

Factors that could motivate people to adopt safe hygienic practices in the Eastern Cape Province, South Africa

Nancy Phaswana-Mafuya¹ and Nimish Shukla²

1. Social Aspects of HIV/AIDS and Health (SAHA) Human Sciences Research Council
2. Border Technikon, Centre of Excellence in Leisure and Tourism Research Unit

ABSTRACT

Background: Approximately 18 million South Africans do not have access to adequate sanitation. This problem is not unique to South Africa but is a challenge to many developing countries.

Objectives: The purpose of this qualitative study was to gain insight and understanding of factors that could motivate people to adopt safe hygienic practices.

Methods: A non-probability purposive sample of 122 participants was drawn from sanitation stakeholder organisations in the Eastern Cape Province. Of these, 74 were male and 48 were female. The mean age of the participants was 40.1 years. The 122 participants were divided into 15 focus groups, each consisting of about eight members. The focus group discussions were conducted using seven guiding questions. Responses were examined and clustered in terms of the primary focus group questions.

Results: Regular water supply, provision of sanitation facilities, stakeholder participation and improvement of consumer sanitation knowledge are factors which can motivate people to adopt safe hygienic practices.

Conclusions: There are cultural, educational, economic, institutional, environmental and psycho-social factors that could motivate people to adopt safe hygienic practices.

Key words: Sanitation, Safe hygienic practices, Eastern Cape, South Africa

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INTRODUCTION

The White Papers on Water Supply and Sanitation¹ and Basic Household Sanitation² indicate that in the apartheid era, sanitation lacked the priority that it should enjoy in relation to the health, economic and environmental burden it places on society. Sanitation was not viewed as a popular topic at any level of society and neither viewed as an attractive career, nor a political campaign issue. Consequently, approximately 21 million South Africans did not have access to adequate sanitation (i.e. safe, hygienic, easily accessible, acceptable and affordable systems of disposing human excreta, wastewater and household refuse) in 1996. The sanitation problem is not unique to South Africa. It is one of the major challenges in all developing countries as most of them do not have adequate sanitation facilities³. In

addressing this legacy, the national and provincial governments in South Africa, have taken a number of initiatives to reduce the sanitation backlog and to ensure that people adopt safe hygienic practices. Nationally, the initiatives included the establishment of the National Sanitation Co-ordinating Office (NASCO) and the Constitution⁴ which guarantees all South Africans the right to have access to dignity and respect and, to health and well being in order to safeguard among others, the right to adequate sanitation. Provincially, the initiatives included the establishment of the Provincial Sanitation Task Teams (PSTTs), Multi-Annual Action Plan (MAAP), and Sanitation Communications committees in each province. Furthermore, sanitation projects were initiated in each of the nine provinces in South Africa. For instance, in the Eastern Cape, 22 sanitation projects were initiated, representing at least 10 000 households and at least 25 000 households developed action plans for sanitation improvements¹.

These initiatives led to a somewhat improved sanitation situation as the figure of people not having access to adequate sanitation went down to 18 million in 2001 compared to 21 million in 1996².

More worrying is the fact that, people continue to adopt unsafe hygienic practices, despite an array of diversified efforts that has been mounted towards adequate sanitation². Often the unhygienic practices include unsafe human excreta disposal, unsafe solid and liquid waste

Corresponding Author

Nancy Phaswana-Mafuya
Social Aspects of HIV/AIDS and Health (SAHA)
Human Sciences Research Council
 69-83 Plein Street
 10th Floor Plein Park Building
 P/Bag: 9182, Cape Town, 8000
 Tel: +27 (0) 21 4667914
 Fax: +27 (0) 21 4612696
 E-mail: NPhaswanamafuya@hsrc.ac.za

disposal and unsafe drinking water⁵. Unhygienic practices affect quality of life, education and development and in many cases, can result in diseases, which place an additional financial and health burden on South African families as well as lead to exposure and increased risks to personal safety. The impact of unhygienic practices 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 cholera outbreaks². Other health problems associated with unsafe hygienic practices are diarrhoeal diseases, intestinal infections, polio, typhoid, bilharzias, malaria, worms, eye infections, skin diseases and increased risk for bacteria, infections and disease for people with reduced immune systems due to HIV/AIDS⁶. Poor health keeps families in a cycle of poverty and lost income inclusive of Gross Domestic Product and Gross National Product⁷. Environmental problems associated with unsafe hygienic practices include dispersed and diffuse pollution of water sources resulting in the water and faecal disease cycle for communities with untreated water supplies and increased downstream water treatment costs.

