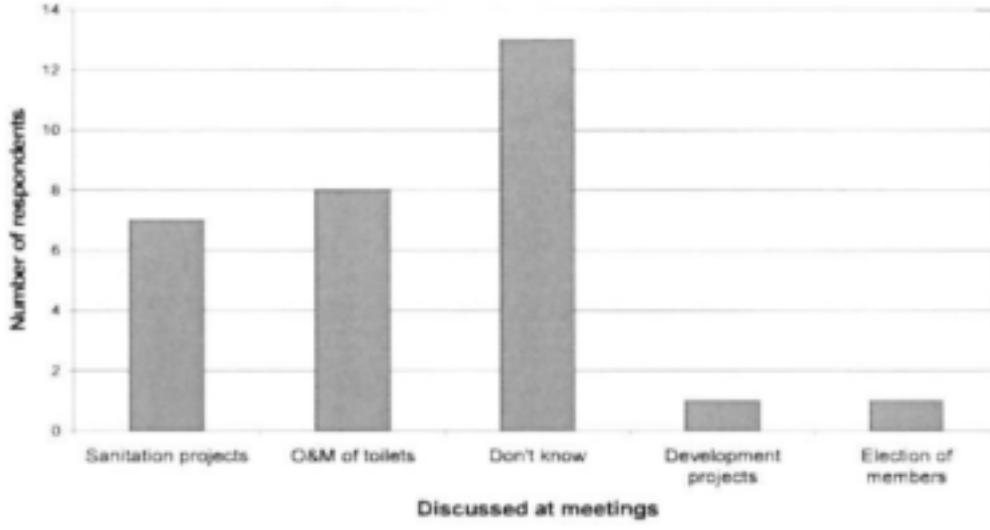
Figure 20: Responsibilities of Sanitation Committee



1.7.3 Sanitation Committee Meetings

The majority (72%) of the respondents replied that they attended the Sanitation Committee meetings. When asked what was discussed at these meetings, they mentioned the following:

Figure 21: Discussion at committee meetings



Both men and women attended these meetings. The "don't know"-response was given by the respondents who did not attend these meetings. Eighteen percent of the respondents did not use their UD toilets.

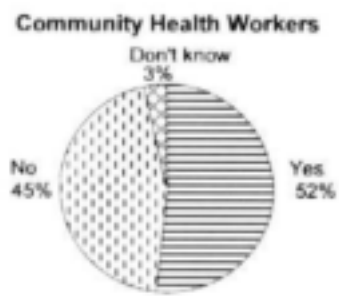
1.7.4 Environmental Health Officer (EHO)

All the respondents (100%) said that they did not have an EHO in their communities. They also did not know any names or where to contact an EHO.

1.7.5 Community Health Workers

More than half (52%) of the respondents were aware that there were community health workers in their communities. Almost half (45%) said that they were not aware of this.

Figure 22: Existing Community Health Workers



The respondents who knew about the community health workers also knew their names and how and where to contact them.

2. PHYSICAL CONDITIONS OF THE UD TOILETS

The following photographs depict the physical condition of the UD toilets in the target communities:

Figure 23: Photographs of UD toilets

In most cases the physical conditions of the UD toilets in use were good. The toilets were kept clean and hygienic.

In some instances, however, the toilets were dirty and smelly. The construction was not executed properly and the household decided not to use or maintain the toilet. A few UD toilets were also converted to pit toilets by breaking away the urine receptacle in the pedestal.

Some toilets were not used as toilets but as storage places for building material or other valuables because the toilet was the only place that could be locked.

3. CONCLUSIONS

The conclusions below are drawn from the data, as well as from the impressions and perceptions of the researchers.

- **Approaches and coordination**: Sanitation projects in communities are usually *ad hoc* and short-term. A major problem with sanitation projects in the target communities in North West Province was that they were implemented by a number of implementing agents. Not only did this result in duplication of effort and inefficient allocation of scarce resources, but it also produced a lack of knowledge and incorrect use of the technology.

- **Communication and advocacy**: The communities in North West were unaware or ill informed about local authority development plans and programmes. Therefore, it is difficult for communities to make local authorities accountable to them when they know so little about their work and plans. There is an urgent need to improve such structures, attitudes and ways of working.

  There is also a lack of knowledge regarding community structures, such as the continued existence of a Sanitation Committee and the availability of an EHO.

- **Roles and responsibilities**: There is a tendency for communities in North West to assume that the provision of sanitation services is solely the responsibility of local authorities. Only in two of the target communities did the respondents take responsibility for the improvement of their own villages.

- **Capacity and skills building**: The research shows that skills building in the communities in North West was relatively successful as most of the UD toilets were built by local builders with the assistance of community members.

- **Training**: The training in operation and maintenance of the UD toilets was not successful. The users said that they would not have been capable of using the UD toilet correctly without the training. However, the overall use of the urine diversion toilet demonstrated that the training was insufficient, as some users altered the toilets to become pit toilets and all the users did not use ash, sand or soil after defecation. The health and hygiene training needs to be refreshed as very few respondents mentioned health and hygiene aspects as part of the training they received.

- **UD sanitation**: The research shows that the UD toilets are not popular amongst most users in North West for various reasons. The main reasons were that they did not want to handle faeces and preferred to use the UD toilet as a pit toilet instead.

- **Operation and maintenance**: The UD toilets in the communities in North West were operated and maintained incorrectly in most cases.

- **Health and hygiene**: Most local authorities accept the importance of health and hygiene promotion, but such programme components have still not been given the emphasis, careful design (including objectives, indicators and monitoring and evaluation procedures) and budget that are required to be effective. Refresher health and hygiene training is necessary to assist behaviour change. There is

also a need to link health and hygiene messages very closely with the local cultural beliefs and practices of the communities in North West.

- **Use of the excreta**: Most respondents were aware of the fertiliser value of faeces but not of urine. Some were willing to use faeces in their gardens but not urine. In most cases, the urine was piped to a soakaway.

Other related WRC reports available:

Handbook to guide communities in the choice of sanitation systems

Bernhardt Dunstan & Associates

It is estimated that South Africa currently has 18 million people who lack access to adequate sanitation. In order to ensure that the sanitation improvement programme is a success, it is essential to provide sanitation systems that are affordable, appropriate and acceptable to the user communities. The main aim of this study was to evaluate on-site sanitation systems from a socio-economic perspective with special reference to affordability, appropriateness and social acceptability. The study was undertaken in three case study areas, namely, Soshanguve TT, Ivory Park and Ga-Mmotla.
The research findings for the three areas were:

- In Soshanguve TT, most members of the community were dissatisfied with the low-flush volume on-site sanitation systems because of high operating costs and inconvenience associated with the use of these systems.
- In Ivory Park, most of the on-site sanitation systems were malfunctioning due to poor operation and maintenance. The end-users were not paying for these sanitation systems because they considered them to be inferior and unacceptable.
- In Ga-Mmotla, most households were using unimproved pit latrines. The community was keen to get ventilated improved pit (VIP) toilets which would help eliminate flies and bad smells which are normally associated with the use of unimproved pit latrines.

The study concluded that in all three case study areas, communities were dissatisfied with their on-site sanitation systems. Women were unhappy about being excluded from decision-making on the selection of sanitation technologies, because as the main users, they are better qualified to select a sanitation system that could be operated and maintained by the users. The study has recommended that both men and women must be empowered so that they can make informed choices and be able to base the selection on affordability and ability to operate and maintain. Local authorities should be assisted to utilise computer-based financial modelling programs so that they can calculate capital and operating costs and assess the affordability of any sanitation systems to both the end-users and local authorities.

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