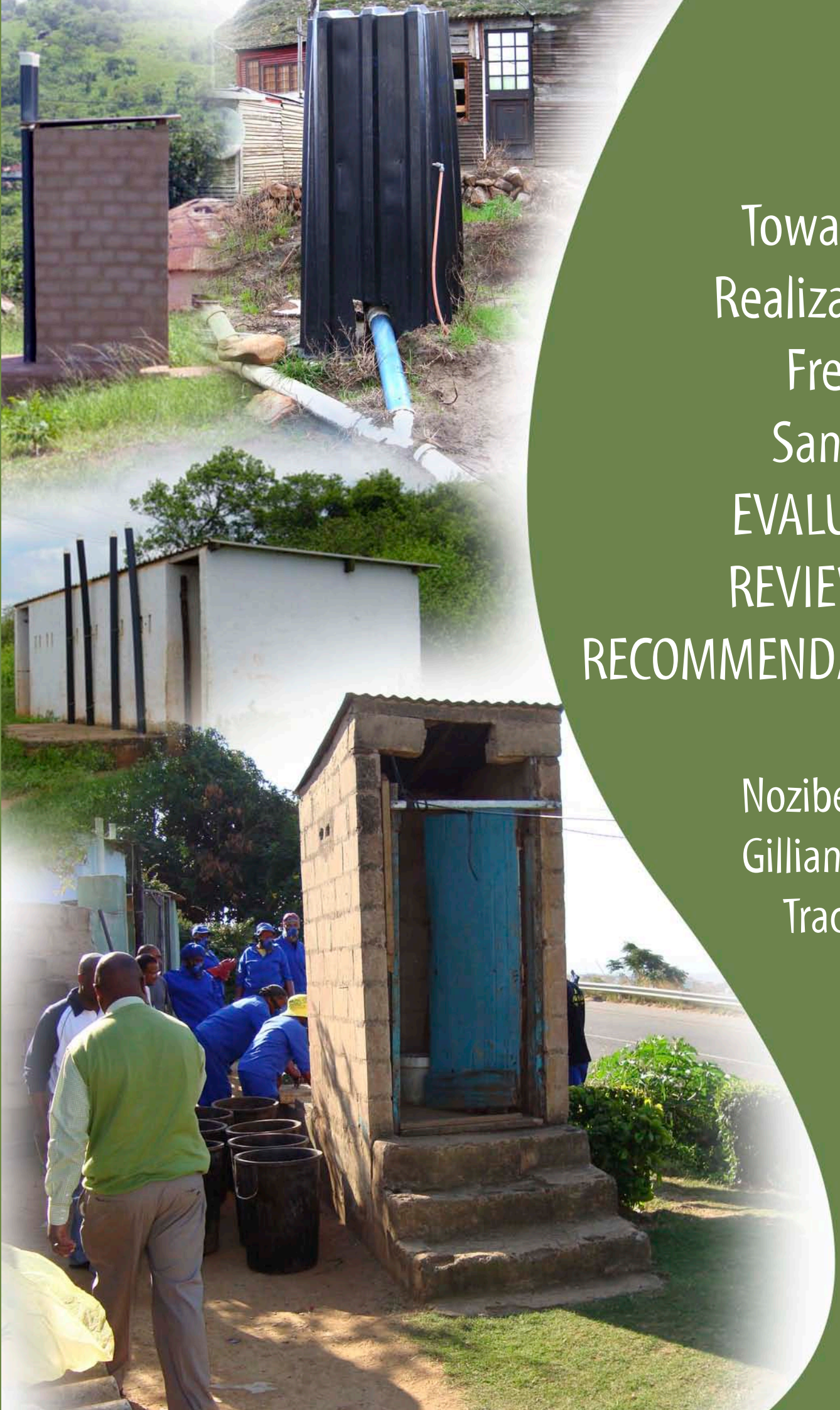


Towards the Realization of Free Basic Sanitation: EVALUATION, REVIEW AND RECOMMENDATIONS

Nozibele Mjoli,
Gillian Sykes &
Tracy Jooste

WATER RESEARCH COMMISSION
TT 422/09

TOWARDS THE REALIZATION OF FREE BASIC SANITATION: EVALUATION, REVIEW AND RECOMMENDATIONS

Report to the

Water Research Commission

by

NOZIBELE MJOLI, HLATHI DEVELOPMENT SERVICES

and

GILLIAN SYKES AND TRACY JOOSTE, PDG

WRC Report No. TT 422/09

November 2009

Obtainable from

Water Research Commission
Private Bag X03
Gezina
0031, South Africa

orders@wrc.org.za

The publication of this report emanates from a project entitled: Towards the realization of free basic sanitation: Evaluation, Review and Recommendations
(WRC Project No K5/1743)

ISBN 978-1-77005-900-9
Printed in the Republic of South Africa

EXECUTIVE SUMMARY

Background

Access to a basic sanitation service as a right is enshrined in the Constitution of South Africa (Act 108 of 1996). In terms of Section 24(a), '*everyone has a right to an environment that is not harmful to their health or well-being*.' This clause has been interpreted as a right to basic sanitation for all.

Municipalities have a constitutional mandate of ensuring access to water and sanitation services for all including the poorest households. Despite the drafting of a Free Basic Sanitation (FBSan) strategy by the Department of Water Affairs & Forestry (DWAF) in mid-2004, the process of approval for this strategy has been slow due to the realization by government that provision of free basic sanitation service was more complex than free basic water.

Municipalities are faced with a challenge of balancing financial resource allocation to the eradication of basic sanitation infrastructure backlog by 2010 and provision of free basic sanitation services to the poor. Therefore, there is a need to identify successful and cost-effective approaches of implementing subsidies for basic sanitation infrastructure and provision of free basic sanitation services. Financial models and innovative strategies are required to assist the municipalities to provide sustainable free basic sanitation services to poor households and to finance ongoing O&M for these services. Good practice must be identified and scaled-up where possible.

The aim of this study was to assess the experience of municipalities in the implementation of FBSan services and to develop economic and financial models for sustainable FBSan service. Based on the findings of the study recommendations were made for improving the delivery of FBSan services to poor.

Objectives

The objectives of the study included the following:

- Consolidation of international experience of subsidized and/or free basic sanitation services.
- Evaluation of current subsidy arrangements and approaches for their appropriateness within the context of accelerated sanitation service delivery and identification of gaps and emerging problems.
- Assessment of the costing of sanitation schemes and the MIG budget ceilings for the capital cost of sanitation for the poor.
- Assessment of ongoing operation and maintenance costs for sanitation schemes and the affordability of operation and maintenance (O&M) for the different sanitation types.
- Compilation of an economic assessment of the costs associated with O&M of on-site sanitation systems.
- Assessment of all subsidy options available to municipalities to be able to subsidise O&M for the poor.
- Provide recommendations on the economics of the Free Basic Sanitation policy, particularly for ongoing O&M.
- Develop strategies and recommendations on sanitation subsidy to severely marginalized individuals and households, e.g. aged, sick, disable, immuno-compromised, etc.
- Develop innovative strategies and mechanism to facilitate the implementation of the subsidy.

Scope

The study has used case studies and surveys of selected municipalities to evaluate the implementation of the free basic sanitation policy with special focus on benefits for the poor households and financial sustainability of FBSan services. Economic and financial modelling was undertaken to assess the financial viability of the FBSan for the different categories of municipalities based on the information obtained from the in-depth analysis of selected case studies. The findings from the study have been used to make recommendations for improving the delivery of free basic sanitation services in order to target the poorest households and other vulnerable groups.

Limitations

The study was constrained by the lack of accurate and reliable demographic data. This had implications for the level of modelling that could be undertaken when analysing the financial and economic sustainability of the FBSan services. The study has relied on the information from 2001 Census which was adjusted for population growth and inflation.

Methodology

A review of national and international literature on the provision of subsidized sanitation services was conducted in order to identify good practice. The case study methodology was used to evaluate the implementation of free basic sanitation services in 8 selected municipalities. To substantiate the findings from the 8 case-study municipalities, a survey of FBSan services was conducted in 17 District municipalities from Eastern Cape, KwaZulu-Natal and Limpopo provinces. These three provinces were selected because collectively they have the highest number of households without access to basic sanitation infrastructure. Stakeholders were also engaged to assess their perceptions of the implementation of FBSan services.

Two separate modelling exercises were undertaken to explore different aspects of implementing the FBSan strategy: the first modelling exercise used the case studies to investigate the funds likely to be available to the sanitation service within the context of the entire municipal suite of services. The second modelling exercise used the results of the first modelling exercise, together with desktop cost analysis, to inform a national analysis of the projected operational costs associated with current service level decisions under different operational assumptions.

A review of international and national experience on the provision of subsidized sanitation services to the severely marginalized individuals and groups was conducted to identify good practice. The findings of this review were used as a basis for the development of guidelines for sanitation subsidies for the severely marginalized individuals and groups. (For detailed guidelines refer to Appendix A).

Key findings and recommendations

Institutional and policy aspects

The importance of the municipal context and the need for flexibility

Free basic sanitation services were affordable for the metropolitan municipalities such as City of Tshwane and Cape Town because they have a greater degree of flexibility in terms of cross-subsidization as well as a greater level of autonomy in designing an approach to FBSan independent of guidance from DWAF. Less capacitated municipalities such as

Amathole and Vhembe District Municipalities (DMs) on the other hand expressed a need for greater guidance and assistance from DWAF in dealing with the challenge of providing free basic sanitation services to poor households.

Definition of basic sanitation services

There was a lack of common understanding of the definition of a basic sanitation service within the context of access to basic sanitation services as a constitutional right. There were no guidelines for minimum acceptable standards for a basic sanitation service that meets the constitutional obligation.

Lack of clarity on institutional responsibility for ongoing hygiene education

Ongoing hygiene education and awareness appeared to be falling between the cracks, with both environmental health department and water services department assuming that the other was responsible for this component of a basic sanitation service. Most of the municipalities did not include ongoing hygiene awareness as a component of the FBSan service. However, all the case-study municipalities provided hygiene awareness programmes as a once-off intervention during the implementation of the basic sanitation infrastructure.

Lack of clarity on the purpose of the FBSan strategy

There was a general lack of clarity regarding the purpose of the FBSan strategy. It was seen mainly as a way of providing basic sanitation infrastructure and eradication of the sanitation backlogs, rather than achieving an ongoing sustained improvement in sanitation and health.

Unrealistic targets

The 2010 sanitation target which was set by national government was largely unachievable for the majority of case-study municipalities, particularly in dense urban informal settlements, which are constantly growing, and in rural areas with high backlogs in poor and difficult to service areas.

The importance of reliable data

The literature review showed that the initial stage of the development of pro-poor subsidies required a substantial financial and time contribution, largely to develop a thorough understanding of the intended beneficiaries, their willingness to pay for services, best approaches for targeting the subsidies to the poorest households and how to minimize the administrative costs of subsidy implementation.

Recommendations

- The FBSan strategy must be flexible enough to allow Water Services Authorities (WSAs) to interpret and implement the strategy according to their local context. National guidelines should not be overly prescriptive, but should offer support and guidance on recommended approaches.
- The current “one municipality, one policy” approach tends to favour urban households over poorer rural households. Municipal policy needs to explicitly recognise the different challenges of providing basic sanitation services to these different settlement types. Neglecting to do so unfairly disadvantages rural households. A clear example of this is the use of indigent policies, which benefit primarily urban households who receive a monthly municipal bill, and are already relatively better off than those with no basic sanitation facilities.
- The definition of a basic sanitation service within the context of access basic sanitation services as a human right must be reviewed to provide guidance on the

minimum acceptable standard for a basic sanitation service level that meets the constitutional right to basic sanitation for the poor.

- A greater clarity on roles and responsibilities for ongoing hygiene promotion as a component of FBSan service is needed. The choice of responsible municipal department could be left to local discretion, but what is essential is that this task is differentiated from the H&HE provided during the toilet construction phase.

Demand-side aspects

Household demand for sanitation must continue to be stimulated

A demand for improved sanitation was essential to guarantee long-term sustainability of sanitation service. The sanitation implementation approach should respond to the specific project context in order to be successful. While supply-side factors might determine what was physically and financially feasible, achieving sustainability depended on the response of the sanitation programme to local demands, rather than to the parameters of what could be supplied.

Too much emphasis on hardware subsidies over software subsidies

The provision of toilets was not sufficient to achieve sustainable sanitation and improvement in public health, unless accompanied by improved hygienic behaviour and awareness. Municipalities were currently not paying enough attention to ongoing health and hygiene awareness campaigns as a component of free basic sanitation service.

Community and stakeholder participation

The buy-in and support of the communities were essential for long-term sustainability of improved sanitation services. Working with a wide network of stakeholders such as local business, local government and NGO structures had also proved to be a key element of success. It was important to realize that good hygiene practice went beyond hand washing and included cleaning and maintenance of the sanitation facility being used to ensure that it remained functional.

Measuring impact and long-term support

There was no monitoring and evaluation of the impact of free basic sanitation services on the improvement in the quality of life for the beneficiary communities. In addition to the counting of toilets, it was important to assess whether households obtaining new and/or improved sanitation facilities were adopting good hygienic practices; this was necessary for the achievement of full potential health benefits.

Recommendations

- The FBSan strategy should be amended to recognize that sustainable service provision is not simply a question of adequate funds, but rather of adequate demand.
- Municipalities should harness the energy and willingness of communities to be partners in the delivery of FBSan services and they should be encouraged to tap into community-based systems and innovation in order to promote community ownership and sustainability of sanitation facilities.
- All municipalities must recognize the importance of the integration of Health & Hygiene Education (H&HE) into the free basic sanitation service. User education and H&HE must be offered as part of the free basic sanitation service package rather than a once-off event limited to the provision of basic sanitation infrastructure. The

practice of training and employing local community health workers should be supported as part of integrating health and hygiene into the delivery of free basic sanitation services for the poor households, especially those living in dense urban informal settlements and rural areas.

- Beneficiary communities should be involved in the selection of basic sanitation options in order to ensure their buy-in and ownership of the sanitation facilities. Responsibilities for operation and maintenance of VIP toilets between the households and municipalities must be clarified.
- An effective monitoring and evaluation system must be implemented to evaluate the impact of FBSan services on the improvement in the quality of life for the poor households.

Subsidy targeting issues

Free basic sanitation services were not benefiting the poorest households

The approach followed by municipalities in the provision of free basic sanitation services to urban households with full waterborne sanitation systems excluded the majority of the poorest households that were not connected to the sewer networks. There were also no special subsidy arrangements for vulnerable groups such as physically disabled people and households affected by HIV/AIDS. The use of Equitable Share to subsidise free basic sanitation for all households irrespective of their socio-economic status limited the subsidy funds available to subsidise the poorest households and severely marginalized groups.

Community involvement in the design of pro-poor sanitation subsidies

Municipalities had not put enough effort in engaging the beneficiary communities in the design of the local FBSan strategy; instead, they had opted for a top-down approach. Consequently, the FBSan services were benefiting the 'haves' while the 'have nots' continued to live under squalid conditions with poor or no access to adequate sanitation services.

Management of the indigent register

Where indigent registers were used, municipalities needed more resources to verify and re-assess the indigent status of registered households. Social workers had to visit poor households at least twice a year to assess their indigent status. Resources were needed to communicate the free basic sanitation policy to all target communities.

Recommendations

- The primary target of the FBSan services should be the poorest households and other vulnerable groups such as people with physical disabilities and HIV/AIDS affected households. There is a scope for recognizing different levels of poverty in poor communities; this will ensure that scarce subsidies are targeted to the poorest households and the most vulnerable groups.
- The current practice of providing free basic sanitation services as part of a package of free basic municipal services under the indigent support policy should be encouraged.
- Municipalities should involve communities in the design of pro-poor sanitation subsidies because communities were better placed to make decision on how to distribute scarce subsidies and they were more capable of identifying the most vulnerable households in their communities.

Operational considerations

Lack of operational planning and data

Most surveyed municipalities did not have O&M plans for emptying full pits of VIP toilets and safe disposal of human waste or replacement of full VIP toilets where pit-emptying was not feasible. Most municipalities were focusing on the provision of basic sanitation infrastructure in order to meet the national sanitation delivery targets.

The impact of failure of municipalities to generate sufficient operational revenue

In the face of high cross-subsidy requirements, it was more likely that where municipalities were forced to provide FBSan services to the poor households, they would have to compromise on other aspects of service delivery to balance their budgets. Maintenance was already at chronically low levels and there was a danger that municipalities would be forced to neglect maintenance of existing assets if they were forced to provide free basic sanitation services.

Clarification of the responsibilities of households in O&M of VIP toilets

The draft Free Basic Sanitation strategy states that households would be responsible for some 'on-site' components of the sanitation facility but it does not indicate what these components would be.

Recommendations

- The national water services sector regulator must enforce and regulate the proper operation and maintenance VIP toilets to protect human health and the environment.
- The role of households in the maintenance of dry sanitation systems must be clarified.
- Better operational cost data based on actual use patterns for VIP toilets is required to improve planning for O&M of the VIP toilets.

Financing free basic sanitation services

Equitable share allocations are key to the sustainability of the FBSan services

The national financial modelling exercise showed that the ability to fund the FBSan services was very sensitive to certain assumptions, in particular the amount of ES available for the sanitation service relative to overheads and other services. While on a national scale the current amount of subsidy looked adequate, the challenge would be to ensure that aggregate national flows were directed to the right places, both in terms of poorer municipalities, and to sanitation services within these municipalities.