The national cost of lost productivity, reduced educational potential and curative health care due to unsafe hygienic practices is substantial⁸. This in the long-term affects the quality of life, education and development. Undoubtedly, investing in adequate sanitation can lead to adoption of safer hygienic practices which will consequently lead to reduced morbidity and mortality, increased life expectancy, increased general health conditions and well being of people as well as savings in health care costs².

The complexity of sanitation presents the hard realities of the task before all sectors of society, particularly researchers. Since inadequate sanitation does not exist in isolation, the starting point is to identify and understand other factors that could motivate people to adopt safe hygienic practices. Although there has been extensive research on water and sanitation related diseases in South Africa, there is a dearth of information on factors that could motivate people to adopt safe hygienic practices⁹. Most of the available research deal with the health impacts and risks associated with poor sanitation⁷. An increasing volume of literature suggests the need to focus on understanding the underlying factors that could motivate people to adopt safe hygienic practices in view of the magnitude of the sanitation

problem¹⁰. Such an understanding should be derived from research, not assumption, hence the current study. Once the factors that could motivate people to adopt safe hygienic practices have been quantified and qualified, then government institutions, bilateral and multilateral aid organisations, and Non Governmental Organisations can jointly plan effective strategies and appropriate measures to address them¹¹.

METHODS

Study design

A qualitative focus group research design was employed with the aim of exploring, describing and understanding the phenomenon under study. The researcher used focus groups 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 participants¹²; 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 others¹³.

Sample

Information about factors that could motivate people to adopt safe hygienic practices was gathered from the Eastern Cape Province sanitation stakeholders using a non probability sampling strategy¹⁴. The Eastern Cape Province is one of the nine provinces along the south-east coast of South Africa. It covers an area of 170 000 km², representing about 14% of the country's land mass. 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. It is one of the provinces with the highest level of poverty, underdeveloped infrastructure and unemployment. The stakeholders, identified as critical in terms of information gathering for the study, were relevant provincial bodies and departments such as the Provincial Sanitation Task Team (PSTT), Department of Water Affairs and Forestry (DWAF), Health and Education Departments; local governments representatives such as district municipalities and local government associations; implementing agents such as Amatole Water Board, Non Governmental Organisations (NGO) Coalition and social consultants; and local community structures such as ward councils, traditional leadership forums, farmers' associations,

community policing forums. This target group was chosen because they are more knowledgeable on sanitation and related issues at provincial and community levels. A purposive sample of 122 officials participated in the study. Of these, 74 were male and 48 were female. The mean age of the participants was 40.1. The participants were predominantly Xhosa speaking and had been born and brought up in rural areas.

Procedure

In order to obtain permission, co-operation and support, the aims and objectives of the study were introduced and discussed with provincial sanitation authorities. This involved making two presentations at two PSTT meetings in February and April 2002 respectively. At these meetings, a list of potential study participants was provided. Subsequently a letter of invitation to participate in the study was written to all officials whose names had been provided on the list given. Invitations were posted, faxed and/or emailed.

A total of 139 officials agreed to participate in the study. These officials were subsequently invited to attend focus group discussions in July 2002. Only 122 officials turned up for the focus group meetings. The 122 participants were randomly divided into 15 focus groups. The distribution of focus 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 an NGO called Rural Support Services. Each group had an average of eight members and was randomly assigned to two trained moderators. Care was taken that the moderators of each group were neutral.

