

## AN INVESTIGATION INTO THE PERCEIVED SANITATION CHALLENGES IN THE EASTERN CAPE RURAL COMMUNITIES

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### ABSTRACT

*There is a dearth of information on studies that have sought to examine qualitatively the sanitation challenges that rural communities experience. In this regard, an exploratory qualitative study was conducted to determine the perceived structural, economic, educational, social and technological sanitation challenges in the rural communities of the Eastern Cape (EC). A purposive sample of 122 officials was drawn from the identified EC sanitation stakeholder organisations; of these 74 were male and 48 were female. The 122 participants were divided into 15 focus groups (M = 8 participants) by organisation and randomly assigned to five trained moderators for interviews - four groups with the Provincial Sanitation Task Team (PSTT), six with the District Municipalities and three with the Department of Water Affairs and Forestry (DWAf), one with the Mvula Trust and one with the Rural Support Services (RSS). The findings show that rural sanitation is a complex issue that is affected by a wide range of challenges. Structural challenges include lack of physical, natural, human and organisational resources. Lack of funding was identified as the main economic challenge. Educational challenges include lack of advocacy, training, access to information and information exchange with local people. Inadequate community participation was identified as a social challenge. Lack of cultural flexibility, awareness and sensitivity in the development of technologies that recognise, respect and value culture constitute the technological challenge. The results of the study provide a knowledge base on which strategies for promoting good sanitation practices at community level can be built.*

### OPSOMMING

*Kwalitatiewe navorsing is gedoen om die strukturele, ekonomiese, opvoedkundige, sosiale en tegnologiese uitdagings wat landelike gemeenskappe van die Oos-Kaap met betrekking tot sanitasie in die gesig staar, te ondersoek. 'n Doelgerigte steekproef van 122 beamptes is saamgestel om organisasies wat betrokke is by sanitasie-kwessies in die provinsie te verteenwoordig. Van bogenoemde beamptes was 74 manlik en 48 vroulik. Die 122 beamptes is volgens organisasie in 15 fokusgroepe (Gemiddeld = agt deelnemers) ingedeel, en lukraak toegewys aan vyf opgeleide onderhoudvoerders - vier groepe van die Provincial Sanitation Task Team, ses van distriksmunisipaliteite en drie van die Departement van Waterwese, een met Mvula Trust en een met Rural Support Services. Die resultate dui daarop dat sanitasie in landelike gebiede 'n komplekse kwessie is en met 'n wye verskeidenheid uitdagings gepaardgaan. Strukturele uitdagings sluit in die gebrek aan fisiese, natuur-, menslike en organisatoriese hulpbronne. Die gebrek aan befondsing is as die mees prominente ekonomiese uitdaging geïdentifiseer. Opvoedkundige uitdagings sluit in die tekort aan voorspraak, opleiding, toegang tot informasie en die uitruil van inligting met die plaaslike gemeenskappe. Gebrekkige gemeenskapsdeelname is as 'n sosiale uitdaging geïdentifiseer. Die gebrek aan kulturele buigsaamheid, bewustheid en sensitiwiteit in tegnologiese ontwikkeling om erkenning, respek en agting aan (plaaslike) kultuur te gee, bied 'n tegnologiese uitdaging. Die bevindinge van hierdie studie verskaf 'n kennisbasis waarop strategieë vir die bevordering van goeie sanitasiepraktyke op gemeenskapsvlak gebou kan word.*

## INTRODUCTION

Sanitation refers to the principles and practices relating to the collection, removal, or disposal of human excreta, refuse and waste water, as they impact upon users, operators and the environment (Department of Water Affairs and Forestry (DWAF), 1996:3). Sanitation improvements have increased over the years in the world. Since 1990 an estimated 747 million people have gained access to sanitation facilities – equivalent to 205 000 people every day (Water Supply and Sanitation Collaborative Council (WSSCC) and World Health Organization (WHO), 2005:1). In Africa, about 60% of the population is said to have adequate sanitation coverage, ranging from 45% in the rural areas to 84% in the urban areas (Tumwine, Thomson, Katui-Katua, Mujwanhuzi, Johnstone & Porras, 2003:108). Similarly, sanitation conditions in South Africa have vastly improved since 1994 due to various policies and legislation that have been established to create an enabling environment for the delivery of water supply and sanitation to all (DWAF, 1996:8; DWAF, 2001:5; DWAF, 2002b:11). In 1994 it was estimated that approximately 21 million people in South Africa lacked access to adequate sanitation services (DWAF, 1994:9). This figure went down to 18 million in 2001 (DWAF, 2001:9). While this is an impressive achievement, there are people who still do not have adequate sanitation internationally, continentally, nationally and provincially. About 1089 million rural and 1085 million urban dwellers will need to gain access to sanitation in the coming 15 years if the 2015 Millennium Development Goal of halving the proportion of people without access to adequate sanitation is to be reached (WSSCC & WHO, 2005:1). In Latin America and the Caribbean 51% of the population have no access to sewage services with the majority being those people residing in rural areas (Inter-American Development Bank, 2003:1). This percentage represents approximately 250 million people. Approximately three billion people are without adequate sanitation in Africa (DWAF, 2002b:1; Stephen, 2003:48; Tladi, Baloyi, Schreiber-Kaya, Mathekgana, Mangold, De Klerk & Winde, 2002:17). An estimated 83% of the people in the Amathole District Municipality (ADM) of the Eastern Cape (EC) have no adequate sanitation (*Daily Dispatch*, 2005:6). This is so in spite of the fact that the Constitution (1996:8) guarantees all South Africans the right to adequate sanitation. Obviously this poses enormous sanitation challenges, especially