The impact of the local revenue base and poverty levels on financial sustainability

The study has clearly shown that in the presence of high poverty levels and a limited revenue base, it would not be possible to cover the costs of service provision without imposing punitively high service charges on high-income households and businesses in these areas. Municipalities were unlikely to be willing to levy such high tariffs, especially on higher income households and businesses, which could possibly re-locate elsewhere, further limiting the local revenue base.

The possible impact of FBSan policy on local economic development

If municipalities tried to implement the policy in the context of large backlogs, high poverty levels and a limited revenue base, they would have to increase tariffs for higher income households and businesses to a degree that could harm local economic development and this would dissuade these municipalities from charging very high tariffs.

Sustained economic growth was essential for the increase in Equitable Share allocations

The sustainability of the current FBSan strategy relied on ES revenue that could grow at a sufficient pace to match the growing service base, and increasing operational costs. If the current economic downturn continued and predictions were that it might take a few years for economy to recover, it would not be possible for national government to continue to increase ES allocation necessary to meet the increasing operational costs. This would have profound consequences for the provision of FBSan services in municipalities with high levels of poverty that were heavily dependent on ES funds.

Perverse economic incentives for the poor

Some case-study municipalities were providing a 100% rebate on the monthly sanitation bill of the registered indigent households. This practice could lead to a perverse incentive for the poor households because they did not have an incentive to use water services efficiently. This could be avoided by imposing a minimum fee to be paid by the poor households who exceeded the monthly FBSan limit.

The importance of cost recovery and credit control measures

The financial modelling exercise assumed that consumers would pay the sanitation bills presented to them. However, it must be noted that municipalities were faced with an ongoing battle of improving cost-recovery levels.

Recommendations

- Most of the basic sanitation subsidy funds should be directed to the poor WSAs with weak revenue base. Equitable share grant should not only be based on the number of the poor households, but should also consider the cost of providing basic sanitation services under different local contexts.
- Only the poorest households and other vulnerable groups should be the primary beneficiaries of FBSan services.
- Indigent households provided with free basic sanitation services should be charged a minimum monthly fee linked to their use of the sanitation service so that they could have an incentive to use the service efficiently.

Technical considerations

- Most case-study municipalities were not planning for O&M of VIP toilets and this could pose a threat to long-term sustainability of basic sanitation services.
- There was a lack of consideration for the availability of local technical and financial capacity to operate and maintain sanitation systems.

Recommendations

- Municipalities should be encouraged to consider their local context (environmental, technical and financial aspects) when selecting sanitation technology options and the

beneficiary households must be consulted. The policy should be flexible enough to allow for a variety of options to be considered.

- Sanitation technology choices should be guided by local conditions, in consultation with households, with the upfront understanding of the operational responsibility to be borne by households. Until better operational data was available, pilot projects could be carried out with communities to test operational conditions, and to improve understanding of how to use and maintain the toilets.
- Where VIP toilets were the preferred option, the use of double VIP toilets should be promoted in rural areas to ensure long-term sustainability. However, in dense urban settlements the VIP technology offered limited advantage as a long-term sanitation solution.

Recommendations for further research

- There is a need to conduct studies to assess whether the household monthly income limit was the best method for identifying the poorest households. These studies should investigate alternative methods of targeting services to the poor such as geographic location or property value based methods. The goal should be to ensure that the maximum number of poorest households actually benefit from the selected targeting method for pro-poor subsidy.
- Research must investigate the actual operational costs and usage patterns of VIP toilets in order to test if the current costing assumptions, such as 5 to 8 year pit life were valid. There were also concerns that the format required by DWAF might encourage underestimation of actual operating costs at the project approval stage.
- Comprehensive guidelines should be developed to assist municipalities to set up institutional and funding arrangements for the desludging of VIP toilets and safe disposal and treatment of human excreta.
- Research must be conducted to investigate the sanitation needs of people with disabilities, the elderly and other severely marginalized people and strategies for accelerating delivery of subsidized sanitation services to these vulnerable groups must be developed.
- Reliable data was required on operating assumptions and conditions for dry on-site sanitation technologies in different contexts, to enable municipalities to improve their planning for ongoing O&M.

Key messages

The overall conclusion from the study is that the provision of a Free Basic Sanitation Service to all households is not financially viable for all categories of municipalities. However, FBSan service for poor households is possible in metros because of the strong revenue base and the possibility of cross-subsidies. District municipalities that serve large poor rural populations cannot afford to provide FBSan services because they do not generate sufficient revenue from the user charges, combined with very limited ability to generate local revenues to meet their municipal service obligations.

The following key messages emanated from the study:

- The poorest households without access to waterborne sanitation systems were not benefiting from FBSan services because municipalities were providing FBSan services to households already connected to the sewer networks.
- The term “free basic sanitation services” should be changed to “pro-poor sanitation” subsidy to emphasize the focus on the poorest households and the cost associated with the provision of FBSan services.
- The current levels of Equitable Share was insufficient to enable municipalities with high backlogs and a limited revenue base to provide FBSan services to the poorest households on a sustainable basis.
- Sustained economic growth was necessary to support the continued increase in the equitable share allocation to fund free basic sanitation services for the poor municipalities.
- The provision of FBSan was constrained by the fact that poor municipalities with small urban populations and limited economic activity could not use cross-subsidies because high tariffs could harm local economic development.
- Failure to adequately priorities and allocate funds to O&M could lead to the eventual failure of the sanitation systems.
- Ongoing H&HE should be integrated into the provision of the FBSan services instead of being limited to the construction phase.

Capacity building

The study contributed to the capacity building for the following black researchers:

Tracy Jooste conducted the FBSan case-study analysis and was involved in the financial modeling exercises.

Raymond Nenzhelele was introduced to sanitation research.

Knowledge dissemination

- The project leader presented a paper on the preliminary findings of the study to a DWAF National Sanitation Summit that was held on 26 May 2008 at the Sandton Convention Centre.
- The project leader presented a paper entitled, ‘Free Basic Sanitation Services- South African experience’, at the IRC Sanitation Symposium that was held in Delft, The Netherlands, 19-21 November 2008. The paper has been selected for inclusion in a book to be published by IRC for best papers presented at the IRC Symposium.
- The findings of the study were presented to a Free Basic Sanitation meeting of officials from the Department of Water Affairs and Department of Cooperative Governance and Traditional Affairs.
- A paper on the research findings has been accepted for presentation as a poster at the WISA 2010 conference to be held in April 2010, Durban.

ACKNOWLEDGEMENTS

This report emanated from a project funded by the Water Research Commission, entitled *Free Basic Sanitation*: *Is it possible*? (WRC Project No. K5/1743)

The authors would like to express their sincere gratitude to the following people who contributed to the success of the project:

1. WRC Project Reference Group

JN Bhagwan	Water Research Commission (Chairperson)
Ms L Tyers	Development Systems Engineering
FB Stevens	eThekwini Metro
Ms C Damons	Dept of Cooperative Governance and Traditional Affairs
Ms P Selowa	Dept of Cooperative Governance and Traditional Affairs
Mr W Moraka	SALGA
Ms L Mudunungu	SALGA
Ms T Sigwaza	Dept of Water Affairs
C Mazubane	Dept of Water Affairs
B Mbentse	Dept of Water Affairs
Ms A Manus	Dept of Water Affairs
Dr L Smith	The Mvula Trust
M Kholisa	SALGA

2. Municipal officials who were interviewed for this study.

3. Sanitation sector stakeholders who were interviewed for the project.

4. Stakeholders who participated in the national sanitation stakeholder workshop.

5. Members of the project team who assisted with the interviews of municipal officials- Sibusiso Mjoli, Raymond Nenzhelele, Brian Modiba and Vuyiseka Mlumbi.

6. Jay Bhagwan, WRC research manager, for his guidance and support for the project.

TABLE OF CONTENTS

APPENDICES B-H appear on the attached CD

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ADM	Amathole District Municipality
CCT	City of Cape Town
CDW	Community Development Worker
CLTS	Community Led Total Sanitation
CPI	Consumer Price Index
DBSA	Development Bank of Southern Africa
DFID	Department of International Development
DMs	District municipalities
DPLG	Department of Provincial and Local Government
DWAF	Department of Water Affairs and Forestry
EC	Eastern Cape
EPWP	Expanded Public Works Programme
ES	Equitable Share
FBSan	Free Basic Sanitation
HHs	Households
HIV/AIDS	Human Immuno Virus/Acquired Immuno-Deficiency Syndrome
H&HE	Health and hygiene education
KZN	KwaZulu-Natal
LMs	Local municipalities
MAP Water	Maluti a Phofung Water Pty Ltd.
MDG	Millennium Development Goal
MIG	Municipal Infrastructure Grant
MSFM	Municipal Services Finance Model
NGO	Non-Governmental Organization
O&M	Operation and maintenance
PDG	Palmer Development Group
PMU	Project Management Unit
SFWS	Strategic Framework for Water Services
VIP	Ventilated improved Pit
VIDP	Ventilated improved double pit latrines
WSA	Water Services Authority
WSOTS	Water Services Operating Transfer Subsidy
WSP	Water Services Provider
UDS	Urine diversion sanitation system

INTRODUCTION

1.1 Background and context

The South African democratic government has prioritized the provision of basic sanitation services to millions of people that were denied access to these basic services under the apartheid government. The right of access to basic sanitation services is enshrined in the Constitution of South Africa (Republic of SA, 1996). In terms of Section 24(a), '*everyone has a right to an environment that is not harmful to their health or well-being*.' Access to a basic sanitation service as a human right is one of the policy principles of the White Paper on Basic Household Sanitation (DWAF, 2001).

Municipalities have a constitutional obligation to ensure access to basic sanitation services for all households including the poor. This obligation is enforced by the Municipal Systems Act No.32 of 2000; in terms of section 73(1c) municipalities are obliged to give effect to the provisions of the Constitution and to ensure that all members of the local community have access to at least the minimum level of basic municipal services. Section 74(2c) of this Act states that special tariffs or life-line tariffs for low-level use of services should be imposed to provide basic services to poor households (Department of Provincial and Local Government, 2000). In terms of the legislation, poor households who cannot afford to pay for basic sanitation services must not be excluded from benefiting from improved sanitation services.

Unlike the free basic water policy which has been implemented successfully by most municipalities, the implementation of free basic sanitation (FBSan) services has turned out to be more difficult to implement. Municipalities are faced with a challenge of balancing the provision of free basic sanitation services with the eradication of basic sanitation infrastructure backlog which was estimated at 3.3 million households in March 2008 (DWAF WSNIS). The target for the eradication of the basic sanitation backlog by 2010 set in the Strategic Framework for Water Services (DWAF, SALGA & DPLG, 2003) seems increasingly unachievable. The aim of this study was to evaluate the approaches followed by municipalities in the provision of free basic sanitation services and to assess the implications of free basic sanitation services on the financial viability of municipalities and household affordability. Financial and economic modelling was undertaken to assess the financial and economic sustainability of FBSan for the different categories of municipalities.

The following definition of basic sanitation service used in this study was taken from the Strategic Framework for Water Services of 2003:

> *"A basic sanitation service is the provision of a basic sanitation facility which is easily accessible to a household, the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary, and the communication of good sanitation hygiene and related practices".*

1.2 Objectives

The objectives of the study included the following:

- Consolidation of international experience of subsidized and/or free basic sanitation services.
- Evaluation of current subsidy arrangements and approaches for their appropriateness within the context of accelerated sanitation service delivery and identification of gaps and emerging problems.
- Assessment of the costing of sanitation schemes and the Municipal Infrastructure Grant (MIG) budget ceilings for the capital cost of sanitation for the poor.

- Assessment of ongoing operation and maintenance (O&M) costs for sanitation schemes and the affordability of O&M for the different sanitation types.
- An economic assessment of the costs associated with O&M of on-site sanitation systems.
- Assessment of all subsidy options available to municipalities to be able to subsidize O&M for the poor.
- Recommendations on the economics of the Free Basic Sanitation policy, particularly for ongoing O&M.
- Development of strategies and recommendations on providing a sanitation subsidy to severely marginalized individuals and households, e.g. the aged, sick, disabled, immuno-compromised people.
- Development of innovative strategies and mechanisms to facilitate the implementation of the subsidy.

1.3 Structure of the report

Chapter 1 presents background, context, objectives and project limitations with special reference to the problem of availability of accurate and reliable data for the economic and modelling of free basic sanitation services for the different categories of Water Services Authorities (WSAs).

Chapter 2 outlines the methods used to conduct the study.

Chapter 3 reviews international and national experience of pro-poor sanitation subsidies.

Chapter 4 presents the findings from the evaluation of the implementation of free basic sanitation services in selected municipalities.

Chapter 5 presents the results of financial and economic modelling exercise of FBSan and its implications on financial viability of FBSan strategy for the municipalities especially the poor WSAs that serve large poor rural populations.

Chapter 6 presents recommendations for the review of the current National Free Basic Strategy based on the findings from the study.

Chapter 7 presents conclusions and recommendations for improvement in the delivery of FBSan services in order to ensure long-term financial viability for WSAs.

Chapter 8 presents key messages that emanated from the study.

Guidelines for sanitation subsidies to severely marginalized individuals and groups are presented in Appendix A.

1.4 Project limitations

The study was constrained by the lack of accurate and reliable information. This had implications for the level of modelling which could be undertaken when analysing the financial and economic sustainability of the FBSan strategy. The three major areas that require special mention include:

- household income,
- service level information by settlement type, and
- accurate operational cost data.

1.4.1 Household income data

A key constraint in modelling household income and poverty levels is the lack of updated information. The best source of information available remains the 2001 Census, which contains household income in categories where income doubles between each category.

For example, the categories are:

- None
- R0 to R400 per household per month
- R401 to R800 per household per month
- R801 to R1600 per household per month
- R1601 to R3200, etc.

For the purposes of determining each municipality's Equitable Share allocation in the annual Division of Revenue, National Treasury uses a formula, defined as the number of households earning less than R800 per month, based on 2001 Census information.

While for purposes of indigents' registers, individual municipalities may use different amounts, for modelling purposes we are limited by the information at our disposal.

It is therefore important to note that the poverty definition used most frequently in this report, namely R800 per household per month, represents **a proportion of households,** (the poverty level in 2001) rather than an absolute income definition of poverty.

Using the official CPI core inflation index, R800 in 2001 Rand is roughly equivalent to R1, 200 in 2008 Rand (see the table below). For the purposes of modelling, the proportion of poor households is assumed to have remained unchanged since 2001.

Table 1: Census 2001 Poverty definitions adjusted using CPI data

	CPIndex: core inflation, national		**Monthly household income – category 1, showing the effects of inflation**	**Monthly household income category 2, with inflation**
	2000=100	June 2001 = 100		
Jun-01	107.5	100.0	R800.00	R1,600.00
Jun-07	147.9	1.38	R1,100.65	R2,201.30
Jun-08	165.6	1.54	R1,232.37	R2,464.74

The Stats-SA Income and Expenditure Survey is imputed income (based on expenditure), and is not equivalent to the income measure used by National Treasury or municipalities in determining the poverty cut-off.

1.4.2 Urban and rural municipal service provision

A key cost-driver of the model used in the financial analysis of the case-study municipalities (the MSFM, or Municipal Services Finances Model) is the distribution of households in settlement types of differing densities. The costs of providing a given service, such as waterborne sanitation, in a dense urban area are very different to that of a rural area with a dispersed population. An understanding of the service level profile by settlement type, or the number of households using waterborne sanitation systems in urban areas relative to urban areas, is essential to enable accurate modelling of operational costs.

This information is available from the 2001 Census, but it has not been updated in the 2007 Community Survey, and current indications from Stats-SA are that this information will not be collected in future.[1]

The lack of rural versus urban data is a key concern, in particular due to the difficulty of addressing rural versus urban backlogs – while emphasis remains on the number of households served, there is a danger of prioritising urban households moving up the ladder versus the eradication of the rural sanitation infrastructure backlog. It will also prove slower to serve rural households, and municipalities under pressure to deliver on a nationally driven programme are being incentivised to deliver numbers, rather than "real" provision of free basic sanitation services.

Data on urban versus rural consumers will be key to avoid this, and it is of great concern to the authors of this report that the next Census in 2011 (at the time of writing) does not intend to provide this data. Without this information, it will be very difficult to monitor and ensure that scarce resources are being directed to where they are most needed.

1.4.3 Operational cost information

Cost information, particularly with regard to operational costs, remains highly uncertain. The analysis has drawn from the best available data, but a key weakness is the uncertainty surrounding actual operational costs. For example, as the national level analysis shows, actual usage patterns and the rate at which pits fill up vary widely, resulting in very different annual operating costs for on-site services.

Cost information is also not available according to settlement type. This, combined with the lack of settlement type information available from Stats-SA, meant that the operational costs of providing urban and rural sanitation services could not be modelled separately at the national level.

[1] Extract from Stats SA's Community Survey 2007: Municipal data on household services, pg ii, Report No. 03-01-22 (2007)

"The dawn of South Africa's new dispensation in 1994 witnessed the establishment of the Municipal Demarcation Board (MDB). In executing their mandate the board created a spatial design that would leave no part of the country outside a jurisdiction of a municipality. This definition of the politico-economic space eliminated the distinction between urban and rural areas which historically were reported on. Statistics South Africa therefore is not in a position to provide population results in terms of urban and rural population."

2. METHODOLOGY

2.1 Literature review

The literature review consisted primarily of an internet search of available literature. The following internet searches were conducted in the course of this investigation:

- "free basic sanitation"
- "free basic sanitation" – restricted to non-South African websites
- subsidised sanitation"
- "sanitation subsidies"
- "basic sanitation"
- Sanitation subsidies economic growth.