The procedures followed for the focus group interviews were derived from Krueger¹⁵. 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. Focus group participants were told that they were free to argue, disagree, question and discuss issues with others in the room. They were also advised on: (a)

their status as volunteers; (b) their right to refuse to answer some of the questions; (c) the legal liabilities of their participation; (d) the right to withdraw from the interview any time they wanted and (e) the limitations to anonymity due to the nature of the study. 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 focus group discussions on audio-tapes after obtaining permission from participants to do so. The discussion of each focus group interview was recorded accurately without neither changing the words nor leaving out material. The moderators observed and recorded non-verbal cues in each group, e.g. the emotional tone of the discussion, important hand gestures and unusual behaviour. Participants opted to use the English language during focus group discussions, although they were free to express certain phrases in their home language. Issues of confidentiality were discussed at the beginning of each focus group discussion. Every participant, the moderators and the researcher signed a statement of confidentiality. Each focus group discussion lasted for about one and half hours.

Guiding questions

An initial set of loosely and broadly framed questions was developed and preliminary discussions on the questions were held with experts in the field. Based on expert opinion, the questions were reviewed. Seven guiding questions, which were posed to elicit in-depth information and insight into participants' perceptions of factors that could motivate people to adopt safe hygienic practices, were formulated, sequenced in an understandable and logical way as follows:

- What are the common hygienic practices in the communities?
- Which cultural factors can motivate people to adopt safe hygienic practices?
- Which institutional factors can motivate people to adopt safe hygienic practices?
- Which economic factors can motivate people to adopt safe hygienic practices?
- Which environmental factors can motivate people to adopt safe hygienic practices?
- Which psycho-social factors can motivate people to adopt safe hygienic practices?
- Which educational factors can motivate people to adopt safe hygienic practices?

Data analysis

The researcher and moderators observed the guidelines for analyzing qualitative data as outlined by various researchers using thematic content analysis). They:

- Paid attention to words and phrases in participants' own vocabularies that capture the meaning of what they do or say ¹⁶;
- Identified different themes and looked for underlying similarities between them ¹⁷;
- Named and categorised themes (open coding) ¹⁸; and
- Made connections between a category and its subcategories (axial coding) ¹⁵

The data from focus groups were transcribed and analysed and presented according to the seven guiding questions. Approximately 20% of the data were given to an external researcher to rate the initial codings and a .61 interrater reliability was achieved. The recurrent themes, which emerged in relation to each guiding question, have been presented in the results, with selected direct quotations from participants offered as illustrations. Direct quotations were used to retain what ¹⁹ refer to as the richness of the data as it allows participants to speak for themselves. The results provided information on the factors that should be considered in ensuring the adoption of safe hygienic practices.

RESULTS

Common hygiene practices

The groups indicated that generally communities adopt unsafe hygiene practices as residents do not wash hands after changing babies' nappies, before handling food, before eating, after a visit to the toilet, after house cleaning and after work or rubbish disposal, due to irregular water supply. Others did not wash food before eating, especially fruits. Men did not wash their hands after urinating and they urinated in open spaces (e.g. behind the house, on the street, next to the car). There was poor disposal of children faeces and solid waste because of the lack of essential services for waste disposal. Most mothers who used disposable nappies threw them in the veld. Water containers were sometimes left uncovered or half-covered so as to ensure that they capture rainwater. The communities shared water with animals because of lack of demarcation areas around households. They also drank untreated water from unprotected streams, due to lack of money to buy disinfectants. A number of communities used

the "bush" for defecation due to the lack of toilets. This habit also stems from poor technical awareness in communities (e.g. seepage problems), a lack of maintenance and cleaning of public toilets and facilities, cultural norms and beliefs regarding certain practices as well as poor designs in public facilities. The following expressions highlight some of the hygiene practices:

"Most houses are not fenced; domestic animals come in the yard to drink water from the containers".

"During some traditional ceremonies, people do not wash meat in order to retain its nutrients".