among rural communities. Rural communities, by definition, are those communities that are without access to ordinary public services such as water and sanitation and are without a formal local authority (Alcock, 1999:27). These communities are predominant in the EC and most of them live below the poverty datum line. There is a dearth of information on studies that have sought to examine qualitatively the sanitation challenges that rural communities experience, especially in the EC. An increasing volume of literature suggests the need to conduct qualitative research in rural areas in view of the magnitude of the sanitation problem in these areas (United Nations Children's Fund (UNICEF), 1997:2). Only when the sanitation challenges have been qualified can appropriate measures be taken to improve the sanitation status of rural communities. In-depth understanding of rural sanitation challenges is essential for the protection of public health, the improvement of the quality of life for rural residents and the development of strong local economies. Against this background, the purpose of this article is to specify key challenges that must be addressed for sanitation improvements in rural communities. This article is meant to be an informational tool, one that helps development planners understand and confront the sanitation problems that beset rural communities. Key challenges discussed in the forthcoming sections of the article have been categorised into four mutually inclusive categories, namely: structural, economic, educational, social and technological challenges.

## LITERATURE REVIEW

The literature review focuses on sanitation challenges among rural communities and their impact on health. Although the challenges discussed are all interrelated, they will be considered under five categories, namely: structural, economic, educational, social and technological challenges. Despite regional differences, rural communities generally experience the following sanitation challenges:

### Structural challenges

Structural challenges refer to resources needed by rural communities to enjoy adequate sanitation. Most of the structural sanitation challenges in rural communities are attributed to the characteristics that set rural areas apart from the urban sector. Generally, rural com-

munities are characterised by inferior infrastructure, poor site conditions, unreliable water availability and high population density (Alcock, 1999:28). The structural constraints that impede sanitation development in rural areas include inadequate water supplies, poor facilities for the safe disposal of water and other domestic waste, inadequate toilet facilities and hand washing facilities. These challenges are at the heart of rural sanitation development and are the most difficult to address, let alone resolve, because they involve availability of resources. Development planners may well find that once they have figured out how to solve the physical problems with an excellent design or once they have secured funding and identified all funding angles, then the truly serious barriers of bringing infrastructure to rural communities begin to appear (Solo, Perez & Joyce, 1993:17). Meeting the needs of rural communities require significant structural reforms that facilitate and even encourage the development of resources. Hemson (2004:3-4) points out that considerable additional resources are needed not only to make sanitation services available to the rural communities but also to make access to services both reliable and really beneficial. The provision of adequate sanitation resources to the rural communities is both a constitutional requirement and a social necessity for a post-apartheid society (Ibid). This requires not only a substantial increase in external resources but also a more effective use of all internal resources.

## **Economic challenges**

Key economic and financial challenges include the high cost of sanitation to low-income families, inadequate funding for sanitation infrastructure needs and the shortage of capital for investment (Solo *et al.* 1993:9; Inter-American Development Bank, 2003:6). The capital and running costs of sanitation are very high compared with what low-income households can afford (DWAF, 1996:VI). Water and wastewater systems that meet adequate standards involve substantial costs for electricity, labour, fuel, equipment, utility management and personnel training. Therefore, a significant percentage of rural households cannot afford adequate sanitation, even when the costs are cut to a bare minimum. Rural communities typically lack a strong economic base and their household incomes, lag far behind those of urban areas in South Africa (DWAF, 2002a:43). Quite simply, rural residents lack the disposable income to

pay the high water, sewer and electric costs resulting from the small size of the community and lack of a visible local economy. The end result is that most rural utilities have difficulty collecting on utility bills and almost never have adequate reserves built up to pay for ongoing operation and maintenance of the local infrastructure system. Given this economic reality, cheap solutions to the sanitation problem need to be explored.