Specific searches were also undertaken for literature from countries thought to be of relevance to the South African context. These included Australia, India, Bangladesh and Chile.

However, it quickly became apparent that in terms of how FBSan was understood in SA, there was no international literature or precedent to review. The search was therefore broadened to explore the following aspects in particular:

- the use of sanitation subsidies aimed at promoting access to sanitation, particularly to the poor, and
- the identification of factors contributing to successful sanitation projects, and the role of subsidies in this success.

The review explored how a basic sanitation service was understood, both in South Africa and internationally. It addressed the different aspects of subsidies which needed to be considered, such as identifying the recipients, determining the extent of subsidisation required, and agreeing on what aspects should be subsidised.

Ultimately the FBSan strategy is aimed at achieving a sustainable improvement in access to sanitation services for all. As international experience suggests that subsidies alone are insufficient to ensure sustainable sanitation service, the other key success factors which have emerged from these experiences were explored.

The final sections highlighted the current draft Free Basic Sanitation strategy in South Africa, and identify possible questions that should be used in analysing the success with which municipalities have applied the FBSan principles to date.

2.2 Case studies of selected municipalities

An in-depth analysis of the implementation of free basic sanitation service was conducted in 8 case studies of selected municipalities and the point of departure for the analysis was within the context of access to a basic sanitation service as a Constitutional right. The following elements were assessed:

- Free basic sanitation policy of the municipality – how the free basic sanitation service was provided, who benefited and how were the poor households targeted with FBSan services?
- Eradication of basic sanitation backlog – plans for meeting the 2010 sanitation target;
- Linkage of free basic sanitation to poverty reduction and job creation – how the poor were benefiting from the sanitation infrastructure projects?

- Integration of health and hygiene in the delivery of FBSan services;
- Funding arrangements for FBSan services;
- Operation and maintenance plans for sanitation, especially VIP toilets;
- Challenges faced by municipalities in the delivery of free basic sanitation services.

Selection of case studies

Case-study municipalities were selected to represent the three different categories of municipalities, (2 category A's or metropolitan municipalities, 3 category B's or Local municipalities and 3 category C or District municipalities), 7 provinces in total were represented and municipalities dominated by poor rural households (Ugu, Amathole and Vhembe DMs) were included.

Table 2: Profile of the case-study municipalities

Municipality	Number of HHs (DWAF 2008)	Sanitation backlog figures	Description
City of Cape Town (Western Cape)	920 000	56 369	Metro, close to eradication of the backlog
City of Tshwane (Gauteng)	680 000	120 000	Metro with a huge backlog in dense informal settlements
Amathole DM (Eastern Cape)	240 000	120 000	DM with a large poor rural population without basic sanitation
Ugu DM (KwaZulu-Natal)	170 000	31 011	84% of the population is rural and poor
Vhembe DM (Limpopo)	300 000	180 000	94% of the population is rural and poor
Breede Valley LM (Western Cape)	35 008	1567	Small LM with urban population and commercial farmers
Mbombela LM (Mpumalanga)	130 000	59 082	Biwater concession- WSP for Nelspruit , mixture of urban and rural population
Maluti A Phofung LM	97 957	32 869	LM with a history of management contracts, mixture of urban and poor rural population

Source of population and backlog figures is DWAF Water Services National Information System

Methods used to collect data from case-study municipalities

A list of standardized questions was used to guide interviews with the relevant municipal officials (Appendix H). The following methods were used to collect data on the implementation of free basic sanitation policy:

- Face–to-face interviews with municipal officials responsible for water and sanitation services and financial managers;
- Telephonic interviews with municipal officials;

- Electronic communication used to get responses from managers who were not available for either face-to-face or telephonic interviews;
- Review of the Integrated Development Plans, Water Services Development Plans and other relevant documents from the municipalities.

2.3 Survey of free basic sanitation services in 17 District municipalities

A telephonic survey was undertaken for 17 District municipalities in Eastern Cape, KwaZulu-Natal and Limpopo provinces to assess progress and challenges faced by these municipalities in the implementation of FBSan services. These three provinces were selected because collectively they have the largest number of households without access to basic sanitation infrastructure. The DMs that are Water Services Authorities to several local municipalities were targeted for the interviews to get a broader picture of challenges faced by municipalities that serve large populations of poor rural communities with no access to basic sanitation infrastructure.

2.4 Stakeholder engagement

Face–to-face interviews were used to engage key national sanitation sector stakeholders and a national stakeholder workshop was convened to solicit additional inputs from a broader stakeholder group. The stakeholders included representatives of national government departments; SALGA, municipalities, DBSA, sanitation practitioners and researchers (Refer to Appendix F for a list of participants in the CD attached to this report).

2.5 Financial and economic assessment

Two separate modelling exercises were undertaken to explore different aspects of implementing the FBSan strategy: the first modelling exercise used the case studies to investigate the funds likely to be available to the sanitation service within the context of the entire municipal suite of services. It also investigated the implication of this for individual households.

The second modelling exercise used the results of the first modelling exercise together with desktop cost analysis, to inform a national analysis of the projected operational costs associated with current service level decisions under different operational assumptions.

2.5.1 Modelling the finances of case-study municipalities using the MSFM

Rather than focusing only on the finances of the sanitation service, or even water services, the modelling looked at the entire suite of municipal services. The reason for doing so was to ensure that all the demands placed on municipalities were taken into account. For example, while it was commonly felt that approximately 15-25% of the Equitable Share (ES) allocation should be directed towards sanitation, in reality some municipalities relied on ES funds to finance their core activities, such as Governance and Administration, and they simply did not have sufficient ES funds left over to adequately fund service provision to the poor. Looking at the sanitation account in isolation and assuming that a portion of the ES would be available, would therefore not be a true reflection of the financial burden and pressures facing municipalities.

To perform the analysis, an existing model, the Municipal Services Finances Model (MSFM) developed by the Palmer Development Group (PDG) over several years with the assistance of the DBSA, DWAF and DPLG, was used to analyse the financial situation in each of the case-study municipalities. More details on the workings of the model are contained in Appendix E in the CD attached to this report.

2.5.2 National operating cost model

The national modelling exercise focuses on the operational implications of rolling out the Free Basic Sanitation strategy. A simple MS Excel model was developed to allow different scenarios to be easily tested. It investigated the sensitivity of the sustainability of sanitation services to certain assumptions, in particular with regard to:

- Operational assumptions, such as the rate at which pits fill up;
- Poverty levels;
- Real growth in the municipal Equitable Share, and the proportion allocated to sanitation;
- The choice of sanitation technology;
- Cross-subsidy assumptions.

A key factor behind the modelling was the realisation that many of the operational assumptions made to date had assumed best practice usage of the service. The model attempted to investigate the impact on service sustainability if this assumption was relaxed, for example, by shortening the lifespan of the pit. The model used only a sample of indicative service level types, and did not capture the subtleties of household size, number of consumer units per facility, or provincial variations. It rather focused on the operational implications of providing free basic sanitation to poor households, assuming the provision of one facility per household.

2.6 Development of guidelines for sanitation subsidies for the severely marginalized individuals and groups

An analysis of policy and legislative framework was conducted to assess the current national policy and legislative framework for the provision of basic sanitation services to severely marginalized groups and individuals.

A desktop review of international and national literature on the socio-economic impacts of different sanitation technology options on the severely marginalized individuals and groups was conducted. An in-depth analysis of documented case studies was undertaken to obtain a better understanding of challenges faced by the severely marginalized groups and to identify approaches followed to improve their access to basic sanitation services. Recommendations were made based on the outcome of the desktop review of policy and practice and stakeholder inputs (Refer to Appendix A for guidelines).

3. REVIEW OF NATIONAL AND INTERNATIONAL EXPERIENCE

3.1 Definitions of basic sanitation

The literature review began with an investigation of the different definitions of basic sanitation. The different international and local approaches to basic sanitation are discussed separately below.

3.1.1 International views on basic sanitation

The Millennium Development Goal Water and Sanitation Task Force have proposed the following definition of access to basic sanitation for consideration by the WHO/UNICEF Joint Monitoring Programme (JMP):

> *"Access to, and use of, excreta and wastewater facilities and services that provide privacy while at the same time ensuring a clean and healthful living environment both at home and in the immediate neighbourhood of users."*

The working definition applied to basic sanitation by the Millennium Development Goals Task Force is:

> *"The lowest-cost option for securing sustainable access to safe, hygienic and convenient facilities and services for excreta and sullage disposal that provides privacy and dignity while at the same time ensuring a clean and healthful living environment both at home and in the neighbourhood of users." (MDG Task Force, 2004).*

The definition introduces the following new elements:

- Wastewater management in addition to excreta disposal services;
- It takes access beyond the living environment at the household level to the neighbourhood living environment;
- It includes solid waste management as well, especially in the neighbourhood environment;
- It leads to neighbourhood-centred sanitation systems, rather than household-centred sanitation systems (Van Norden, 2007).

The 1998 Bangladesh National Policy for Safe Water Supply and Sanitation (NPSWSS) aims to achieve a goal of 100% sanitation coverage by 2010. Government policy facilitates access for all citizens to a basic level of service in sanitation, defined as 'one hygienic latrine' per household at an affordable cost.

According to Bangladesh's National Sanitation Strategy (2005) the term "100% sanitation" includes all of the following:

- No open defecation;
- Hygienic latrines available to all;
- Use of hygienic latrines by all;
- Proper maintenance of latrines for continual use;
- Improved hygienic practice;
- Proper management of solid waste, and proper disposal of household wastewater and storm water.

This expanded definition is in line with the MDG Task Force's definition of basic sanitation presented above.

3.1.2 Basic Sanitation in South Africa

According to Target 2 of the Strategic Framework for Water Services (2003):

> *All people in South Africa have access to a functioning basic sanitation facility by 2010.*

Basic sanitation in South Africa has been defined as a two pronged approach, as stated in the Strategic Framework for Water Services (2003):

> *A basic sanitation facility is defined as infrastructure necessary to provide a sanitation facility which is safe, reliable, private, protected from the weather and 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 a household, the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary, and the communication of good sanitation, hygiene and related practices.*

This definition was used as the basis for the development of the draft Free Basic Sanitation Strategy developed in 2004. While there is broad similarity between the South African and international definitions of basic sanitation, the biggest discrepancy is the recent international inclusion of a neighbourhood-focus and orientation, along with solid waste. The South African definition focuses solely on the household unit, and this is perhaps one of the weaknesses of the current approach.

3.2 Free Basic Sanitation Services

The term "Free Basic Sanitation", as understood and applied in the current South African context, appears to be limited to South Africa. While gathering research for this review, no other examples of "free" sanitation policies were found. On the other hand, sanitation subsidies are widespread and in this regard, the South African example is not unique.

However, what does appear to be unusual is the dominant view of access to sanitation services as a right, without the emphasis on household responsibility. In some ways this stands in stark contrast to current international best practice, which suggests that the focus of large-scale sanitation programmes should be on stopping open defecation and on improving hygiene behaviour on a community-by-community basis, with success measured not by the number of toilets built, but by long-term improvements in public health and well-being.

Free Basic Sanitation (FBSan), as it is generally understood, involves providing free access to both the capital payments relating to the installation of the sanitation facility, rehabilitation costs (also a capital item) and subsidising the ongoing operating costs relating to the provision of the service. However, it is notable that according to the draft strategy there are some 'on-site' components of the facility which remain the responsibility of the household, and the household remains responsible for paying for these components (DWAF, 2004). The nature of these components is not defined in the draft FBSan strategy.

According to the Draft Free Basic Sanitation Strategy (DWAF, 2004):

> *"South Africa has adopted the principle of requesting consumer contributions in the recent past. This is supported by the White Paper on Basic Household Sanitation (DWAF, 2001) which promotes a demand responsive approach. However, with the principle of free basic services being accepted, the more recent sanitation implementation projects have not required capital contributions. However, this excludes certain 'on-site' components of the facility and, in this regard, local policies must clearly define the circumstances under which households would be required to take responsibility for these 'on-site' components".*

While this does leave the door open for household contributions, the phrase "Free Basic Sanitation", and the roll-out of the Free Basic Water programme has created expectations of a completely free service.

3.3 The case against sanitation subsidies

The community led total sanitation (CLTS) programme was first developed in Bangladesh and is now being implemented in many other rural contexts – and tried in some urban contexts too. It offers no cash incentives or subsidies for sanitation infrastructure, while operating in some of the poorest villages in one of the world's poorest nations. It also offers no technical solutions but it provides households with information on sanitation technology options. It focuses on behavioural change before latrine construction.

The intention is to promote household "ownership" of sanitation facilities and hygienic practices; to ensure that communities are involved in designing a sanitation solution that will work for them in the long-term. However, as the IRC points out, the arguments surrounding the use and need of subsidies can be complex and confusing.

Some programmes claim to build zero subsidy latrines on the basis that the householders pay for every part of the latrine construction cost. However, it often disregards the costs of promoting the process and mobilising the householders. These costs can be significant. Another approach is to factor in household labour costs, e.g. for digging the pit, which in most projects is carried out for no financial remuneration by the householder. Factoring in these costs has the effect of emphasising the household contribution and making the external agencies contribution appear appealingly low (IRC, 2006).

While there is growing consensus that the focus on subsidies alone is counter-productive, there is also a consensus that some form of subsidy will always be required. The test is to ensure that the subsidy is sustainable, and without any perverse incentives.

Subsidies for hygiene promotion, sanitation marketing, supporting small scale providers, school sanitation, institutional sanitation and city-wide networks can all be justified since sanitation is both a merit and a public good.

3.4 Free for all or free for some?

The vision contained in the Draft Free Basic Sanitation Strategy (2004) is of providing access to basic sanitation for all. The language is however ambiguous and contradictory, as later in the same document it states that:

> *"the primary purpose of the free basic sanitation policy is to assist in promoting affordable access by poor households to at least a basic level of sanitation service."*

It is therefore not clear from the Draft Strategy if FBSan is intended for all, or only for the poor.

There is some attempt to clarify this later in the strategy, where it states:

> *"Although there is a broader policy commitment to the extension of free basic services to all households the primary target of the policy is poor households for whom free basic services represent a significant poverty alleviation measure."*

To date, South Africa has generally defined beneficiary households based on economic indicators, using household income as a determinant of "poor". Targeting poor households has presented a few challenges in terms of errors of inclusion (i.e. where non-poor households also benefit) and errors of exclusion (i.e. where needy households have been excluded). The criteria for what qualifies as poor are highly debatable, but DPLG has adopted the Free Basic Services threshold of a household income of R1100 per month, which is seen as the national poverty benchmark. This has also been used as the guideline in the Draft Free Basic Sanitation Strategy.

The modelling undertaken as part of this project has taken the view that scarce subsidy funds should be targeted at the poor. Due to the data problems already mentioned above, a poverty level of R800 in 2001 Rand, or R1200 in 2008 Rand, has been used as the base scenario for modelling purposes.

3.5 The extent of subsidization

There are two main issues which underpin the various debates over how much to subsidise. The first focuses on fostering a sense of ownership of sanitation facilities and hygienic practices, and therefore argues for ensuring that subsidies do not undermine this aspect. It recognises that behavioural change is essential to achieve sustainable sanitation services.

The second is aimed at ensuring that the sanitation service is financially sustainable. If poor households cannot cover the running costs of the sanitation systems, this view dictates that a subsidy should be provided to cover the "gap" in affordability.

While there is widespread agreement on the necessity of providing some form of sanitation subsidy, there is much debate over what amount of subsidy should be provided, and what components should be subsidised.

There is a wide range in the ability to pay for a sanitary latrine even among the rural poor. WaterAid-India believes that a flat rate subsidy is inappropriate as it fails to differentiate between rich and poor households. It tries to target the largest subsidy at the poorest households, that is, those that have the least ability to pay for a latrine. In contrast, until April 1999, the Government of India's low-cost rural sanitation program offered a very high level of fixed rate subsidy. Experience showed, however, that latrines constructed with high levels of subsidy, as the main motivating force, are often unused, converted to other purposes or neglected.

As a result, WaterAid aims to implement future sanitation projects in India with zero subsidies; however, it recognizes that some financial support is needed in the initial stages to ensure demand is realized and latrines are constructed to an adequate standard.

In Bangladesh, under the new National Sanitation strategy (2005), the emphasis is on effective demand creation through health education and hygiene promotion. Government subsidies are no longer provided and household sanitation is recognized to be privately financed, often under credit or instalment plans. Accordingly, no subsidies are allocated, with the exception of community latrines, which receive an 80% subsidy and subsidies for the "hardcore" poor. Local bodies are expected to spend 20% of the Annual Development Plan allocation towards the promotion of sanitation facilities for the poor, women and disabled and can be used for hard- as well as software activities (Danida, 2006). Of this 20% allocation, 25% has been earmarked for the 'software' activities aimed at hygiene

promotion and community mobilisation, and is intended to help motivate people to invest their own money in building latrines. The remaining 75% is earmarked for the 'hardware' subsidy for the hardcore poor.

A key lesson from international experience is that there is a significant "unrevealed" demand for sanitation services in poorer neighbourhoods. This is contrary to the conventional wisdom that demand is low or nonexistent, and that poorer people are not willing to pay for these services.

Heavily subsidised sanitation provision may support "latrine construction" programmes, but potentially at the expense of innovative, sustainable low-cost sanitation solutions derived from within the community. This innovation has been a significant factor in the success of demand-led approaches such as CLTS in Bangladesh and neighbouring countries. The sustainability of such high-levels of government subsidy should also be considered.