"It is sometimes perceived as a disgrace for the father in law to use a toilet used by the daughter in law".

"Sometimes community members would not use the toilet because they are afraid that there could be *muti* on the toilet seat to bewitch them".

The data revealed that the motivating factors for adoption of safe hygienic practices are varied and complex, but could generally be grouped into the following linked and overlapping categories:

Cultural Factors

All the groups were of the opinion that safe, acceptable and affordable sanitation technologies and flexible sanitation systems, incorporating respect for community values, perceptions and practices and appropriate to the resource base of the community and the physical environment in which it is located are critical for adoption of safe hygienic practices. Further they indicated that introducing awareness programmes that take into consideration the values, culture and beliefs of communities and of indigenous knowledge and experience could lead to desired results. The programmes should also address the myths, attitudes, beliefs and distorted perceptions. For example one of the DWAF officials mentioned that in most communities do not perceive children's faeces as harmful. They touch children's stools and say "ngumtwana lo" which literally means "this is a child" giving the impression that children's stools are clean. An NGO official mentioned that some people perceive safe hygienic practices as a rich people's affair. An official from the district municipality indicated that some people preferred to defecate in the bush because they were afraid to share toilets to avoid being bewitched. Other expressions which were captured were as follows:

"Some technologies are not appropriate for communities. The "One size fits all" approach is not working", said a participant from Mvula Trust.

"Posters should fit the local cultural conditions", said the participant from DWAF.

"It is sometimes perceived as a disgrace for the father in

law to use a toilet used by the daughter in law”, said the participant from traditional leadership forum.

“Sometimes one has to defecate outside in order to examine the faeces to see if s/he has been bewitched or not”, said the participant from PSTT.

Institutional Factors

The motivating factors cited by all groups in this regard were co-ordination, networking and partnerships among stakeholders in sanitation. Provision of sanitation resources, integration of resources, maximum utilisation of existing resources, accountability and utilisation of local supplies by the authorities were also perceived as motivating factors for adoption of safe hygienic practices. In addition, improved channels of communication to reach members of rural communities particularly home visits, small group meetings, and community meetings were cited as motivating factors. Furthermore it was stated that systems which are manageable and do not make excessive demands on the time or resources of the community could contribute towards making people adopt safe hygienic practices. In addition, it was indicated that maintenance, management and hygiene promotion roles within and beyond the community must be understood, assigned and fulfilled. The lack of human, physical, organisational and natural resources in the communities were said to affect the adoption of safe hygienic practices. Lack of technologies that could be easily maintained; excessive focus on the technical aspects of water and sanitation projects; inadequate water supplies, poor maintenance of toilet structures; poor facilities for safe disposal of water and other domestic waste and inadequate toilet facilities were seen as de-motivating factors for adoption of safe hygienic practices.

“We must join hands together to fight unhygienic practices”, said the participant from DWAF.

“Sanitation is everybody’s responsibility”, said the participant from PSTT.

“There are cases where a school has 300 learners but there is no single toilet”, said the participant from the Department of Education.

“Sometimes the distance between the household and the toilet is too long and poses a threat at night, especially for women and girls who might get raped”, said the participant from community policing forum.

“There are communities where the whole street shares one toilet and one water tap and some have no communal taps at all”, said the participant from Amatole Water Board. “There is roughly 1 engineer in every 50 000 people in South Africa compared to Japan which has 1 engineer in every 600 people”, said the participant from Amatole Water Board.

Economic Factors

Availability of income was considered by all groups to be one of the key motivating factors for adoption of safe hygienic practices. Further, provision of affordable sanitation products and services, with more equitable distribution so as to reach the low-income groups and to enhance access to and demand for goods and services was viewed as critical. Unemployment, low incomes, poor living conditions, low literacy levels and lack of recreational facilities were perceived as de-motivating factors towards the adoption of safe hygienic practices. Similarly the high cost of water and sanitation to families of low income and the shortage of capital for investment were also cited as de-motivating factors. While even the lowest-income families can usually afford potable water as it is delivered, the provision of indoor connections close to the house can become unaffordable because of attendant costs that are not taken into account in project feasibility studies. People are always willing to pay for the type of service they want. It should be ensured that the method of payment is the preferred one which best suit their circumstances. Special provision may have to be made for the poorest individuals and families.