## **Educational challenges**

Educational challenges include lack of access to health and hygiene education due to limited hygiene awareness programmes targeted at all levels. Lack of intense and sustained public education on hygiene leads, among others, to disperse pollution of water sources (DWAF, 1996:9; DWAF, 2002b:1). Hygiene education contributes to enhancement of the quality of life through improved general health knowledge. DWAF (1994:20) states that improvement of sanitation requires the development and dissemination of appropriate programmes for promotion, training, and health and hygiene education. The enormous backlog of basic water and sanitation services to rural communities will not be reduced unless the communities themselves are empowered to undertake their own development. This is not possible if they do not have the skills required which they can only acquire through training and experience (DWAF, 1994:20). Although training is not cheap, the costs of inadequate sanitation are greater. Improved local capacity to manage and maintain completed sanitation facilities is key to sustaining sanitation in rural communities (Alaska Native Health Board, 2002:8). Training local residents ensures that communities have locally based water and utility operators that are committed to helping their community maintain the local system. It also ensures that communities have certified operators that are proficient at handling routine maintenance and emergencies, thereby allowing communities to move toward self-sufficiency (Alaska Native Health Board, 2002:3-4). Trained operators can properly operate and maintain community systems. Training offers communities with technical assistance with the operation and maintenance of their facilities and helps troubleshoot when system emergencies occur so service can be continued during severe cold weather, floods and operator turnover. It should therefore be provided and be tailored to meet the unique skill requirements

associated with each community's water and wastewater systems and to assist local operators gain skills and knowledge necessary to obtain government water and wastewater operator certification at a level commensurate with the complexity of their community's system (Alaska Native Health Board, 2002:4).

## **Social challenges**

Social challenges have to do with the lack of community involvement and participation in sanitation projects. A case study of rural water supply and sanitation conducted by Mvula Trust (1998:2) revealed that a demand driven approach (rather than a supply driven approach) where the community plays the primary role in initiating a project and taking the key decisions, increases sustainability; if decision-making by the communities is to be effective, control of the project, must be delegated as far as possible; and strong relationships at community level, with the right incentives must be properly structured with the community as client. UNICEF (1997:11) states that community participation should not be limited to the construction stage, as it often is. Four steps are vital: use existing community organisations rather than creating new ones; improve both the organisational capacity of the community groups and their problem solving skills; involve women; and include the communities in project design, management and financing. Communities and agencies must therefore work together to develop mutually agreed upon processes to provide the necessary resources to manage and maintain resources once they are completed. Each community is unique, so projects must reflect local needs, wants, resources and expectations. Agencies must solicit input and develop mutually agreed upon project and management plans. Communities should be assisted to plan, design and construct water and wastewater systems so that planning decisions are community-based rather than being driven by project engineers. Ways to encourage community comprehensive planning and project-specific planning at the local level should be sought. Community involvement allows communities to share experiences, knowledge and success stories. Actions that encourage local leadership, governance and economic development can contribute to enhanced capability in a village to manage, operate and maintain sanitation facilities and other

services. Conditions necessary for community involvement include several factors such as active community leadership, cooperation between agencies and tribal entities, community buy-in, a common vision, and shared values for the community and community participation in the planning process. Actions that can promote village self-governance and leadership include: acknowledgement that people know their needs and know where to start in meeting these needs; recognition that people can develop solutions to their needs; trust people with resources to directly implement solutions they have identified; and exercise flexibility in programme and project time lines (Alaska Native Health Board, 2002:4).

## **Technological challenges**

Technological challenges have to do with two dimensions: the physical conditions which determine what technologies might work and the expectations of consumers. According to DWAF (2002a:29), water and sanitation services are sustainable when social considerations are given priority over technical and where affordability and appropriate technology based on local conditions are paramount. Cultural practices and preferences vary considerably from area to area. These will affect the range of options acceptable to consumers and must be catered for, so that facilities are used effectively and health benefits are gained by users and the community as a whole (DWAF, 1996:36). Choosing the most suitable sanitation system is not a simple decision to be made only by engineers; there are various important points to consider (WSSCC & WHO, 2005:21 & DWAF, 1996:6) one of which is whether the technology is acceptable to people or not. Cultural factors affect sanitation practices in some communities and must be taken into account (DWAF, 1996:17). In order to improve rural sanitation, there is a need for: cultural flexibility, awareness and sensitivity (recognise, respect and value culture); hygienic practices which build on indigenous experience and knowledge and social norms and expectations; technologies which take into account, amongst others, socio-cultural preferences, affordability and long-term sustainability; sanitation technologies to suit local materials and building practices, local economic conditions, and local cultural practices and beliefs. In this way, many practical problems can be avoided, and ownership of the technology is more likely to develop and flexible sanitation systems incorporating respect



for community values, perceptions and practices (Alaska Native Health Board, 2002:4). There should be less technical meetings between the project engineer and the council and more emphasis on community meetings explaining sanitation technology options and the pros and cons of various technologies so local residents can make a choice on a system that best fits the unique needs of the community and capabilities and that reflect the environment of each community in terms of cultures and lifestyle choices (Alaska Native Health Board, 2002:5). Projects should be designed with local input so that they can be maintained and operated better by communities because they meet locally defined needs. More formal input, flexibility in the development and management of local projects and feedback processes should be used to plan, design and develop projects. Local residents become more involved when they are included in the development of their sanitation facilities and they develop pride in the care and ownership of local systems.