3.6 Hardware versus software subsidies

The previous section has shown that there has been a general move away from a focus on sanitation infrastructure subsidies towards stimulating demand for sanitation, and promoting behavioural change. In other words, there has been a shift of focus from hardware subsidies to software subsidies.

Recent experiences suggest that "the focus of large-scale sanitation programs should be on stopping open defecation and on improving hygiene behaviour on a community-by-community basis, with success measured not by the number of toilets built, but by long-term improvements in public health and well-being." (Robinson, 2005)

A sound general principle emerged at AfricaSan, the African Conference on Sanitation in 2002, namely "subsidise only that for which nobody else will pay". The DFID Sanitation Reference group (2007) recommended the following principles and subsidy priorities:

- avoid direct subsidies for the construction of household latrines;
- subsidise the generation of demand and sanitation promotion;
- subsidise capacity building of small scale sanitation service suppliers and the development of an environment conducive to their operation;
- finance institutional sanitation provision in schools, government offices and public buildings;
- finance downstream infrastructure and sludge management in urban areas because household sanitation may depend on city-wide networks;
- finance school sanitation and sanitation in health and community centres; and
- pay construction costs only for elements of the system whose public benefit is greater than the private benefit (trunk infrastructure, shared facilities, household facilities for the minority of households whose demand would otherwise not be high enough to construct hygienic means of excreta disposal, environmental infrastructure, etc.)

This is borne out by the experience of the Government-led program in Ghana, where the presence of a policy of 50% hardware subsidy failed to achieve sustainable improvements in sanitation. It was largely unsuccessful, due to lack of demand for sanitation, and a lack of ongoing maintenance (Danida, 2006).

The impact of large-scale sanitation projects, carried out at scale with high levels of subsidy, and a largely standardised product, has been very limited. Many of these toilets were not properly used or maintained. A major problem with many such sanitation programmes is

that they have focused on the delivery of hardware without attention to changing behaviours or effectively targeting households who really want a latrine (DFID, 2007).

The Orangi Pilot Project in Karachi Pakistan, mobilized communities to invest in sewers, while in Midnapore West Bengal India, households were supported to invest in on-plot latrines. The common feature of these two well-known cases was that, while external funding was used to support technical innovation, participatory research, hygiene education and social marketing, direct funding of hardware (for example latrine components) was not included; households were responsible for the local investment themselves. This is similar to the CLTS approach adopted in Bangladesh (DFID, 2007).

3.7 Technology options

There is widespread recognition that there is no "best" sanitation technology option. Successful sanitation technologies are those which are appropriate, i.e. they meet the privacy, safety, convenience and other needs of households and are affordable.

Under supply-driven sanitation schemes, it was far easier for project implementers and sanitation professionals to select one standardised technology. However the move towards demand responsive approaches implies a more central role for the end-users in selecting technology options, to ensure that the facilities are both used and maintained in the long-term.

The starting point is to identify and address the particular sanitation and hygiene-related problems and to define appropriate actions within that context, rather than impose a preferred, standardised technical solution in the form of a particular design of latrine as "cure-all" for sanitation.

3.8 Key issues and lessons for South Africa

> *"New approaches are needed to make a substantial and sustainable impact on public health. This study suggests that the focus of large-scale sanitation programmes should be on stopping open defecation and on improving hygiene behaviour on a community-by-community basis, with success measured not by the number of toilets built, but by long-term improvements in public health and well-being." (Robinson, 2005)*

The review of international experience with regards to sanitation subsidies highlighted some important points and lessons, which were used to inform the subsequent analysis, including the case study municipalities. An issue, on which both opponents and supporters of sanitation subsidies agree on, is that subsidies alone are not sufficient to achieve sustainable sanitation services.

The following section explores the other factors which have been found important in the achievement of sustainable sanitation services.

The importance of accounting for context specific factors

While the review contained a host of illustrative examples of successes and weaknesses, there is no blanket recommendation for increasing sanitation coverage. Each case-study mentioned in the review had elements which were unique to its success because the contextual factors differed significantly, be it the institutional arrangements, public perception or socio-economic status. This highlighted the need to account for the features and demands of the local context in particular.

Demand-driven approach

The sanitation approach being implemented needs to respond to the specific project context in order to be successful. While supply side factors may determine what is physically and

financially feasible, achieving sustainability requires that the programme responds to local demands, rather than the parameters of what can be supplied. This factor appears to be of specific relevance to the South African context, where the emphasis on meeting service coverage targets has resulted in the adoption of a supply-driven approach.

Robinson (2005) found in a review of several sanitation programmes that the unsuccessful programmes tended to be supply-driven, concentrating on building standard toilet designs (or sewerage systems) rather than focusing on programme outcomes such as stopping open defecation or improving hygiene behaviour. In order to ensure that these weaknesses are addressed, a demand-driven approach to sanitation delivery is crucial. Understanding what the consumer wants and can afford as well as knowing their willingness to pay is clearly important. When the needs of people are ignored and the local context is not taken into account, sanitation schemes will fail. Supply–driven programmes focused on (usually subsidised) delivery of hardware alone do not work; at best they provided thousands of expensive, unwanted and unused toilets.

Emphasis of software over hardware subsidies

The provision of latrines alone will not be sufficient to achieve sustainable sanitation services and improvement of public health, unless accompanied by improved hygiene behaviour and awareness. Again, in South Africa not enough attention appears to have been paid to ongoing campaigns to raise hygiene awareness.

It is worth noting that not all software is equally effective. In a review of several sanitation programmes, Robinson (2005) found that the less successful programmes appear to have spent large amounts at the macro level: on conducting expensive poster and leaflet campaigns; on holding workshops and local rallies; and on advertisements in local media (newspapers, radio). In contrast, the more successful programs invested in activities at the community and household level, focusing on door-to-door campaigns, social marketing of sanitation products, and hygiene promotion among poor and vulnerable groups.

Community and stakeholder participation

Related to the above issues, is the need for inclusion of local communities and potential beneficiaries of the initiative being implemented. The buy-in and support of the community is essential, especially after the government or funding agency has made the initial start-up capital investment. Working with a wide network of stakeholders such as local business, local government and NGO structures has also proven to be a key element of success. It is important to realise that good hygiene practice goes beyond hand-washing and includes cleaning and maintenance of the sanitation facility being used, to ensure that it remains functional. It is thus imperative that households which have access to sanitation for the first time not only be taught the importance of hygiene but that they take ownership of the future upkeep of the facility.

Setting realistic targets and being flexible

It has been observed through the review of international literature that targets need to be realistic, both in terms of number of beneficiaries and the scale of the programme. It is evident that there are many pockets of success across the world, with many of these being located in villages, towns and cities rather than the entire country. This suggests that sanitation expansion programmes work best incrementally or on a smaller scale and may be challenging to implement on a national scale. Indeed, within countries there are contextual factors which need to be accommodated and a flexible policy approach may need to be adopted for broader sanitation delivery to the poor to be achieved. This also implies that the setting of national targets may also be unrealistic, as they fail to take into account specific regional contexts.

The importance of reliable data

It is clear from the literature that the initial subsidy development stage requires a substantial financial and time contribution, largely to develop a thorough understanding of the intended beneficiaries and their willingness to make a contribution and how to minimize the administrative costs of subsidy development. While data collection is a costly exercise, research has shown that better decisions can be made about where to target the subsidy before implementation rather than learning from mistakes after implementation, which may in the longer term lead to cost saving.

An effective public administration

By many accounts, the potential benefits of subsidization hinges on the ability and capacity of the public administration within government to appropriately plan, administer and implement the subsidy. Countries which have seen success such as Colombia and Chile have attributed this aspect, amongst others, as a reason for their success. While the importance of good management and oversight is obvious, the relevant officials at all levels of government need to be trained and equipped, in order to ensure that the subsidy yields its full potential gains. Sound intergovernmental relations and inter-departmental co-ordination are also important to the process.

Measuring impact and long-term support

A key success factor in other programmes has been the presence of regular monitoring and post-construction support by external agencies. Additional to the counting of toilets, it is important that good hygiene practices be adopted and sustained in households obtaining the new and/or improved sanitation, for the full potential health benefits to be achieved. Again, the collection of this data could be costly and time consuming but it is valuable in order to assess the impact which the subsidy may or may not have in improving access and quality of life.

Behaviour change takes time to set in. The case studies highlight that rural households revert to their old habits very quickly if new toilets become blocked, broken or smelly, and if nobody is on hand to provide timely advice or encouragement (Satterthwaite, 2006).

4. EVALUATION OF THE IMPLEMENTATION OF FREE BASIC SANITATION SERVICES

4.1 Case studies of free basic sanitation services

The following key findings emanated from an in-depth analysis of approaches used by 8 selected case-study municipalities to implement FBSan services.

Free basic sanitation policy

It was found that there was no common approach to the interpretation of free basic sanitation service policy by the different municipalities. Three municipalities were providing a free basic sanitation service to all households connected to the sewer networks up to an equivalent of 6 kL of water supplied per month except Mbombela LM which had a limit of an equivalent of 12 kL of water. Another three municipalities were providing a free basic sanitation service as part of a package of free basic municipal services under the indigent support policy and only registered indigent households qualified for free basic municipal services. Vhembe and Amathole DMs were not providing any free basic sanitation services because they were focusing on the eradication of the basic sanitation infrastructure backlog for the large poor rural populations that they served.

The following table provides details of the free basic sanitation policy for the selected municipalities:

Table 3: Free basic sanitation policies for the case-study municipalities

WSA	FBSan Policy
City of Cape Town	All households connected to sewer networks received FBSan service up to an equivalent of 6 KL of water supplied per month. Households in dense urban informal settlements were provided with communal sanitation facilities.
City of Tshwane	From 2001 to June 2007 the City of Tshwane used to provide FBSan service to all households connected to the sewer networks. However, from July 2007, a political decision was taken to limit FBSan service to registered indigent households up to an equivalent of 6 KL of water supplied per month. Households living in dense urban informal settlements were provided with VIP toilets and communal chemical toilets.
Ugu DM	FBSan service was part of a package of free basic municipal services provided to registered indigent households connected to the sewer networks and users of conservancy tanks. Free VIP toilets were provided to rural households without access to basic sanitation infrastructure.
Vhembe DM	No FBSan service was provided to households; free VIP toilets were provided to rural households without access to basic sanitation infrastructure.
Amathole DM	No FBSan service was provided; Amathole was focusing on the provision of free VIP toilets to rural households without access to basic sanitation infrastructure.
Mbombela LM	All households connected to sewer networks received FBSan service up to an equivalent of 12 kL of water supplied and households that exceeded 6 kL paid a fixed monthly sanitation charge. Households exceeding 12 kL paid a rising-block tariff in addition to the fixed monthly charge.
Breede Valley LM	Indigent support policy was used to provide free basic sanitation services as part of a package of free basic services. Registered indigent households, users of VIP toilets and communal waterborne sanitation facilities did not pay any sanitation charges.
Maluti A Phofung LM	All households connected to sewer networks received an FBSan service up to an equivalent of 6 kL of water supplied per month and registered indigent households exceeding this limit received a 100% rebate on their monthly bill.

Integration of health and hygiene education into the delivery of free basic sanitation services

The majority of case-study municipalities did not provide H&HE as part of FBSan services; they only provided health and hygiene education to beneficiaries during the implementation of basic sanitation infrastructure projects. However, the City of Cape Town provided ongoing H&HE under a programme called 'Raising Citizens Voice' which was a pilot initiative supported by DWAF and other key role players. Amathole DM had a Sanitation Resource Centre which provided communities with sanitation, health and hygiene education and a sanitation promotion officer was responsible for raising awareness of sanitation and hygiene practices on an ongoing basis. An annual sanitation week was hosted by Amathole to raise hygiene awareness and to disseminate H&HE information. Vhembe DM in its strategy for

basic sanitation service delivery made provision for the appointment of community health workers who were responsible for conducting house-to-house visits to educate households about health and hygiene practices on an ongoing basis.

Targeting the poor

It was found that the free basic sanitation services were benefiting poor households living in formal, urban residential properties which had access to full waterborne sanitation systems. Households living in backyards, dense urban informal settlements and rural areas were not considered for registration as indigent households. All rural households without access to basic sanitation facilities received free VIP toilets and dense urban informal settlements were provided with wet or dry communal sanitation facilities; this was an interim measure while they were waiting to be granted subsidized low-cost housing. The monthly household income limit was used by most municipalities to target subsidies to poor households and the qualifying monthly income limit varied from R1 100 for Vhembe and Amathole DMs, R1 700 for City of Tshwane Metro, R1 740 for Breede Valley LM and R2 000 for Ugu DM. Registered indigent households qualified for a rebate on their basic municipal services account (free basic water, sanitation, electricity and refuse removal services, etc.). The municipalities that were providing free basic sanitation services to all households up to an equivalent of 6 KL of water supplied relied on recovering the costs through using a rising-block tariff for households exceeding the free basic sanitation component.

Linkage of free basic sanitation to job creation and poverty reduction

All case study municipalities trained and employed local people in the implementation of sanitation infrastructure projects according to the principles of the Expanded Public Works Programme (EPWP). Some municipalities such as the City of Tshwane Metro had programmes for assisting registered indigent households to escape from the poverty trap. Members of these households were prioritized for employment in public infrastructure projects and scholarships were provided to the youth who had successfully completed high school education to obtain tertiary education qualifications that would help them to secure permanent employment. The City of Cape Town (CCT) trained community facilitators and community development workers and on completion of the course, they were employed by CCT in the programme for 'Raising Citizens Voice'. Amathole DM trained the local people as community health workers and employed them to promote good hygiene and health practices in their communities. Local people were trained and employed by Amathole DM to manufacture the movable lightweight superstructure for VIP toilets. Vhembe DM trained local entrepreneurs to make bricks and toilet pedestals and it assisted them to set up facilities for manufacturing bricks and toilet pedestals which they supplied to the sanitation infrastructure projects.

Sources of funding for free basic sanitation services

The main sources of funding for free basic sanitation services were the Municipal Infrastructure Grant, equitable share grant and local municipal revenues from user charges, property taxes and levies. Poor municipalities with limited or no local revenue depended entirely on the MIG and equitable share grant to fund free basic sanitation services. The equitable share grant is an unconditional grant and municipalities can use their discretion in the utilization of the grant and there are no funds ring-fenced for free basic sanitation services.

The City of Tshwane used cross-subsidies to fund the free basic sanitation services for the registered indigents because of their ability to generate revenue from high income consumers. The City of Cape Town and Mbombela were using a combination of cross-subsidies and equitable share grant to fund free basic sanitation services to all households

connected to the sewer networks. All municipalities were faced with a problem of poor cost recovery which threatened long-term sustainability of free basic sanitation services.

Sanitation tariff structure

A comparison of the sanitation tariff structure of the selected case-study municipalities showed that most municipalities were using the volumetric sanitation charge which was based on the volume of water supplied to the households However, there were differences in the methods used to calculate the equivalent of wastewater discharged, for example, the sanitation tariff for City of Tshwane was based on the assumption that 98% of the first 6 kL of water was discharged as wastewater and the percentage of wastewater was reduced on a sliding scale up to 42 kL of water supplied. On the other hand, the City of Cape Town based its sanitation tariff on the assumption that 70% of the water supplied to the household was discharged as wastewater. The City of Cape Town charged a fixed sanitation tariff for flat-dwellers and households living in cluster developments and this was much higher than the rising-block tariff for households living in single residential units. The sanitation tariffs for Mbombela and Maluti A Phofung LMs included a fixed monthly sanitation charge in addition to the rising-block tariff for consumption. Ugu DM charged a fixed sanitation tariff per kL of wastewater discharged and this was the highest rate when compared to the rest of the case-study municipalities. The sanitation charge for Breede Valley LM was based on the cost of providing the sanitation service and a higher sanitation tariff was charged for households living in single formal residential houses and flat-dwellers were charged a lower rate.

The following table presents details of the sanitation tariff structure for the 8 case-study municipalities:

Table 4: Comparison of sanitation tariffs for the selected municipalities

WSA	Monthly tariff	FBSan limit
City of Cape Town	70% of water consumption to a maximum of 35 kL wastewater (70% of 50kL) R3.78/kL for >4.2-8.6 kL R8.04 for >8.6-14 kL R8.79 for >14-28 kL R9.23 for >28-35 kL Single tariff of R9.10/kL for flats and cluster developments	First 4.2 kL of wastewater was free for all households. Additional R30 monthly rebate provided to registered indigent households with property valuation of <R200 000
City of Tshwane	98% of the first 6 kL of water supplied R2.54 for 0-6 kL of water R3.44 for 7-12 kL R4.44 for 13-42 kL	First 5.88 kL wastewater was discharged free for registered indigents
Amathole DM	Rising-block tariff varied for the different LMs R1 and R1.10/kL for 0-6 kL of water consumption Above 51 kL, the tariff varied from R2 to R5/kL	No free basic sanitation services
Ugu DM	A fixed rate of R13.85 per kL of wastewater discharged	100% rebate for registered indigent households
Vhembe DM	Not available	No free basic sanitation services
Breede Valley LM	Fixed monthly sanitation charge of R95.00 for formal residential houses and R85.00 for flat-dwellers	100% rebate for registered indigent households earning less than R1 740 and the rebate decreased on a sliding scale to 20% for households earning R2700 per month.
Maluti A Phofung LM	Availability charge ranged from R30.45 to R65.63 depending on the area. Consumption charge linked to water supplied ranged from R4.20 to R5.78/kL depending on the area	Equivalent of 0-6 kL of water was provided free to all households with waterborne sanitation. 100% rebate for registered indigent households exceeding 6 kL of water.
Mbombela LM	Fixed monthly charge of R24.12 for water consumption above 6kL. Consumption charge linked to water supplied: 0-12 kL no charge >12-20 KL at R5.80 per kL >20-40 KL at R6.15 per kL	FBSan service applied to the first 12 kL water consumption for all households with full waterborne sanitation and no fixed monthly charge for households consuming 0-6 kL of water.