Issues relating to economic efficiency and resource scarcity should be taken into consideration when price for services are made and issues concerning the right to what is often considered basic level of service.

“Programmes should emphasise poverty and related problems rather than solely focusing on sanitation”, said one of the participants from the NGO Coalition.

Environmental Factors

Environmental factors which could motivate people to adopt safe hygienic practices were cited as: infrastructural development (e.g. well-built houses with electricity); access to water supply sources (e.g. house connections; public stand pipes, bore-holes, protected springs); access to excreta disposal sources (e.g. connection to the sewer or septic tank and Vertical Improved Pits; care and maintenance of water sources (e.g. fencing, cut grass, soak-away, drains as well as existence of care takers for preventive maintenance) and excreta disposal sources and supportive and enabling environment. Inadequate and poorly used resources were said to be de-motivating

factors. Properly maintained water sources and properly maintained excreta disposal sources were said to be motivating factors for adoption of safe hygienic practices.

“Sanitation technologies must maintain the integrity of the natural environment. It must not contribute to contamination of water resources or the creation of health hazards”, said one of the social consultants “Creation of an environment in which mistakes can be made without losing confidence is vertical”, said the participant from the farmers’ association.

Psycho-Social Factors

Psycho-social factors that could motivate people to adopt safe hygienic practices as cited by all the groups, included improvement of living standards, availability of basic needs, poverty alleviation and community participation in sanitation programmes (from conceptualisation, design, implementation to evaluation). Political commitment from the top and at all levels was seen as one of the motivating factors for adoption of safe hygienic practices. Lack of enabling environment, the attitude that responsibility for sanitation lies somewhere, lack of political will, lack of local support for sanitation programmes, limited consideration of service sustainability and weak sector institutions, lack of monetary and social benefits, low prestige and recognition for sanitation were all regarded as de-motivating factors towards the adoption of safe hygienic practices.

“Sanitation technologies should be consumer oriented, address the needs of the people”, said the participant from DWAF.

“Sanitation technologies must support human dignity in all interventions because sanitation is not only about health. It is about improving morale and dignity of the people”, said participant from Department of Health.

“Authorities wait for a crisis (e.g. cholera outbreak) and react by introducing programmes which are not sustainable. As soon as the crisis is over, they sit back and relax”, said participant from Department of Health.

“At the moment communities participate but they are subjected to this and that”, said one of the social consultants.

Educational Factors

Educational factors include training, advocacy, capacity building, social mobilisation, access to

information and information exchange. There was a consensus across all the groups that, unhygienic practices, certain cultural beliefs in relation to hygiene, fears and perceptions of hygienic practices would have to be changed through raising awareness and education. Ineffective promotion and low public awareness, ignorance of people, lack of capacity building, lack of hygiene education and training, negligence of people were said to be demotivating factors for adoption of safe hygienic practices. The need for more sanitation programmes was expressed. It was indicated that sanitation programmes should change long-held beliefs through mentioning the unmentionable; equally address the needs, preferences and behaviours of children, women and men; adopt approaches which recognise and allow optimal use of valuable community attributes such as participatory approaches; focuses on behaviour and facilities together. All groups expressed the necessity of a hygiene awareness workshop and indicated that it should address cleanliness, collection of waste, safe disposal of faeces, food storage, disease prevention, sanitation facilities and erection of toilets.

“Focus should be on children. It is difficult to teach an old dog new tricks”, said the participant from Department of Education.

“Education without resources is meaningless”, said the participant from Department of Education.