### **The impact of sanitation challenges on health**

The constraints militating against good sanitation, as discussed above, range from structural, economic, educational, social to technological. These constraints have led to the continued spread of waterborne diseases such as bilharzia, schistosomiasis, guinea worm, yaws and high incidence of diarrhoea, affecting mainly children. Other health problems associated with sanitation constraints are typhoid, bilharzia, malaria, cholera, worms, eye infections, skin diseases and increased risk for bacteria, infections and disease for people with reduced immune systems due to HIV/AIDS (DWAF, 1996:39; Tladi *et al.* 2002:17). Other health problems associated with sanitation constraints are typhoid, bilharzia, malaria, cholera, worms, eye infections, skin diseases and increased risk for bacteria, infections and disease for people with reduced immune systems due to HIV/AIDS (DWAF, 1996:39; Tladi *et al.* 2002:17). WHO data on the burden of disease shows that approximately 3.1% of deaths (1.7 million) and 3.7% (54.2 million) of disability-adjusted-life-years (DALYs) world-wide are attributable to unsafe water and sanitation (WSSCC & WHO, 2005:7). In Africa and developing countries in South East Asia, 4-8% of all disease burdens are attributable to these factors. Over 99.8% of all deaths attributable to these factors occur in de-

veloping countries and 90% are children. A 1993 WHO meeting of health specialists gave safe excreta disposal, especially by diseased people and children, and more water for personal hygiene, especially hand washing, and protecting water quality, in that order as the most influential factors on reducing morbidity and mortality of diarrhoeal disease. A 1991 review of 144 studies linking sanitation and water supply with health, clearly states that the role of water quality in diarrhoeal disease control is critical (Ibid.). Sanitation challenges affect the quality of life, and in many cases, result in deaths and diseases, which place an additional financial and health burden on poor families (Tumwine *et al.* 2003:107). For example, other researchers have found that an estimated 10 000 people die every day from water and sanitation-related diseases and thousands more suffer from a range of debilitating illnesses (Tladi *et al.* 2002:17). Hemson (2003:3 & 2004:14) reports that sanitation challenges have had an acute effect on child mortality rates in South Africa - that is child mortality is twice as high for those households which do not have piped water and four times as high for those households which do not have flush toilets. The impact of sanitation challenges on the health of the community and others downstream, is extremely serious as witnessed by the 1.5 million cases annually of diarrhoea in children under the age of five and the cholera outbreaks (DWAF, 1996:40). Poor health keeps families in a cycle of poverty (DWAF, 1996:2). Sanitation challenges among rural communities need to be addressed in order to improve the health of these communities.

### **RESEARCH QUESTION**

The main research question guiding the study was: What are the perceived structural, economic, educational, social and technological sanitation challenges that rural communities experience in the EC?

### **RESEARCH AIM**

The study aimed at determining qualitatively the perceived structural, economic, educational, social and technological sanitation challenges in the EC rural communities.

### **RESEARCH METHOD**

## Design and setting

An exploratory qualitative study was conducted with the aim of exploring, describing and understanding the sanitation challenges of rural communities in the EC (Babbie & Mouton, 2002:270). The EC Province is situated along the south-east coast of South Africa and covers an area of 170 000 km<sup>2</sup>, representing about 14% of the country's landmass. It has a population size of approximately seven million, representing 16% (third largest) of the South African population. The non-urban population amounts to nearly 4 100 000, and dense concentrations of rural and peri-urban settlements occur in other districts and areas. The EC is one of the provinces with the highest level of poverty, underdeveloped infrastructure and unemployment (EC Department of Social Development, 2004:14).

## Population

The population of the study included the EC sanitation stakeholders. The stakeholders included officials from relevant provincial bodies and departments (such as the Provincial Sanitation Task Team (PSTT), the DWAF, the Departments of Health and Education); local government representatives (such as district municipalities, local government associations); implementing agents (Non Governmental Organisations Coalition and Social consultants); and local community structures (for example, Ward Councillors, traditional leaders, farmers association and Community Policing Forums).

## Sampling

Purposive sampling, in which the study participants are strategically selected, namely those who are best to meet the informational needs of the study, was employed in the current study (Patton, 2002:230; De Vos, 1998:198). A purposive sample of the EC sanitation stakeholders, who were available, knowledgeable and experienced in the field of study, was recruited during a period of two months in 2002. In order to obtain permission, co-operation and support, the aims and objectives of the study were introduced and discussed with the representatives of the stakeholders mentioned above. The process to advocate and introduce the study involved making presentations at the relevant provincial offices. Each office provided a list of potential study

participants. Subsequently, letters of invitation to participate in the study were sent to all officials whose names had been provided on the lists given. Invitations were posted, faxed or emailed. Finally, a purposive sample of 122 officials identified from the sanitation stakeholder departments/organisations participated in the study. Of these, 74 were male and 48 were female.