Operation and maintenance (O&M) plans for VIP toilets

The majority of the case-study municipalities did not have O&M plans or budgets for the emptying of sludge from full VIP toilets. Some of the municipalities were still investigating suitable options for emptying full pits or building replacement VIP toilets where pit emptying was not feasible. Vhembe and Amathole DMs which were installing a large number of VIP toilets for the rural households had included O&M plans for VIP toilets in their sanitation strategies. Vhembe was promoting double VIP toilets as a preferred technology choice for rural households to ensure long-term sustainability. Amathole DM was testing a light-panel superstructure which could be relocated to a new pit when the VIP toilet was full. There were no plans for the safe disposal of pit sludge where pit emptying was considered as a solution for dealing with full VIP toilets.

4.2 Survey of free basic sanitation services in 17 District Municipalities

A survey of the implementation of FBSan services in 17 District municipalities in Eastern Cape, KwaZulu-Natal and Limpopo provinces was conducted to substantiate the findings from the in-depth analysis of case-study municipalities. (Refer to Appendix G in the attached CD for survey results).

The following findings emanated from the survey of FBSan services in District municipalities:

- The majority of the DMs surveyed were not providing free basic sanitation services; they were focusing on the eradication of the basic sanitation infrastructure backlog in the large poor rural communities that they served.
- Most DMs were using indigent support policies to provide free basic water and electricity to the poor.
- A few DMs were in the process of developing free basic sanitation policies.
- The majority of the DMs did not have O&M plans for emptying full VIP toilets.
- All DMs included H&HE in the delivery of basic sanitation infrastructure to households. Some DMs in KZN and Limpopo provinces were providing ongoing H&HE and the District Environmental Health Practitioners were responsible for this service.
- Implementation of free basic sanitation services in the surveyed DMs would require a substantial increase in the equitable share allocation from national government because these municipalities were characterized by high poverty and low revenue base.

4.3 Stakeholder perceptions of free basic sanitation services

The following key issues were raised by the sanitation sector stakeholders on the implementation of FBSan services (Refer to Appendix D for a detailed stakeholder consultation report):

Definition of free basic sanitation services

There was a lack of a common understanding of free basic sanitation service in the context of VIP toilets in rural areas and waterborne sanitation systems for urban areas; guidance was required on the minimum standards for a basic sanitation service that meets the constitutional right.

Legislative framework for the provision of basic sanitation services

Guidelines for WSAs were needed to integrate the three pieces of legislation for the provision of basic sanitation services, namely, Constitution of SA, Water Services Act of 1997

and Municipal Systems Act of 2000. These guidelines will support a common approach to the delivery of basic sanitation services by municipalities.

Sustainability of free basic sanitation services

Sanitation provision without efficient and effective solid waste removal was not sustainable because it did not address the negative impacts of poor solid waste management on the health of the entire community and the environment.

Water conservation and water demand management strategies were not integrated into the FBSan services, especially where full waterborne sanitation systems were provided to poor households.

Interpretation of FBSan services

Municipalities had interpreted FBSan service as a free sanitation service for those already connected to sewer networks. There was too much focus on the construction of toilets and the other component of basic sanitation services were neglected, for example, most municipalities did not address grey water disposal, ongoing hygiene awareness and lacked O&M plans for VIP toilets.

Poor households not benefiting from FBSan services

The approaches used to target free basic sanitation services to the poor households were not effective because they were not informed by a thorough understanding of the sanitation needs of the poor households and other vulnerable groups. The current approach used to implement the FBSan strategy was not pro-poor because only those households already provided with waterborne sanitation services were benefiting from the subsidized service while households with dry on-site sanitation systems were expected to empty their full pits at their own costs; The poorest households living in dense urban informal settlements were provided with communal sanitation facilities which were poorly maintained.

Poor multiple family households and backyard dwellers were excluded from benefiting from free basic sanitation services because the municipality recognized a plot as a household unit.

The reality faced by municipalities with large rural populations that lacked access to basic sanitation infrastructure was the high cost of providing services to sparsely populated rural communities that were located far away from the offices of the municipality.

Financing of FBSan services

Unlike waterborne sanitation service, dry on-site sanitation was not a revenue generating service for the municipalities; therefore, municipalities would require increased allocation of ES for O&M of dry on-site sanitation systems.

Equitable share was not a conditional grant; therefore, municipalities were free to use their discretion in the allocation of the ES. Although the equitable share allocation has been increased to meet the cost of providing free basic sanitation services, there were no funds ring-fenced for the provision of free basic sanitation services, especially the O&M component of dry on-site sanitation systems.

Very few municipalities had accurate data on the real cost of providing full waterborne sanitation services which took into account all the costs associated with water provision, sewer maintenance, sewage treatment, user education, personnel, vehicle maintenance, revenue collection and extension of service coverage. This led to funding shortfalls that resulted in poor maintenance of wastewater treatment plants.

In terms of Section 78 Water Services Provider (WSP) arrangements do not make provision for the O&M of dry on-site sanitation systems. If FBSan service delivery included O&M of dry

on-site sanitation systems as opposed to subsidizing full waterborne sanitation, the appropriate WSP arrangements and budgets must be put in place.

Health and hygiene education

Ongoing H&HE was currently an unfunded mandate for the Department of Health; there was a need for the review of the funding arrangements for H&HE and funds must be ring-fenced for this important component a basic sanitation service. The stakeholders recommended that the responsibility and funding arrangements for H&HE must be debated at the level of the Director-Generals and Ministers of the Departments of Water Affairs and Health.

Institutional arrangements for H&HE were currently in a transitional phase and needed to be fully integrated into the Department of Health, which has divisions that deal with health promotion and environmental health services relating to health awareness.

The H&HE strategy was clear on issues of promotion, education, and awareness as well as user education. It indicated the target and specific level of detail required, however, information on the content of the H&HE was lacking. Issues of H&HE must be enforced and the impact of H&HE programmes must be monitored. The promotion of the water and sanitation component of health and hygiene should be done within the context of environmental health.

User education and H&HE must be offered as part of the free basic sanitation service package on an on-going basis so that households could get maximum health benefits from their improved sanitation facilities.

Municipal bylaws

It was recommended that municipal bylaws should include H&HE and free basic sanitation services and regulation should take place at the local municipal level.

4.4 Conclusions

The following conclusions were drawn from the evaluation of the implementation of the free basic sanitation services:

FBSan services were not benefiting the poorest households

Most case-study municipalities interpreted the FBSan policy as a benefit for households that have access to waterborne sanitation systems, this excluded the majority of the poorest households that were not connected to the sewer networks and also lacked access to basic sanitation infrastructure. For example, the poor households living in dense urban informal settlements were provided with communal toilets and no grey water disposal systems were provided. While rural households were provided with subsidized dry on-site sanitation systems without any plans for O&M for emptying of full pits and safe disposal of human waste. There were also no special subsidies for vulnerable groups such as poor people with physical disabilities and HIV/AIDS infected people. The use of Equitable Share to subsidise free basic sanitation for all households irrespective of their socio-economic status limited the subsidy funding available to subsidise the poorest households.

Definition of basic sanitation services

There was a lack of common understanding of the definition of a basic sanitation service within the context of access to basic sanitation service as a human right. There was too much focus on the provision of toilets without putting enough emphasis on the total package of a basic sanitation service.

Targeting the poor

Municipalities that were providing FBSan services to registered indigent households used the household monthly income limit as a qualifying criterion for indigent status. There was a problem with this method because poor multiple families were more likely to live as a single household unit and their collective monthly income would exceed the limit required to be registered as indigent. There was also no provision for households living in backyards because the municipality only recognized a residential stand as a household unit. There was also no uniform approach to the determination of the poverty line because of a lack of a national definition of poverty. Municipalities that were using the indigent register required more resources to verify and re-assess the indigent status of registered households. Resources were needed to communicate the free basic sanitation strategy to all poor communities.

Integration of hygiene education into the delivery of free basic sanitation service

Most municipalities were not paying attention to the ongoing hygiene education for the communities that they served. However, all municipalities were providing hygiene education and awareness as a once-off event during the implementation of the basic sanitation infrastructure. This could pose a threat to the achievement of sustainable improvement in hygiene practice and health of the beneficiary communities.

Community involvement in the design of pro-poor subsidies

Municipalities have not put any effort in engaging the local communities in the design of the approach followed in the implementation of free basic sanitation services, a top down approach was followed. Consequently, the FBSan services were benefiting the 'haves' while the 'have nots' continued to live under squalid conditions with poor or not access to adequate sanitation services.

Operation and maintenance plans for VIP toilets

Most municipalities did not have any O&M plans for pit-emptying of full VIP toilets and safe disposal of human excreta or replacement of full VIP toilets where pit-emptying was not feasible.

Funding arrangements for the FBSan services

Rural municipalities that provide basic sanitation services to large poor rural communities required large increase in Equitable Share to be able to provide a free pit emptying service for the poor households. These municipalities did not have the capacity to generate sufficient revenues from services provided to households due to high levels of poverty.

Cross-subsidization of free basic sanitation services for the poor households was viable in metros with high revenue base and low poverty levels, however, where there was low revenue base and high poverty levels, municipalities were not able to cross-subsidize free basic sanitation services for the poor. Brook and Smith (2001) argued that the rising-block sanitation tariff used to subsidize the poor had limited success in benefiting the poor because it was designed for single family unit and it did not accommodate multiple families that lived as a single household. They believed that subsidy for low cost sanitation technology options would be more appropriate for ensuring that only the poorest households would benefit from subsidised basic sanitation services.

The provision of a 100% rebate on the monthly sanitation bill for the registered indigent households practised by some municipalities could lead to a perverse incentive for the poor households because they do not have an incentive to use water efficiently.

Poor management of billing systems, credit control and debt collection threatened the financial viability of the municipalities.

Sanitation tariff structure

Most case-study municipalities were using a quantity-targeted subsidy, which took the form of a rising-block tariff with the unit charge increasing for high-level consumers. Komives et.al (2005) argued that the quantity-targeted subsidies were a problem because they were based on an untested assumption that there was a difference in the consumption patterns of the poor and non-poor middle class households. It is questionable whether the 6 kL water limit adopted as free basic water is adequate to meet the basic needs of poor households with full waterborne sanitation system. The adequacy of 6 kL water limit has been tested in court in the Mazibuko case (2009) where City of Johannesburg was challenged in court by the residents of Phiri in Soweto; the Constitutional Court overruled the judgement of the Supreme Court which had ordered the City of Johannesburg to supply them with 42 l/c/d free basic water.

Job creation and poverty reduction

The majority of case-study municipalities linked the implementation of sanitation projects to job creation and poverty reduction and they adhered to the principles of the Expanded Public Works Programme. For example, local people were trained to manufacture bricks and pedestals for the sanitation infrastructure projects and local community health workers were trained and employed to conduct ongoing hygiene awareness.

Eradication of basic sanitation infrastructure backlog

Municipalities that had a huge basic sanitation infrastructure backlog were prioritizing the eradication of the sanitation backlog before they could consider providing free basic sanitation services to the poor households. Metros that had huge basic sanitation infrastructure backlogs in dense urban informal settlements were providing temporary communal toilets as an interim measure while they waited for the Department of Housing to provide low-cost housing to all urban households by 2014.

5. CASE-STUDY AND NATIONAL MODELLING

5.1 Brief introduction to the modelling

The analysis consisted of two separate modelling exercises. The first involved an investigation into the **financial viability of the FBSan strategy for individual case-study municipalities**. It looked at the financial situation of municipalities in 10 years time, when it is assumed that the backlog will be eradicated (the current national policy intention), to assess the viability of the provision of FBSan based on anticipated municipal financial streams. It investigates the funds likely to be available to the sanitation service within the context of the entire municipal suite of services. It also investigates the implication of this for individual households, expressed through the entire municipal bill.

The second modelling exercise uses the results of the first, together with desktop cost analysis, to inform a **national analysis of the projected operational costs** associated with current FBSan service level decisions, under different operational assumptions. It focuses on the O&M implications of the roll-out of on-site sanitation services. The analysis did not address the question of what the best use of the subsidy funds may be, or of the different implications of funding the service through user-charges or subsidies. The focus is on the cost implications of the FBSan strategy as it is currently understood, both in assessing the adequacy of the municipal resources available to implement FBSan, and on the implications of current service level choices for operational costs in the future.

The focus of both analyses is therefore on the operational implications of the draft FBSan strategy, including adequate maintenance and depreciation, or provision for replacement costs.

Underlying the analysis is a certain understanding of the current FBSan strategy, derived from the case-study analysis and the literature review. This understanding has informed the modelling which was undertaken, and is summarised in the text box below.

Sanitation subsidy options available to municipalities

Under the draft Free Basic Sanitation strategy, many of the subsidy options have been pre-defined for municipalities. Only a few options remain under their control. These are explored here in summary form.

How much? Under the FBSan strategy, the implication is that the basic service is free. The definition of *how much* is to be subsidised therefore becomes equivalent to the cost of providing a basic service.

Who are the beneficiaries? There are basically two interpretations:

Free for all: there is a level of basic sanitation *consumption* which is to be provided to all free. Consumption above the basic level must be paid for. The implication is that the subsidy pie must be shared among a greater number, and the basic level must therefore be less. In reality, this can be adjusted using a tariff structure where consumers who use more (water-linked concept) are charged more. There are concerns that there are big errors of exclusion and inclusion here, e.g. small affluent households receive a greater share of the subsidy than large, poor households.

Free for the poor: there is a growing consensus that the sanitation subsidy should apply primarily to the poor. This implies a *quality/service level or means tested based subsidy*. For example providing certain service levels such as VIPs for free, and unless a household is registered as indigent, higher service levels must be paid for at cost.

Subsidy options under local government control: these are the elements over which municipalities have control, to ensure that the provision of sanitation services is sustainable.

Poverty cut-off: this is perhaps the factor over which municipalities can exercise the greatest discretion. Beneficiaries should be those with the greatest need. Even in rural areas, some households are better off than others.

Choice of service level: this includes not only the technology type, but the type of O&M to be provided by the municipality as part of the basic package. There needs to be a service level agreement between all households and the municipality, even in the absence of payment. For example, that the municipality will only provide 1 free emptying service once every 5 years. This cannot be imposed after the service has been provided; there must be an agreement up front.

Cost-recovery and non-payment: this is another key area over which local councillors and officials have control. The ability to fund the sanitation service (and others) using tariff revenue depends on the municipality's relationship with consumers. The aim should be to maximize cost recovery, and minimize non-payment.

External factors not under direct municipal control:

- Growth in, and the total amount of, Equitable Share funds. Although this is key to the sustainability of the FBSan strategy, it is beyond municipal control.
- Local revenue base and the potential for cross-subsidization – even though this is somewhat within the control of the municipality, this is very difficult to change over the short to medium term.

As the Free Basic Sanitation strategy is still at the draft stage, and has never been finalised, there is no "official" Free Basic Sanitation strategy. However, the draft guidelines and strategy were widely distributed and discussed with municipalities. The modelling has been based on investigating the implications of implementing the FBSan strategy as it is generally understood. This is informed by how it has been implemented in the case-study municipalities.

Some of the features of implementation include:

- Broad-scale use of VIPs in non-urban situations, to the general exclusion of other technology options, despite the draft strategy's provision for local choice.
- The urban trend is to provide waterborne sanitation, and to provide a subsidy through the indigents' register in urban areas.
- Provision of free basic sanitation to all in metropolitan areas, but only to those on the indigent's register, or with VIPs, in smaller municipalities.

5.2 Modelling of case-study finances

5.2.1 Overview of the Municipal Services Model (MSM)

Rather than focusing only on the finances of the sanitation service, or even water services, the modelling looks at the entire suite of municipal services. The reason for doing so is to ensure that all the demands placed on municipalities are taken into account. For example, while it is commonly felt that approximately 15-25% of the Equitable Share (ES) allocation should be directed towards sanitation, in reality some municipalities rely on ES funds to finance their core activities, such as Governance and Administration, and they simply don't have sufficient ES funds left over to adequately fund service provision to the poor. Looking at the sanitation account in isolation and assuming that a portion of the ES will be available, would therefore not be a true reflection of the financial burden and pressures facing municipalities.

To perform the analysis, an existing model, developed by the Palmer Development Group (PDG) over the past 6 years with the assistance of the DBSA, DWAF and DPLG, has been used to analyse the financial situation in each of the case-studies.

How the model works

The Municipal Services Model (MSM) is an spreadsheet based predictive model of the both operating and capital expenditures and cash flows associated with the provision of five infrastructure services and non-trading services for residential and non-residential consumers, illustrating the basic trade-offs between service levels, household bills and subsidies. (For the purposes of this exercise however, the focus is on the operational results of the model only). It is driven primarily by the provision of household services, but also considers the entire municipal budget, including roads, public services, governance and administration costs.

The Municipal Services Model (MSM) is intended to assist with the planning of infrastructure services. The model is intended for strategic use only, typically for IDPs, and not as a detailed budget preparation or project assessment tool. Model results are dependent on many inputs, including default capital and operating costs. They have been based on the best costs available at the time of development (updated in late 2007), and have been based on a number of municipal case-studies, in various parts of the country, and in a variety of different municipal contexts.