DISCUSSION

Although it is not the intention of focus group research to generalise the findings, the 15 focus groups involved in this study demonstrated a remarkable consensus, among and between groups, on the issues under discussion. The objective of the study was to determine factors that could motivate people to adopt safe hygienic practices. The study showed that the motivating factors for adoption of safe hygienic practices as perceived by sanitation stakeholders are varied and complex. These factors can be grouped into four linked and overlapping categories, namely: cultural, economic, institutional, structural, environmental, psycho-social and educational factors. These findings support the view that sanitation includes far more than toilets, but a range of elements, which are interrelated and of equal importance, such as physical infrastructure, disposal of waste water and solid waste, safer living environments, knowledge of sanitation-related health practices². Therefore, improvement of physical infrastructure alone is not sufficient for ensuring adoption of safe hygienic practices. Technical solutions alone are not viable²⁰. Therefore, other factors should be considered in ensuring adoption of safe hygienic practices. Sanitation technologies need to suit local material and building

practices, local economic conditions, and local cultural practices and beliefs and there should be regular water supply, adequate water and solid waste disposal, safe human excreta disposal, and safe drinking water²¹. In this way, many practical problems can be avoided, ownership of the technology is more likely to develop and people are more likely to adopt safe hygienic practices²². This supports the use of the demand responsive approach, an implementation strategy based on meeting demand for services by providing users with an appropriate choice of service and service level options, in identification of sanitation products and the provision of sanitation services²³. Of greatest concern is the fact that rural areas are generally characterised by inferior infrastructure, low incomes, poor site conditions, unreliable water availability, high population density, and lack of recognition by formal governments which result in adoption of unsafe hygienic practices²⁴. Another challenge is that fresh water is increasingly a scarce resource. Global consumption rose six-fold between 1990 and 2000 and the rate of increase in consumption is accelerating². The impact of this water scarcity is felt mostly in rural areas, where the combined effects of lack of economic growth, deteriorating water quality and competing demands of agriculture are mostly concentrated resulting in intermittent water supplies, deteriorating water quality and falling water tables⁸. This segment of the population, should therefore, be a focus of concern. No single agency has the capacity to address all the challenges stated above in order ensure the adoption of safe hygienic practices. The various stakeholders should be brought together to work in collaboration and co-operation to benefit the communities in adopting safe hygienic practices. International experience shows that once people's basic needs are met, sanitation improvements can easily take place². Promoting the adoption of safe hygienic practices cannot be done in isolation and indifference to the immediate needs of communities. Therefore, a holistic, integrated and inclusive programme that incorporates the social and economic development of communities should be adopted. Integration requires the collaboration and cooperation of the various stakeholders together with the communities to determine the assets, activities, adaptive strategies and needs of communities for the adoption of safe hygienic practices. The results of this study cannot be generalised due to the nature of the sampling

design and qualitative procedure. Nonetheless, the study has revealed key motivating factors for adoption of safe hygienic practices which have implications for policy-makers, programme planners, academics, and practitioners in the field of water and sanitation in terms of policy and programme formulation, curriculum development, and service delivery. They (1) Serve as a knowledge base on which the national, provincial, local governments as well NGOs and the private sector can build strategies for promoting good sanitation practices (2) Contribute to the development of well informed integrated development plans (IDP's) and Water Services Development Plans (WSDP) and (3) Enhance improved understanding and utilisation of participatory approaches in health and hygiene promotion.

CONCLUSION

The objective of the study was determine factors that could motivate people to adopt safe hygienic practices. There were several key issues raised in the study which require appropriate strategic interventions. Appropriate strategic interventions to ensure adoption of safe hygienic practices may include ensuring availability of regular water supply and related sanitation facilities, encouraging stakeholder participation, introducing proper sanitation technologies and improvement of consumer sanitation knowledge. All of the above-mentioned necessitate a co-ordinated and interdisciplinary effort among relevant stakeholders. Stakeholders may include government departments, NGOs, clinics, pharmacies, local businesses, schools, religious organisations, political organisations, and traditional organisations. Improved co-ordination and communication between various stakeholders will optimise resource utilisation, thus leading to sanitation promotion and consequently to adoption of safe hygienic practices.