## Data collection method

Data were collected through the use of focus group interviews. The researcher chose focus group interviews because they produce a wider range of information, ideas and insight than individual responses secured separately; allow for one participant's remark to trigger a chain reaction from other participants; bring about original ideas compared to individual interviews; give the participants an opportunity to actively participate in the study process and in improving their own lives and provide opportunities for members to become aware of, to expand and to change their thoughts, feelings and behaviour regarding self and others (Martins, Loubser & Van Wyk, 1999:141; WHO, 1995:187; Schurink, Schurink & Poggenpoel, 1998:324).

## Focus group guiding questions

An initial set of loosely and broadly framed questions for discussion also referred to as focus group agenda or guiding questions (Martins *et al.* 1999:140), were formed. It was reviewed and modified from the original version on the basis of two pilot focus group interviews with sanitation stakeholders in East London who were subsequently excluded in the study. Five guiding questions, which were posed to elicit in-depth information and insight into participants' perceptions of sanitation challenges in the EC rural communities, were formulated, sequenced in an understandable and logical way as follows:

- What are the perceived structural sanitation challenges in EC rural communities?
- What are the perceived economic sanitation challenges in EC rural communities?
- What are the perceived educational sanitation challenges in EC rural communities?
- What are the perceived social sanitation challenges in EC rural communities?

- What are the perceived technological sanitation challenges in EC rural communities?

## Conducting focus group interviews

### ***Moderator selection and preparation***

Five professionals with a social science-related junior degree were chosen as facilitators or moderators of the focus group discussions. These professionals were chosen because during the course of their training they had been equipped with skills to handle group dynamics. They also possessed, among others, communication skills such as listening, probing, reflecting, paraphrasing, attending, observing and responding which researchers maintain that are necessary when conducting focus group interviews (Clark, Riley, Wilkie & Wood, 1998:137-138; De Vos & Fouché, 1998:90; Feldman, 1995:31; Lindlof, 1995:33; Schurink *et al.* 1998:319). However, further training was provided to the moderators to ensure that they were well-prepared to deal with anticipated problems such as the disruptive behaviour of an emergent leader among participants and also to help them to: develop a genuine interest in hearing other people's thoughts and feelings, become spontaneous, have a sense of humour, become empathic, be able to admit own biases, express thoughts clearly and be flexible.

### ***Number of focus groups***

The 122 participants who constituted the sample of the study were divided into 15 focus groups by department/organisation and randomly assigned to the five trained moderators. The distribution of groups was as follows: four groups were conducted with PSTT members, six with District Municipality Officials and three with DWAF, one with Mvula Trust and one with RSS. The researcher and one moderator facilitated each focus group. Care was taken that the moderators of each group were neutral and that they did not readily associate with focus group members as Martins *et al.* (1999:138) argue that the familiarity of focus group moderators and focus group members may present special difficulties during interviews. It is believed that people who regularly interact (either socially or at work, such as close friends, family members, colleagues and relatives) may respond more on past experiences, events or discussions than on the immediate topic of concern.

### ***Size of focus groups***

The average number of participants in each group was eight. The group size was small enough for all the participants to have the opportunity to share insights, to identify themselves as members, to engage in face-to-face interaction and to exchange thoughts and feelings among themselves. It was also large enough to provide diversity of perceptions as recommended in the literature (Schurink *et al.* 1998:317; Feldman, 1995:39 & Smit, 1995:26).

### ***Procedure***

The procedures followed for conducting focus group interviews were derived from Krueger (1994:113). Accordingly, the moderators welcomed the participants and put them at ease. They made them feel relaxed in order to develop trust amongst themselves. The first question was posed and this served as an "ice-breaker" to create a comfortable environment in which participants felt free to share their opinions. The purpose of the study was explained to the participants prior to the beginning of the discussion. The moderators reassured participants that all views were acceptable. Participants were told that they were free to argue, disagree, question and discuss issues with others in the room. The moderators then moved on to the subsequent questions, ensuring that opinions were elicited from all the participants, while encouraging and maintaining a lively and relevant discussion. It was necessary, from time to time, to "probe", in order to elicit additional information or clarification. Moderators took notes using notepads and recorded the discussions on audiotapes. The discussions were recorded accurately without neither changing the words nor leaving out material. The discussions were conducted in English; however, participants were free to express certain phrases in their home language. The moderators observed and recorded non-verbal cues in each group (for example, the emotional tone of the discussion, important hand gestures and unusual behaviour). Each group discussion lasted for about one and half hours.

## DATA ANALYSIS

The researcher and moderators observed the guidelines for analysing qualitative data as outlined by various researchers using a phenomenological approach (Poggenpoel, 1998:334-337; Miles & Huberman, 1994:10; Clark *et al.* 1998:113). They paid attention to words and phrases in the participants' own vocabular-

ies that capture the meaning of what they do or say; they identified different themes and looked for underlying similarities between them; they named and categorised themes; and they made connections between a category and its subcategories. The five questions posed in the focus group discussions, served as guidelines for organising data. The data were analysed and recurrent themes were determined. The recurrent themes, which emerged in relation to each question, have been presented in the results with selected direct quotations from the participants offered as illustrations. Direct quotations were used to retain what Hall and Hall (1996:150) refer to as the richness of the data as it allows participants to speak for themselves.