The model focuses on understanding the funding gap, given the full range of municipal responsibility. It estimates the costs of service provision based on a per plot or service point

basis. As these costs vary according to settlement density (linked to network density, or distances to be travelled), the distribution of households into 4 different settlement or geography types is provided for. Taken from Stats SA definitions, these have been aggregated into the following 4 settlement types:

- Urban: formal housing
- Urban: informal settlements
- Rural: Commercial farming
- Rural: Tribal areas/scattered settlements with communal tenure.

Costs in the model vary according to these settlement types. It should be noted that the model has been designed to show what municipalities should be budgeting and spending on service provision.

Another key feature of the model is the inclusion of household income levels. This allows the model to target subsidies to different income groups, and to change the poverty cut-off under different scenarios (for example, from R800 per month to R1600 per month).

After current service levels are entered into the model, the future service level targets (with 100% service coverage possible from year 5) are selected.

Based on default costs, and target service levels, the model calculates the cost of providing the services over the subsequent 10 years, both for capital and operating expenditure. This is compared to the available revenue sources over the same period. The primary operational revenue sources include local tariff revenue, rates and Equitable Share, while the most important capital sources include the Municipal Infrastructure Grant (MIG), municipal capital funds, and loan finance.

The model calculates what an "affordable" municipal bill is likely to be for each household, based on their income level. Once the level of poverty has been defined, subsidy funds (ES and cross-subsidies from other consumers) will be used to offset the revenue that cannot be recovered from these poorer households. The charge levied against lower income households is limited to what is considered "affordable", defined by the model as a total municipal bill not more than 10% of total household income.

The case studies

While an earlier phase of the project included eight case studies, it has only proved possible to model the finances of five of these case studies. After several attempts, it was not possible to get the full set of information required to populate the model used to conduct the financial analysis.

The five case studies used for this analysis include the following:

- Amathole and Ugu District Municipalities;
- Cape Town and Tshwane Metropolitan Municipalities; and
- Breede Valley Local Municipality.

The presence of external water service providers (the Biwater concession in Mbombela and MAP Water in Maluti a Phofung Local municipalities) has been very problematic in accessing financial records for these municipalities. Therefore, only limited results are available for these municipalities.

Budgets for 2008/09, with the provisional actual results for 2007/08 financial years were the main source of information for municipal financial information.

5.2.2 Setting up the model: Key model assumptions

Only the broad principles behind the modelling process are shown here (full details are available in Appendix E). Some of the most important assumptions are however summarised here to provide context for the analysis.

Modelling of municipal services

The model allows certain functions to be switched on or off in the model, depending on what responsibilities the municipality has.

The range of municipal services to be modelled differed according to the type of municipality. For example, while the City of Cape Town and Tshwane provide the full set of services (Water, sanitation, electricity, roads, solid waste, public services, governance, administration, planning and development (GAPD), along with other trading services such as housing and food markets), the District Municipalities have a much more limited range of functions which they are required to perform. Ugu and Amathole DM do not have any roads or electricity responsibilities, and their main service delivery focus is on water and sanitation services. Their public service obligations are also much lower, but GAPD is the main expense for District municipalities.

Household size, income and distribution

To support a consistent analysis, the household estimates provided by the 2007 Community Survey were used for all the case studies.

However, the latest breakdown of household distribution into the four settlement types was done in the 2001 Census. In the absence of better information, this percentage breakdown has been used as a proxy for the situation in 2007.

In terms of household income, the 2007 Community Survey did not ask for household income information, so the only consistent data source available for this information is from the 2001 Census. As both poverty definitions and incomes have increased over the past 6 years in line with inflation, we have retained the 2001 proportions. The assumption is therefore that the ***level of poverty*** has remained the same, and the only adjustments have been inflationary ones.

Poverty definitions

Due to the absence of one consistent poverty definition, and the lack of information on poor households, the 2001 Census remains the best source of information on household income, in a consistent national basis. The poverty level has been set at a household income level of R800 per month in 2001 Rands, which equates to R1,200 in 2008.

Defining current backlogs

The model was initially populated with Census 2001 information, for which a breakdown into settlement types is available. The service level backlogs were then adjusted using information provided by the municipalities themselves, and the Community Survey of 2007. Where these estimates disagree, decisions were taken on a case-by case basis. For example, where municipalities have recently eradicated buckets, there may still appear to be some under the Community Survey. Where municipalities claim to have eradicated the use of buckets, a backlog figure of zero was used.

Eradicating service backlogs, with the focus on sanitation services

While future service level targets were set for each of the services where relevant (electricity, roads, housing and solid waste), as the focus of the current analysis is on sanitation, these targets will not be discussed here except in general terms.

The model targets are set to eradicate the sanitation service level backlog within 5 years. While this is later than the target of 2010, it is accepted that this target cannot be met in the remaining time, particularly in light of the slow progress made since 2001 according to the backlog data presented above. Even the relatively small backlogs in the metropolitan areas will be difficult to address, largely because of continuing rapid in-migration, and the difficulty in accessing land for housing.

As a rule, those households in rural areas currently lacking access to sanitation are provided with VIP toilets in the future. The model has limited movement "up the ladder" with the exception of urban areas, where there is likely to be resistance to the provision of VIP toilets. In these cases, it is expected that some of the upgrading will be to higher service levels such as waterborne sanitation systems. Approximately half of the improvement is allocated to basic sanitation services, and half to higher service levels.

In urban informal areas, only the basic level (VIP) is modelled, and higher service delivery should occur through the formal housing program.

In rural and tribal areas, a very conservative programme has been modelled from the current point, and all households are provided with VIPs. The reason for assuming this is based on the popularity of VIPs to date. The separate national assessment looks at the implications of other technology decisions on the operational viability of the FBSan strategy, but the financial analysis focuses primarily on the implementation of FBSan as it is currently taking place.

Allocation of subsidy funds and cross-subsidy funds

In line with recent trends in the case studies (such as Amathole and Tshwane), ES funds are only allocated to poor households. Higher income households are expected to cover the full cost of their own services.

The model makes provision for a surplus charge to be levied on higher income households and non-residential consumers, to cover the costs of providing basic services to poor households, should the ES funds be inadequate. The following table sets out the surcharges levied for sanitation services. Similar surcharges are also levied for the other trading accounts where applicable.

Table 5: Surcharge levied on non-residential and higher-income residential households for sanitation services

Settlement type	High-income residential	Non-residential
Urban Formal	30%	20%
Urban Informal	5%	2%
Tribal areas	10%	2%
Rural Formal	10%	10%

These show the initial surcharges used in the model. However, this level was altered in the modelling exercise to assess the sensitivity of municipal income to this cross-subsidy, the level of cross-subsidy necessary to cover the operational costs of the FBSan strategy.

Revenue

User charges are an important source of revenue for the sanitation service, along with a portion of Equitable Share funds to cover the provision of services to the poor.

The total revenue from user charges is calculated as follows:

- For high income households and non-residential consumers: revenue = full cost of operating the service plus a surcharge to cover the operating cost;
- For low income households: revenue = affordability limit (without going above cost of service). This cannot be more than 10% of monthly household income;
- Indigent households: No revenue, as the operating cost of providing their service is covered with subsidy funds.

It is important to note that as tariffs are set at an affordable level for lower income households, cost-recovery is not used as a parameter in the model. In reality, cost-recovery is an ongoing challenge for municipalities, putting even further strain on already limited financial resources.

Besides user fees, the model also provide for a number of other revenue types, including the following operating revenue types:

- Equitable Share, taken from the Division of Revenue Act 2008;
- For category A & B municipalities, the property rates income from their current financial statements;
- For category A & C municipalities where relevant, the RSC levy replacement grant (DORA 2008);
- The water services operating transfer subsidy (DORA 2008);
- Agency fees, from current financial statements;
- Other internal revenue sources, such as interest payments, and other operating grants and subsidies, not relevant to the sanitation sector.

The sources of capital funds considered include the following:

- The Municipal Infrastructure Grant (MIG), also from the DORA 2008;
- Other capital subsidies mentioned in the financial statements or DORA;
- Municipal reserves;
- Loan funds – This is calculated as the gap between what is available from municipal funds and grants available to them, and the total cost of the capital programme.

The following section presents some of the key results of the case-study analysis.

5.2.3 Key results from the case-studies

The significance of differing municipal revenue bases of sustainable implementation of FBSan

The following graph compares the operating expenditure with the anticipated revenue, both in year 1 of the model and in year 10, when all backlogs are expected to be eliminated. In this scenario, the City of Cape Town is subsidizing the full operating cost of the sanitation service provided to poor households, while lower income households are paying no more than 2% of their monthly income on sanitation, (another 8% is assumed to be allocated to the rest of the municipal bill, including rates).

As can be seen, Cape Town is relatively able to subsidize the operating cost of subsidising the provision of sanitation services to the poor, with revenue slightly exceeding operating costs in year 10.

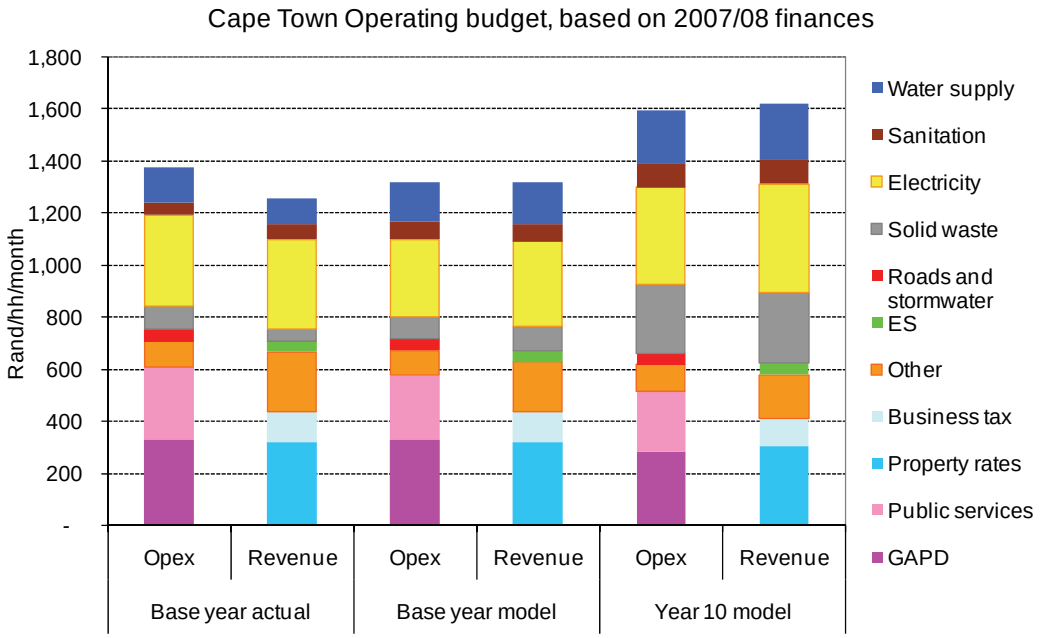


Figure 1: Calibrating the model – modelled and actual year one compared to year 10 projections for the City of Cape Town

The presence of a large rates base enables them to fund their overheads and the ES and cross-subsidy is sufficient to cover the cost of providing free basic services.

This assumes an average cross-subsidy or surcharge of 25% on both business and higher income households. It also assumes a growing rates base, with real growth of 3% per annum.

Raising the poverty level from R800 to R1600 pm is still possible, with the same growth in rates income, and increased cross-subsidies. (Note: these figures are in 2001 Rand. Equivalent values in mid 2008 are approximately R1200 or R2400 using the CPI.)

However, if economic growth is not sustained at this rate, if ES share funds do not grow at the same rate and cross-subsidies cannot be raised, the results quickly change to not being viable, and the operating costs exceed revenues.

A similar situation applies in Tshwane. However, due to the higher poverty levels in Tshwane, if any one of these variables changes, the municipality can no longer cover their operating costs.

Breede Valley LM is in a similar position to the metropolitan municipalities, due to the relatively low incidence of poverty (15% below R800 per month in 2001 Rand).

However, it is more sensitive to any assumptions which may change, such as lower economic growth, receiving less equitable share, or increasing the level of poverty to the next level, at R1600 per month in 2001 Rand.

The graph below shows a situation in year 10, where the poverty level has been increased to R1600, and operating costs now exceed revenues.

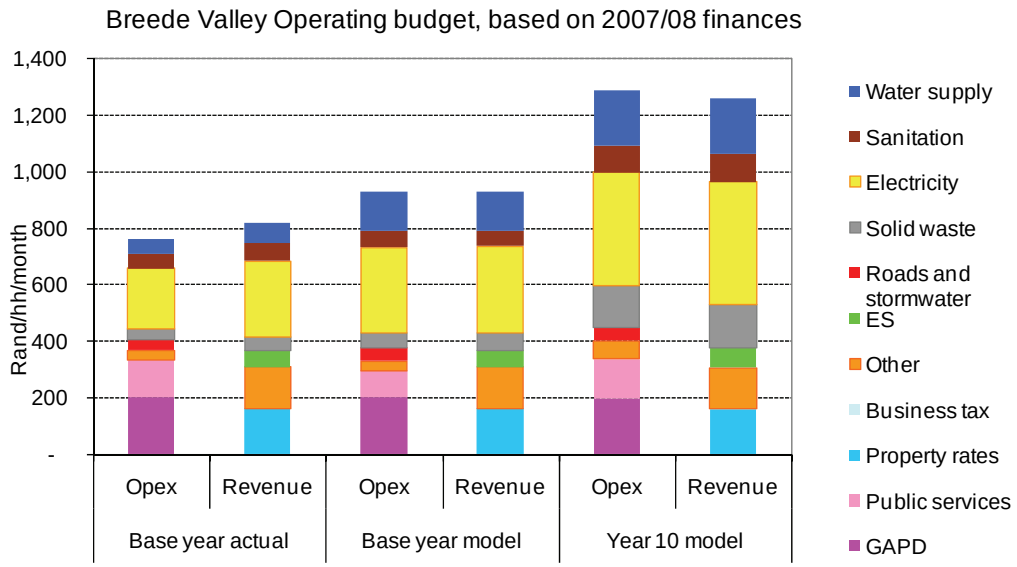


Figure 2: Modelled and actual year one figures compared to year 10 projections for Breede Valley LM

While the situation in the metros and wealthier LMs such as Breede Valley look comparatively healthy, it must be remembered that this merely shows what is possible.

These service levels also have an impact at the household level, which will be explored below. The tariff revenue required might not be acceptable to higher income households and non-residential consumers.

The following graph shows the likely outcome in **Ugu DM**, with similar growth rates and subsidy levels as those shown above, including a 25% surcharge on higher income users. (This is the surcharge which enable metro's to cover their operating expenditure while providing free basic sanitation to poor households.)

In this scenario, higher-income households and businesses are paying only the cost of their services, plus the 25% cross-subsidy surcharge. At this payment rate, the model, using standard assumptions, could not match the current levels of tariff revenue in Ugu. What this essentially means is that costs are much higher in Ugu than elsewhere (as expected) and that based on the household economic profile, the non-poor households and business consumers are already paying higher tariffs than elsewhere.

In addition, due to the limited resource base and the absence of property rates, some of the ES has to be used to cover core expenditure. As a result, very little remains for the services and the municipality will be under great pressure to use ES for their own overheads, rather than service provision.

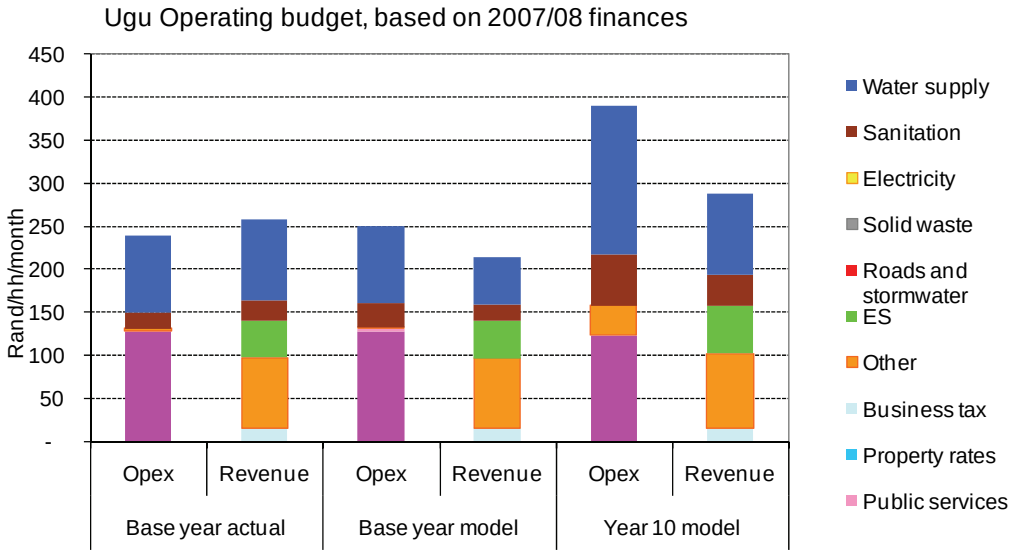


Figure 3: Impact of higher than average costs, a small revenue base and large backlogs. Ugu DM is unable to cover operating expenditure using the standard 25% cross-subsidy. Actual versus modeled financial balance for year one, compared to year 10 projections for Ugu DM

This picture is only reversed when a surcharge of 100% is levied on all higher income households and businesses, in all settlements. This is clearly not an equitable situation.