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REFERENCES

1. DWAF **White Paper on Water Supply and Sanitation Policy**. Government Printers: Pretoria. 1994
2. DWAF **White Paper on Basic Household Sanitation**. Government Printers: Pretoria. 2001
3. Alcock PG. **A water resources and sanitation systems source book with special reference to Kwa-Zulu Natal**. Part 6. WRC Report No 384/6/99. 1999

4. The Constitution of the Republic of South Africa, Act No.108 of 1996. Pretoria: Government Printers
5. Duncker LC. The KAP Tool for hygienic: a manual on knowledge, attitude and practices study for hygienic awareness in the rural areas of South Africa. WRC Report No. TT 144/00. May 2001
6. Solo TV, Perez E and Joyce S. **Constraints in providing water and sanitation services to the urban poor.** WASH Technical Report No. 85, Task No. 338, Project No. 936-5973. March, 1993.
7. Morgan, J. 2001. **Environmental health promotion capacity building: a training guide based on CARE's Hygiene Promotion Manual.** WELL Task 515. London: London School of Hygiene and Tropical Medicine.
8. Evaluation of rural water supply and sanitation programme in Bangladesh. Udenrigsministeriet. <http://www.um.dk/danida/evalueringsrapporter/1999.2/a1.asp>. DANIDA Report 2000. Accessed 27 May 2002
9. IRC. Terrorism, poverty and inequality: risks to water and sanitation sector. Source Bulletin, Vol 20. <http://www.wsscc.org/source/bulletin/sb20.html>. December 2001. Accessed on 24 May 2002
10. Hogrewe W, Joyce SD and Perez EA. **The unique challenges of improving peri-urban sanitation.** WASH Technical Report No.86, Task No. 339, Project No.936-5973. 2001.
11. The African Water Page. **Financing of community water and sanitation services. The fourth country level workshop in East and Southern Africa.** Mpumalanga Province, South Africa. http://www.wsp.org/English/afr/mpumalanga/keynote_ghosh.html. 1999. Accessed on 13 May 2002
12. Barbie E & Mouton J. The practice of social research; South African edition. Cape Town: Oxford. 2002
13. Bless C & Higson-Smith C. Fundamentals of social research methods. An African perspective; 2nd edition. Cape Town: Juta. 1995
14. De Vos AS Research at grassroots. A primer for the caring Professions. Pretori: JL van Schaik. 1998
15. Krueger RA. Focus groups: A practical guide for applied research. Second edition. London: SAGE Publications Inc. 1994
16. Poggendoel M. Data analysis in qualitative research. In De Vos, AS (ed) Research at grassroots: A primer for the caring professions. JL. Van Schaik Publishers, Pretoria. 1998
17. Miles MB & Huberman AM. Quantitative data analysis, 2nd edition. Thousand Oaks: SAGE Publications Inc. 1994
18. Clarke, MA; Riley, MJ; Wilkie, E & Wood, RC 1998: Researching and writing dissertations in Hospitality and Tourism. London: International Thompson Business Press.
19. Hall D & Hall I. **Practical social research: Project work in the community.** London: MacMillan Press, Ltd. 1996.
20. Black M. **Thirsty cities: water, sanitation and the urban poor.** Water Aid, London. 1996.
21. Simpson-Hebert and Wood. **Sanitation Promotion.** WHO/EOS/98.5 1998.
22. UNICEF. **Towards better programming.** A Sanitation handbook. Water, Environment and sanitation Technical guideline series no.3. EHP Applied Study No. 5. ID No. UNICEF/PD/WES/98-3. www.unicef.org. April 1997. Accessed on 13 May 2002.
23. WSSCC. **Sanitation Promotion.** Working group on promotion of sanitation. 1998.
24. Bhatia R and Falkenmark M. **Water Resource Policies and the Urban Poor: Innovative approaches and policy imperatives.** Water and Sanitation currents, water and sanitation programme. Washington, DC. 1993