## TRUSTWORTHINESS

Qualitative data analysis requires clear, explicit reporting of data so that the reader will be confident of, and can verify, reported conclusions. It requires keeping analytic strategies coherent, manageable and repeatable as the study proceeds (Miles & Huberman, 1994:439). The researcher adopted various strategies to ensure trustworthiness of the interpretation of the data espoused by Miles and Huberman (1994:262-277). These included:

- *Participant checking:* Periodic feedback sessions were held to present the results of the data collection to the participants to test whether they agree with them.
- *Data cross-checking:* This activity involved the researcher stepping back to consider what the analysed data mean and to assess its implications for the questions at hand. This helped the researcher to ensure that the data are credible, defensible, warranted, and able to withstand alternative explanations.
- *Moderator reviews:* The focus group moderators had regular meetings to cross-check the quality of each other's data sets.
- *Ongoing reflection on data:* The researcher began the analysis almost in tandem with data collection. This helped the researcher to identify tentative interpretations or emerging hypotheses during the fieldwork process. While some of the hypotheses were refined or overturned or rejected at the end of the study, they provided an important account of the unfolding analysis and the internal dialogue that accompanied the process.

- *Peer reviews:* The researcher brought two peers who were knowledgeable on qualitative analysis as well as the substantive issues involved in the study, into the analytic process. Approximately 20% of the data were given to these peers to rate the initial codings and a .61 interrater reliability was achieved. These peers served as a cross-check, sounding board, and source of new ideas and cross-fertilisation.

## ETHICAL CONSIDERATIONS

Approval for the research was requested from and granted by the EC Provincial Sanitation Task Team. Subsequently, permission was obtained from the participants in the form of written consent for the interviews (Munhall, 1988:156; Field & Morse, 1985:44). The consent outlined all the rights to which subjects were entitled. Participants were advised on: their status as volunteers; their right to refuse to answer any question (c) the legal liabilities of their participation; confidentiality and privacy; their right to withdraw from the interview any time they wanted and limitations of anonymity due to the nature of the study (Nuntsu, 2002:127).

## FINDINGS AND DISCUSSION

### Structural sanitation challenges

Structural sanitation challenges in rural communities identified included lack of physical, natural, human and organisational resources. In terms of physical resources in rural communities, participants mentioned that they were not in a good state and needed repair and maintenance. They further indicated that sewerage oxidation ponds, conservancy tanks and septic tanks were poor across rural settlements. All forms of toilet structures were generally poor to non-existent. Communities did not have effective means of off-site excreta disposal. Rivers, streams, canals, gullies and ditches were often destinations of most untreated human excreta and household waste. Such waste accumulated on streets, in open spaces, between houses, in stagnant pools and on wasteland. In so far as the natural resources were concerned, participants stated that the number of natural resources, such as perennial rivers, springs and fountains, were limited and some did not produce water which was safe for consumption. There-



fore, water supply/reticulation was irregular and inadequate. The inadequate supply of water was also attributed to bursting pipes, lack of money to fix broken taps, taps being closed and drought. According to the participants, human resources lacked technical expertise and were limited. Lack of co-ordination and capacity, under-utilisation of local supplies, poor communication among stakeholders, the lack of political will, lack of competency and deliberate political manipulation and sabotage impacted on the optimum utilisation of organisational resources. The following expressions summarise the inadequacy of resources in the communities: *"There are communities where the whole street shares one toilet and one water tap and some have no communal taps at all". "There is roughly one engineer in every 50 000 people in South Africa compared to Japan which has one engineer in every 600 people". "Education without resources is meaningless".*

Access to sanitation resources seems not to be a random process. Indeed, like in the current study, previous research showed that rural communities are most likely to have no adequate sanitation resources (Tladi *et al.* 2002:17; Tumwine *et al.* 2003:113). In addition, DWAF (2004:19) acknowledges that available resources in communities are insufficient to effect all the changes necessary for sanitation improvements. This is attributed to the fact that the implementation of sanitation resources takes place progressively over time. In view of the latter, DWAF has set a target to provide at least a basic sanitation service to an additional 18 million people (three million households) by 2010 (Stephen, 2003:55). Availability of broadly skilled personnel, latrines, clean environment, excreta management systems, sanitation facilities, regular water supplies and additional funding is critical for sanitation improvements. For example, in a review of 60 studies, it was reported (Tumwine *et al.* 2003:107) that the largest benefits of sanitation improvements were improved water availability (25%), improved excreta disposal (22%) and water quality (16%). There is a need for adequate sanitation - safe, hygienic, easily accessible, acceptable and affordable systems of disposing human excreta, wastewater and household refuse. This information has important policy implications since health education without the improvement of the socio-economic status may not be effective. The success of achieving adequate sanitation depends on the combined efforts of policy makers, budget allocators, local gov-

ernment and community residents. It continues to require dedication of resources, energy, and commitment, from each resident, community, region, organisation and government. With creative thinking and use of resources, agencies and communities can work together to find new ways to solve structural sanitation challenges.