This finding also matches what is known of Ugu, namely the use of both availability charges levied on vacation homes, and the very high per kilolitre tariffs. The burden of providing services appears to be borne disproportionately by higher income households and the non-residential sector. This is in strong contrast with metro areas, where the required cross-subsidy is much lower.

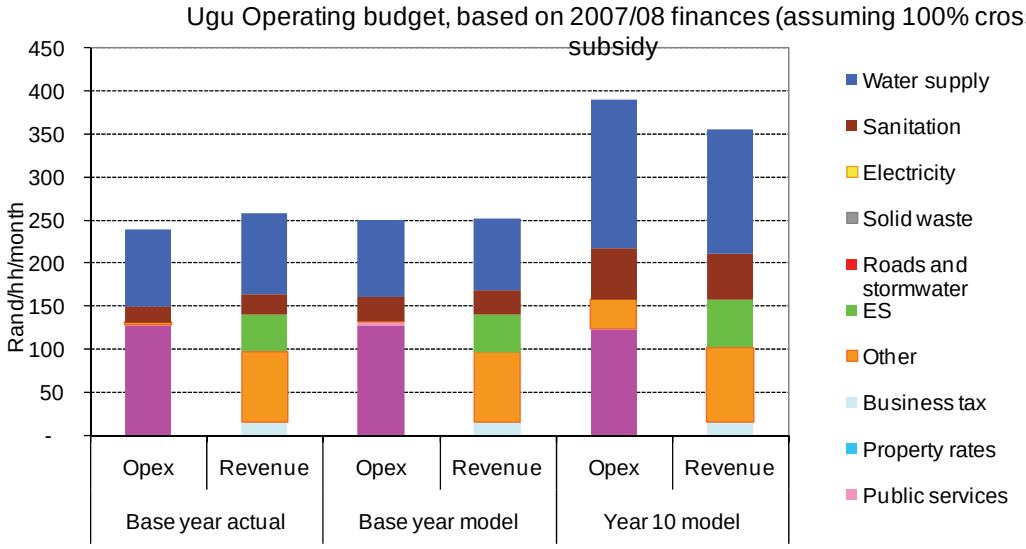


Figure 4: 100% cross-subsidy required to cover costs in year 1, while projected year 10 revenue remains inadequate in Ugu DM

The situation in **Amathole DM** is shown below, and also clearly shows the inadequacy of current funding streams to fund FBSan provision in poor areas.

While the current year situation is fine, due to the limited service base, the year 10 view with services rolled out across the district is very different.

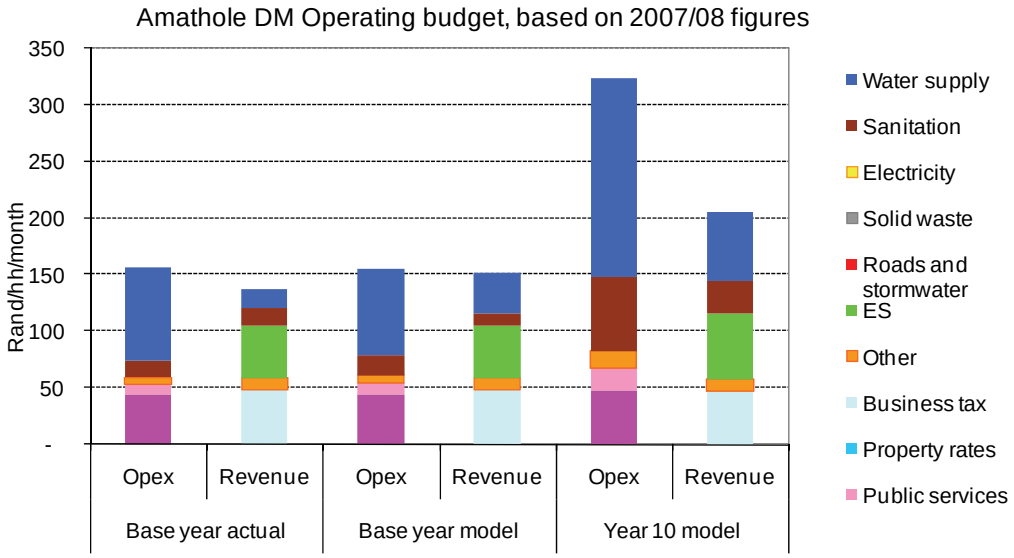


Figure 5: Impact of a large current backlog in Amathole DM – Modeled and actual year one operating account, compared to year 10 projections

The cross-subsidy requirement in differing municipal contexts

The only revenue options open to municipalities in covering the operating costs of the FBSan strategy include the grant funds received through the Equitable Share, and user-fees by residents and local businesses.

As shown above, for municipalities with strong revenue base and a relatively low proportion of poor households relative to full fee-paying consumers, such as in the metropolitan areas, the degree of cross-subsidy required is not that high.

As can be seen in the case of **Tshwane** below, the additional cost of serving low income households which is not covered by tariff revenue or ES funds (represented by the yellow hatched deficit bar) can be covered without much difficulty by the 25% cross-subsidy levied on high income and non-residential consumers.

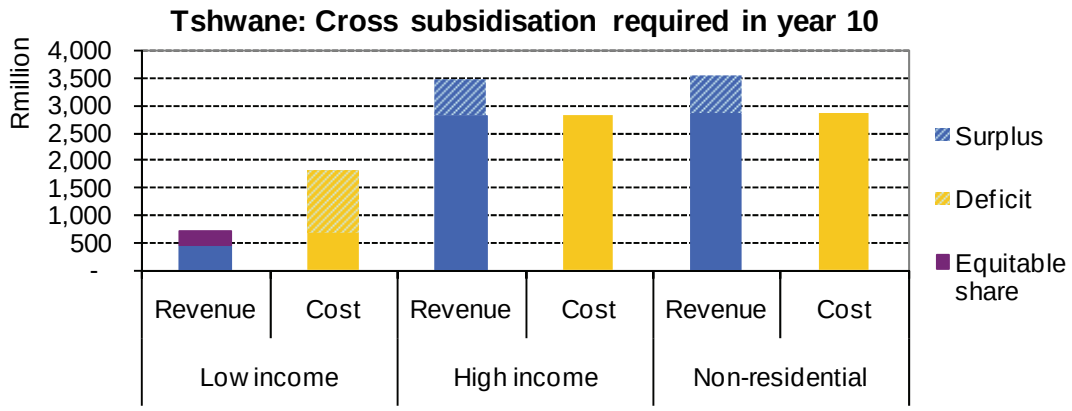


Figure 6: Large revenue base in metropolitan areas helps to cross-subsidize the cost of providing sanitation services to low income households in Tshwane metro

However, in the case of **Amathole DM**, where the proportion of fee paying households and businesses is much smaller, and the proportion of poor households which require subsidisation is much higher, the cross-subsidy is now completely inadequate.

The same 25% cross-subsidy as used in the Tshwane case above, represented by the hatched blue area above the tariff revenue for high income and non-residential consumers, is insufficient to cover the deficit indicated by the yellow hatched area, or cross-subsidy required to fund FBSan for poor households.

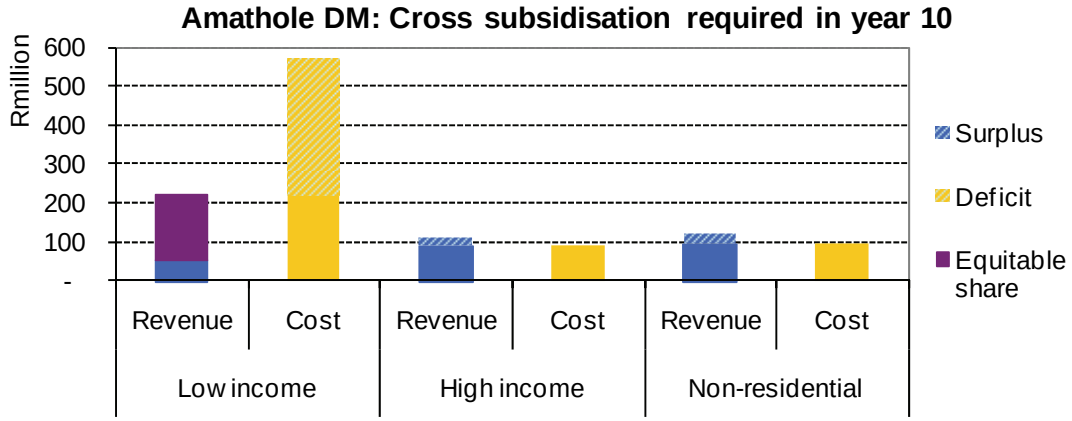


Figure 7: Small revenue base in Amathole DM is unable to generate enough subsidy funds to cover the cost of providing services to low income households in year 10.

If municipalities try to implement the policy in these contexts, they will have to raise tariffs on higher income households and businesses to a degree that will harm local economic development. This is discussed more in the following section.

What is more likely is that where municipalities are forced to provide FBSan to poor households, they will have to compromise on other aspects of service provision to balance their budgets. Maintenance is already at chronically low levels, and there is a real danger

that municipalities will be forced to neglect maintenance of existing assets even further if they are forced to provide this extent of services for free.

The possible impact on local economic development

If municipalities try to implement the policy in these contexts, they will have to raise tariffs on higher income households and businesses to a degree that will harm local economic development.

The previous sections have focussed on establishing the level of cross-subsidy and ES funds required to cover the operational costs of the FBSan policy in the future, once backlogs have been eradicated.

However, it is important to note that a 25% surcharge in the model does not mean that a wealthier household or business is only paying 25% more than lower income households. It means that they pay the operational costs of their own service, in addition to the 25% surcharge. The amount paid by lower income households (those earning between the poverty cut-off of R800 and R3500 (both in 2001 Rand) is limited to a maximum of 10% of their household income.

As this is generally below the cost of providing the service, there is a substantial gap between the bills paid by higher income and lower income households, as demonstrated by the following graph showing an average consolidated household bill required to fund all of the City of Cape Town's responsibilities.

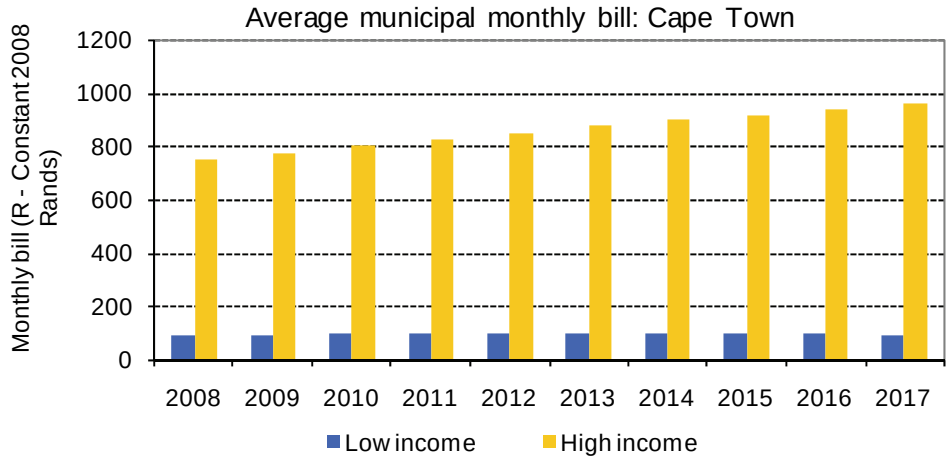


Figure 8: Large discrepancy between bills and costs – low-income households are paying tariffs much lower than the actual cost of provision

This large discrepancy between the bills paid by higher income households, and lower income households is likely to be very unpopular. In the poorer municipalities, with a very limited revenue base, municipalities are going to be very reluctant to levy these bills on businesses, for fear of chasing them to other areas. Local economic development issues will dissuade these municipalities from using very high bills.

Bills which are seen as unfair by consumers may also harm cost-recovery measures. Any cross-subsidy which is levied must be at a level that is acceptable to both local businesses and residents. There is therefore a limit to the amount of cross-subsidy funding which can be used to fund Free Basic Sanitation, both in terms of local economic development and affordability, and of equity between municipalities.

The impact of failing to raise sufficient operational revenue

In the face of high cross-subsidy requirements, what is more likely is that where municipalities are forced to provide FBSan to poor households, they will have to compromise on other aspects of service provision to balance their budgets. Maintenance is already at chronically low levels, and there is a real danger that municipalities will be forced to neglect maintenance of existing assets even further if they are forced to provide this extent of services for free.

It should be emphasised that while the differences may look small at the aggregate level, a lack of revenue will result in reduced system maintenance, and ultimately a failing service. This will effectively result in an ongoing backlog.

5.2.4 Summary findings from the case-study modelling

In the presence of a strong local economic base, the provision of free basic sanitation is feasible and viable. However, where the revenue base is weak and opportunities to cross-subsidize are limited, the provision of free basic sanitation using the current level of ES funds is not feasible or viable. If municipalities try to implement the policy in these contexts, they will have to raise tariffs on higher income households and businesses to a degree that could harm local economic development. What is more likely is that where municipalities are forced to provide FBSan to poor households, they will have to compromise on other aspects of service provision to balance their budgets.

5.3 National level modelling of operational FBSan finances

A key factor behind the national modelling has been the realisation that many of the operational assumptions made to date have assumed best-practice usage of the service. The model investigates the impact on service sustainability of relaxing these assumptions, by for example, shortening the period between pit emptying.

5.3.1 Model overview

The national model focuses on the operational implications of rolling out the Free Basic Sanitation strategy. A simple MS Excel model was developed to allow different scenarios to be tested easily. It investigates the sensitivity of the sustainability of sanitation services to certain assumptions, in particular with regard to:

- Operational assumptions, such as the rate at which pits fill up
- Poverty levels
- Real growth in the municipal Equitable Share, and the proportion allocated to sanitation
- The choice of service technology
- Cross-subsidy assumptions.

It allows the user to easily change a set of parameters, namely:

Operating cost assumptions

- Percentage service level mix when the backlog is eradicated, between waterborne sewer, urine diversion systems, and VIP latrines.
- Percentage mix of different VIP technologies, between a simple single pit, a double pit, and a lined pit.
- Changing assumptions about the time between pit emptying and moving of the top structure.

Operating revenue assumptions

- Percentage bad debt
- Percentage surplus to be generated from higher income users
- Choice of eradicating the backlog by either 2012 or 2017
- Real growth in Equitable Share subsidies over the period
- Percentage of Equitable Share allocated to sanitation services, of the whole suite of sanitation services.

The model uses only a sample of indicative service level types, and does not capture the subtleties of household size, number of consumer units per facility, or provincial variations. It rather focuses on the operational implications of providing free basic sanitation to poor households, assuming the provision of one facility per household.

5.3.2 Technology types and operating cost assumptions

Due to the uncertainty surrounding operational costs, the national model has used the best available data to obtain the possible cost-ranges, and to illustrate the sensitivities of the various variables.

O&M cost uncertainty and the importance of operational assumptions

Information on operating costs is much harder to obtain than capital cost information, and there is much less agreement on these figures. An explanation is needed for this divergence, particularly as the DWAF costs appear to be significantly lower. One possible explanation is that most of the O&M cost estimates done to date have been based on best case assumptions. For example, in DWAF's first 2002 estimate, the pits are emptied every 5, while in the 2007 brochure, they are emptied every 8 years. The Tshwane report on the other hand assumes that it will be necessary to move the top-structure every 4 years, and empty the pit after 2 years. The modelling therefore attempts to show the sensitivity of the sustainability of the sanitation service to these assumptions.

The capital costs also appear to be too low in 2007. According to the WIN-SA lesson series, for 29 bucket eradication projects approved for MIG funding, the average unit cost was R10 828, and for the 11 projects that were awarded in that month, the average unit cost was R14 450. This is much higher than the MIG unit cost of between R4 000 and R9 000.

On closer inspection, it appears that much of the difference is due to differing assumptions regarding pit life, or the period between emptying. The actual costs of emptying provided by DWAF in their (draft) Pit Emptying Guideline reference the results of the eThekwini study. However, the August 2007 DWAF Guideline for costing basic sanitation provides only the 'typical' annual costs mentioned above, which make very conservative estimates regarding the anticipated life of pits.

Drawing from various DWAF sanitation costing and technical guidelines, and numerous studies (Tshwane and eThekwini costing studies; Bhagwan et al 2008; Snyman 2008) a series of on-site service level scenarios were developed. The model calculates the effect of differing mixes of these technologies on operating costs. The different VIP technology types have been simplified into 3 main categories, to illustrate the impact of each type on ongoing O&M costs. These are:

- A **simple VIP**, which when full, is replaced with a new latrine. The cost for this option is essentially a new top-structure, or moving the structure. The annualised cost will depend on the user-defined life of the pit.

- A **double VIP or VIDP** which is designed to be manually emptied. Again, the annualised cost of emptying depends on the anticipated life of the pit.
- A **lined VIP**, which has to be emptied mechanically, and the sludge undergoing some form of treatment or processing before disposal.

In all cases, the life of the pit is a user-defined input. The mix between these technology types is determined by a percentage input, with the total of all 3 amounting to 100%. The costs of pit emptying vary widely, with estimates varying from R600 to R1150 in eThekwini (2008 figures). The model provides for costs for both manual and mechanical emptying.

Urine Diversion Systems (UDS) is assumed to be easier and cheaper to empty (Snyman, 2008), and while households should be able to take responsibility for this, the model provides for a reduced pit emptying fee on an annual basis, for those households unwilling to empty their own pits. (This is also an opportunity for private sector involvement). A cost of R200 has been used, based on the costs provided by Tshwane municipality, which is a third of the emptying cost of the VIP. (In many cases this will be funded by households themselves, so this should balance out the unusual cases which require more expensive maintenance.)