## Economic challenges

Lack of funding was identified as the main economic challenge experienced by rural communities affecting rural sanitation. Participants indicated that competitive funding processes preclude many rural communities from receiving adequate funding for their sanitation infrastructure needs. Most funding available for sanitation projects has shortfalls for funding for training, technical assistance, community planning, upgrades and repairs to existing systems, and operations and maintenance. Specific issues related to funding identified by the participants included: inadequate funding available for upgrade, repair and expansion of old systems on the verge of collapse; not enough funding available for community planning efforts; only limited funding available for operation and maintenance; no funding for solid waste projects and none to limited funding for sanitation-related infrastructure; minimum funding available for training community leaders in community planning, utility management and related areas; no funding to pay for training of new employees due to high job turn over rates - operators go on to better jobs because village wages are so low, they can make more money doing other jobs or by leaving the village; no funding sources available to maintain heavy equipment needed to maintain infrastructure systems; minimum funding available to pay for upgrades to meet new regulatory standards and compliance requirements; open dumps and landfills are linked to rural sanitation but no money available to pay for closures and upgrades required to meet landfill compliance standards; money is earmarked for other uses so it cannot be used for what it is needed; for example, connecting service lines to houses; minimal, if any, funding available for testing alternative technologies or conducting pilot projects to try alternative solutions or technologies; not enough money available for small systems operator training; most grants provide funding for infrastructure/capital improvements, but not for operating and maintenance costs; funding policy undermines sound community and utility decision-mak-

ing, yet in most rural communities, sanitation services are the most technically demanding and costly community services provided.

It is clear from the findings of the current study and those of previous studies that considerable additional funding is required to address the sanitation backlog (DWAF, 2002b:44; Hemson, 2004:3). Rural communities are finding it very difficult to generate the revenues necessary to properly operate, manage and maintain their sanitation systems. While capital funding has increased over the years to assist communities construct basic sanitation systems, funding assistance to run local utilities has been reduced. Development planners and policy makers need to take this reality into consideration if sanitation improvements are to be realised among rural communities.

## Educational challenges

Lack of advocacy/awareness creation, training/capacity building, access to information, and information exchange of local people were identified as educational challenges to rural sanitation. The following expressions were captured in this regard: *"While access to water supply and sanitation has improved in the last 10 years, it has been neither as widespread nor as rapid as had been expected". "Sanitation is still not treated as a critical political issue compared with other health-related issues like HIV/AIDS and poverty". "Advocacy initiatives and awareness campaigns are piecemeal and therefore do not have a lasting impact"*.

Participants indicated that there is generally limited, if any, social mobilisation, training, awareness campaigns, seminars and workshops, that would assist communities to properly manage their facilities; to set proper financial and management procedures; to manage the local utilities like a business and to determine the type of system they can afford to operate and maintain. Two participants said: *"There is relatively very limited co-ordinated effort in handling sanitation challenges resulting in resistance to sanitation reforms". "Advocacy efforts do not filter through to grassroots people due to the fact that they do not adopt the indigenous language as a medium of instruction"*.

Participants indicated that communities are generally given piecemeal information about sanitation activities,

preferences, what is going on and who is doing what. They are not provided with an understanding of the theoretical background and underlying assumptions and the meaning of, and reasons for, adopting safe hygienic practices. Consequently, communities adopt unsafe hygiene practices, as their level of sanitation awareness is very low. One participant stated that: *"Training should be flexible and developed to meet the unique needs of each local utility – no cookie cutter approach to training"*.

Stephen (2003:51) states that ongoing capacity building is necessary. In addition, the National Sanitation Policy (DWAF, 1996:6) states that improving sanitation is not something which happens once in a lifetime. It is a continuous process which requires technical advice. UNICEF (1997:11) states that to achieve sustained behavioural change, broader capacity building efforts are needed. Lack of sanitation education results in an ignorance of the consequences of personal and family hygiene custom and practices (DWAF, 1996:41). In this regard, DWAF (2002b:9) has set as its target, the provision of hygiene education to three million households by 2010. Health and hygiene promotion should be provided to communities to raise awareness of the diseases caused by unhealthy behavior and practices; to enable communities to improve their health through correct hygiene practices and to increase the demand and willingness to pay for appropriate sanitation facilities (DWAF, 1996:14). The success of sanitation programmes depends largely on the quality of training provided (DWAF, 1996:21).

## Social Challenges

Participants expressed inadequate community participation in sanitation issues, as a sanitation challenge for rural communities. This included: poor representation of people from the communities on committees, boards and workgroups assisting rural sanitation; poor inter-organisational communication between communities and agencies providing sanitation services; lack of recognition of the uniqueness and diversity of each community; ignorance of community input; communities being left behind in the planning process; villagers not being given the power to decide for themselves what they want yet they know best what is needed in their communities; local level capacity not being treated as important by agencies and lack of

formal feedback systems to communities. The following expressions were captured: *"At the moment communities participate but they are subjected to this and that". "Rules change too fast without input from communities on their concerns or the consequences of the rule changes". "Agencies meet with communities but leave with different agendas. They hear but do not listen". "Some agencies are not communicating at the 'bush' level". "Agencies are more interested in preserving themselves than meeting communities' needs". "Contractors can be hard to work with and keep track of during a project". "There is an 'us' and 'them' attitude between communities and agencies".*

DWAF (2004:6) points out that sanitation improvements require consultation with stakeholders on water and sanitation-related matters. Guidelines on public participation have been developed in order to guide the involvement of stakeholders in water and sanitation issues (DWAF, 1994:11 & DWAF, 1996:4). The guidelines state that communities must be involved in the local planning, organisation and implementation of sanitation programmes. This will ensure that the resulting programme is relevant, acceptable, appropriate, accessible, affordable, equitable, empowering and based on indigenous knowledge and local skills (DWAF, 1996:19); thus ensuring long-term success. DWAF (2002b:20) indicates that greater public participation increases accountability and responsiveness to local needs. In order to achieve sustainable water and sanitation services in an environment of enormous need, limited resources and a changing institutional environment, DWAF (2002b:29) maintains that people need to be at the centre of management and governance and decision-making processes concerning water and sanitation. This means that the design and operation of water and sanitation services should use a people centred approach and be based on understanding of people to be served and local conditions. DWAF (2002a:48) states that adequate consultation, education and collective and individual accountability for services is a prerequisite to cost recovery and effective management of service delivery.

## Technological challenges

Lack of cultural flexibility, awareness and sensitivity in the development of technologies that recognise, respect and value culture and technologies which do not take

into account, amongst others, socio-cultural preferences, affordability and long-term sustainability constituted the technological sanitation challenge. Participants indicated that in some communities there are people who perceive safe hygienic practices as a rich people's affair. They believed that only rich people can afford toilets - toilets are associated with dignity, privacy and status. Some preferred to defecate in the "bush", because they perceived toilets, especially inside ones as western culture. The following expressions were captured: *"Sometimes community members would not use the toilet because they are afraid that there could be muti on the toilet seat to bewitch them". "Some technologies are not appropriate for communities. The 'One size fits all' approach is not working". "Some project engineers make all the decisions without consulting the community". "Some engineers do not listen to community's comments during the planning and design phase of the development process".*

According to UNICEF (1997:11), while low-cost technologies have made the implementation of sanitation programmes more widespread, there is a need to ensure that technology options reflect consumer preferences and local conditions. Technology options should be generally known and preferred; environmentally safe; financially sustainable; use locally available materials for construction and maintenance; replicable with few external inputs; operated and maintained locally, with few imported parts or highly skilled personnel; what people want and are willing to pay for, even the economically weaker population (UNICEF, 1997:46). Stephen (2003:50) states that technology should be chosen rationally and appropriately. DWAF (2002a:23) states that planners need to strike a balance between product sophistication, operation and maintenance and cost.

## LIMITATIONS OF THE STUDY

The results of this study cannot be generalised due to the nature of the sampling design and qualitative procedure. It may be that some of the participants described their perceptions of sanitation challenges in rural communities in a way they felt was professionally correct and not how they actually perceived them. Nonetheless, the study has provided useful data that would inform policy, planning and advocacy efforts in the sanitation field.

## CONCLUSION

This paper does not attempt to offer recipes for overcoming the sanitation challenges affecting rural communities nor does it offer a general approach for raising awareness and problem solving. It is hoped instead that this paper further clarifies the sanitation challenges that beset rural communities. The study has revealed key structural, economic, educational, social and technological sanitation challenges in rural communities which are interrelated and intertwined. The challenges identified reveal that there is more to solving rural sanitation challenges than just building toilets, a sewerage system or a water system. The question of sanitation, perhaps more than most development issues, is complex. The findings of the study show that adequate sanitation is unavoidably linked to the broader development process: sanitation affects and is affected by, a wide range of issues. The sanitation challenges identified through this study need to be addressed if remarkable changes in the sanitation status of rural communities are to be evidenced. The findings of this study are useful for informing sanitation policy, planning and advocacy efforts at local, provincial and national levels. The results provide a knowledge base on which the national, provincial, local governments as well as NGO's and the private sector can build strategies for promoting good sanitation practices and information necessary to support sustainable delivery of water and sanitation services to rural areas. The study has rekindled a renaissance of ideas in the water and sanitation field. The information gained through the current study will not only give direction to the sanitation, but it will also enable practitioners to make carefully thought out decisions regarding the sanitation challenge.

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