Table 6: Operating costs (in Rand per household) per service level used by the model

	Basic annual O&M	**Charge per Empty**	**Moving top-structure**	**Annualised total costs R's per household**			**Notes**
	R's per hh	R's per hh	R's per hh	8 years	4 years	2 years	
Waterborne – sewer	1,183			1,183			Based on Tshwane study for smallest plot size of 300 m^2.
Waterborne – septic	1,183			1,183			Due to small and static proportion of consumer base, based on waterborne costs.
Urine diversion	50	200		250			Model assumes 1 empty per year. Manual emptying, largely by households
Simple VIP	50		4,000	425	800	1550	Based on DWAF cost in 2007 report. On the conservative side if new facility built. High if existing top structure moved
Double VIP	50	700		138	225	400	Average estimates of cost of manual emptying, based on eThekwini study.
Lined VIP	320	1,100		458	595	870	DWAF estimate of R800 per empty in 2007, eThekwini costs of up to R1100. Higher cost used for scenario purpose, and to take account of any sludge treatment that is required.

Although many of the DWAF costs appear to be appropriate, the annual costs assume best-practice use of the pits, resulting in significantly lower annual O&M costs. For example, the 2007 costing and technical guidelines anticipate emptying only every 8-10 years. This has a dramatic impact on annual operating cost estimate, which the table above demonstrates.

5.3.3 Revenue sources

Operating revenue is derived from 3 sources:

- Operating grants, in particular the Equitable Share;
- User fees; and
- Cross-subsidies from non-residential and wealthier consumers.

As the Equitable Share is such an important factor in the sustainability of the FBSan strategy, this revenue source is discussed here in some detail.

The Equitable Share

The intention behind attempting to model the full-suite of services provided by municipalities is to ensure that the full financial burden on municipal resources is captured. In particular, the analysis wanted to explore the demands placed on the Equitable Share funds in different municipal contexts.

The Equitable Share subsidy is calculated to ensure that the operating cost of basic services can be covered. This subsidy aims to contribute towards the general operating account of the municipality, when costs are not recovered from very poor households. For the purposes of working out each municipalities allocation based on the formula, this is defined at the number of household earning less than R800 per month, based on 2001 Census information.

The equitable share allocation to the local sphere of government takes account of the fiscal capacity, fiscal efficiency, developmental needs, extent of poverty and backlogs in municipalities, to the extent that such information is available.

Structure of the local government equitable share formula

$$Grant = BS + D + I - R \pm C$$

where

BS is the basic services component

D is the development component

I is the institutional support component

R is the Revenue Raising Capacity Correction and

C is a correction and stabilisation factor.

Figure 9: Equitable Share formula for local government

The allocation of sanitation is calculated under the BS, or Basic Services component. The purpose of the BS component is to enable municipalities to provide basic services and free basic services to poor households. For each of the subsidised basic services there are two levels of support: a full subsidy for those households that actually receive services from the municipality, and a partial subsidy for unserviced households, currently set at a third of the cost of the subsidy to serviced households. (DOR Bill, 2007)

Sanitation is recognised as one of the core basic services, along with water reticulation, refuse removal and electricity reticulation. A key ingredient in the current formula is the subsidy received by poor households for various services delivered to them. The service costs amount to R130 per month for a serviced household and R45 per month for an unserved household. In addition, all households receive approximately R12 a year towards the provision of environmental health care services.

Table 7: Composition of basic services component of the ES formula

Service cost per month	Serviced households	Unserviced households
Electricity	R40	R15
Water	R30	R10
Refuse	R30	R10
Sanitation	R30	R10
Total	R130	R45
Source: DOR Bill, 2007		

It should be noted that a municipality cannot calculate their own BS allocation by simply taking the relevant Census information, and multiplying the eligible number of households by the relevant service costs per service. While this is the basis for the opening calculation, in addition to the other components of the formula, the final amount is scaled according to the amount of funds available to the entire Equitable Share allocation in any given financial year.

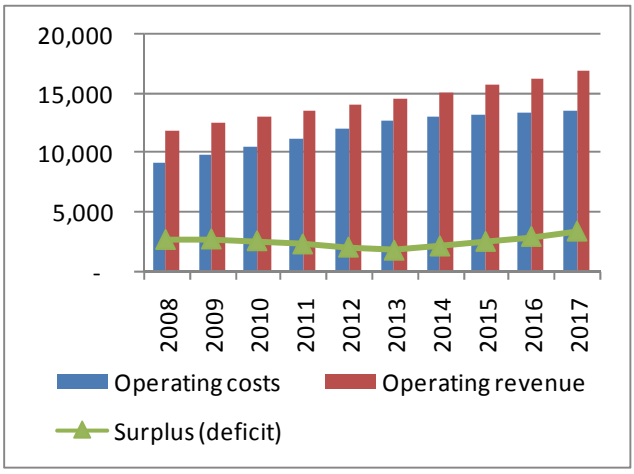
5.3.4 Key findings of the national level modeling

Equitable Share allocations are key to the sustainability of the FBSan strategy

The national model shows that the ability to fund the FBSan strategy is very sensitive to certain assumptions, in particular the amount of ES available to the sanitation service.

While on a national scale the picture looks manageable, the challenge will be to ensure that aggregate national flows are directed to the right places.

The following graph shows the operating surplus under a VIP oriented policy (with a mix of VIP types), assuming that 23% of the municipal ES is allocated to sanitation services, and all backlogs are eliminated by 2012. This scenario also assumes that ES funds continue to grow at a real rate of 7% per annum. Under these conditions, FBSan is clearly possible at the aggregate national level.

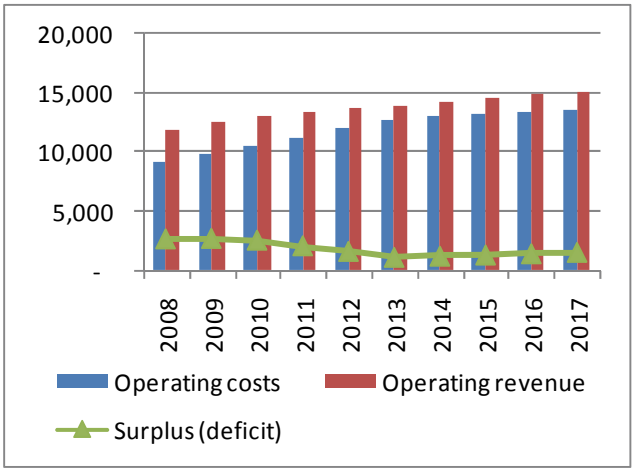


23% of ES grant to sanitation, and real growth of 7%

(Costs in millions, 2008 Constant Rands)

Figure 10: Costs of providing Free Basic Sanitation can be covered if a large proportion of the ES is allocated to sanitation, and ES continues to grow well above inflation.

If we change the growth in ES to only 3% in real terms, while maintaining a 23% allocation to the sanitation service, the provision of FBSan remains possible, as illustrated below.

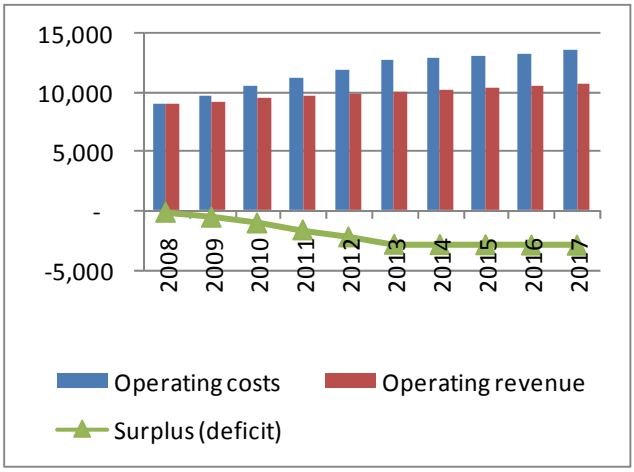


23% of ES grant to sanitation, and real growth of 3%

(Costs in millions, 2008 Constant Rands)

Figure 11: Impact of a lower real growth rate in overall ES allocations

However, keeping all other variables unchanged, if only 6% of the basic services portion of municipal ES is allocated to sanitation (the amount available to municipalities such as Breede Valley and Cape Town in order to meet all their service needs), the picture is very different. Available revenue sources are no longer sufficient to meet the operational costs, as shown in graph below.



6% of ES grant to sanitation, and real growth of 3%

(Costs in millions, 2008 Constant Rands)

Figure 12: Impact of lowering the amount of ES allocated to the sanitation service

The share of ES that municipalities will be able to allocate to the sanitation service will be crucial for ensuring a sustainable sanitation service. Holding all other assumptions constant, the one scenario found that 17% of ES must be allocated to the sanitation service to meet operational needs. Due to the full suite of municipal obligations, it is highly unlikely that all municipalities will be able to dedicate this amount of ES funds to the sanitation account.

National economic growth outlook and the implication for Equitable Share funds

While the section above shows that an annual real increase in the ES funds of 3% would be sufficient under certain circumstances, there are real concerns about the ability of the economy to sustain this level of growth over the next decade.

The current global financial crisis will have an impact on our economy, the extent of which remains to be seen. However, it is probably safe to say that an assumption of 3% real growth in government revenue is generous. If this growth rate is not achieved, municipalities will be under significant financial pressure to cover the costs of providing Free Basic Sanitation.

Impact of technology choices on O&M costs

Detailed studies are required into the actual operational costs, and actual service level usage, to test if the current costing assumptions, such as 5 to 8 year pit life are valid.

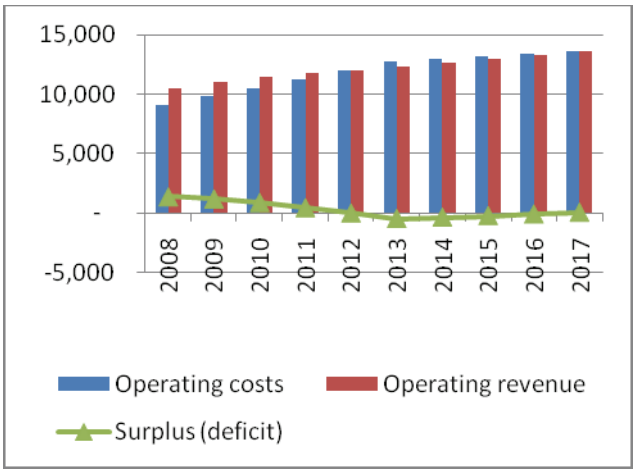
The national model provides for 3 different service level scenarios when the backlog is eliminated, which are depicted below.

Table 8: Sanitation service level scenarios for 2017 or 2012

	2007	**2012 or 2017 – user defined**		
Service level scenarios		**All VIP**	**UDS**	**Up the ladder**
Waterborne – sewer	55.1%	63.2%	63.2%	77.2%
Waterborne – septic	2.8%	2.8%	2.8%	2.8%
UDS	4.1%	4.1%	27%	10%
VIP	6.5%	29.9%	7%	10%
Inadequate	31.5%	0%	0%	0%
	100%	100%	100%	100%

The following scenarios keep the ES allocation at a constant 15% of the total municipal ES allocation, and a real growth rate of 5%. It also assumes a cross-subsidy of 20% from higher-income households.

The first scenario modelled is one which emphasises VIPs as the service level of choice. Under this scenario, the cost of providing services can just be covered.

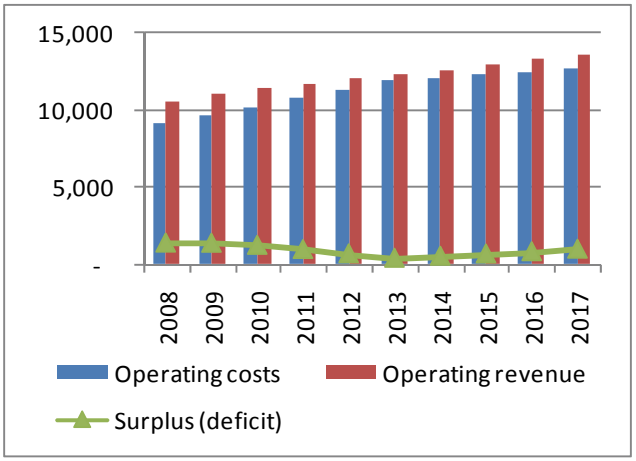


Roll–out of VIP services, accounting for 30% of all services by household.

(Costs in millions, 2008 Constant Rands)

Figure 13: Impact of technology choice on financial viability – continued rollout of VIPs

If a UDS option, with lower operational costs is selected, the sustainability of the system overall improves.



UDS option, with 27% of all households having UDS latrines by 2012.

(Costs in millions, 2008 Constant Rands)

Figure 14: Impact of technology choice on financial viability – increased rollout of UDS

However, even under quite generous ES assumptions of 15% and real growth of 5% per annum, if there is significant political pressure to move households up the service ladder by 2017, there will not be sufficient funds available to cover the cost of FBSan.

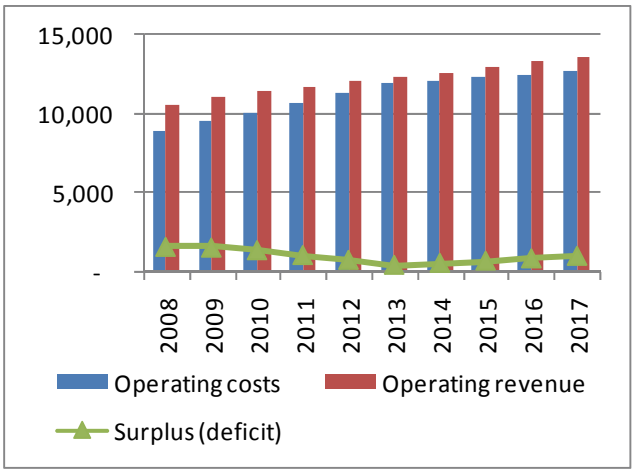
The impact on operating costs of technical operating assumptions

Differing operational conditions for on-site services could also have significant implications for the free basic sanitation strategy. The following scenarios used the same ES allocation assumptions as above, and changed the mix of VIP technology types in use. The different technology types have different operational conditions:

- A simple VIP, which when full, is replaced with a new latrine. The cost for this option is essentially a new top-structure, or moving the structure.
- A double VIP or VIDP (ventilated improved double pit) latrine which is designed to be manually emptied. Again, the annualised cost of emptying depends on the anticipated life of the pit.
- A lined VIP, which has to be emptied mechanically, and the sludge taken to a waste-water treatment centre.

In all cases the annualised cost will depend on the user-defined life of the pit, estimated at between 2 and 8 years.

The scenario below assumes a mix of VIP types, with generous (15%) ES allocation, and an 8 year pit design life for all of the pit options.

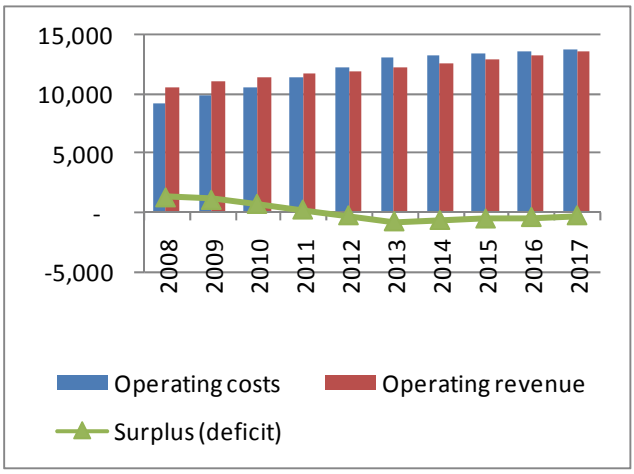


Pits assumed to last 8 years before emptying is required

(Costs in millions, 2008 Constant Rands)

Figure 15: Impact on financial viability of operational assumptions – 8-year pit life

If the same mix of VIP types is retained, but only the time between pits filling up is reduced to 4 years, the following picture emerges. Once the backlog is eradicated revenue sources will no longer be sufficient to cover operational costs.



Pit life reduced to 4 years

(Costs in millions, 2008 Constant Rands)

Figure 16: Impact on financial viability of operational assumptions – 4-year pit life

A very similar result is achieved if all lined pits are used, with mechanical emptying, or if only simple pits (which are replaced when fill) are used. Only the VIDP option, with manual emptying and lower operational costs, manages to cover costs under this option.

Inappropriate use of a pit which leads to shorter intervals between emptying will have significant impacts on the ultimate sustainability of the service.

Assumption of best-practice usage of the various technologies obscures the potential costs of the FBSan strategy.

The importance of cost recovery and credit control measures

Much of the above analysis has assumed that consumers will pay the bills presented to them. However, it must be noted that municipalities face an ongoing battle in improving cost-recovery levels. It could also be argued that there is something to be said for instilling a culture of payment for services, and requiring even token payment for services.

All municipalities are faced with the challenge of ensuring that those who can pay do pay, so that scarce subsidy funds can be targeted where they are needed most.

5.4 Key issues emerging from the modeling

There is a need to clarify exactly what the municipal responsibility with regard to on-site O&M is. For example, who should be responsible for emptying pits more frequently than once every 5 years, particularly if household are abusing the technology?

- Better operational cost data is required, based on actual usage patterns, to enable adequate operational planning.
- Continued economic growth is essential for the required growth in ES funds.
- The importance of cost-recovery and credit-control measures: Those who can pay must pay.
- The significant impact of differing local revenue bases on the viability of FBSan.
- It has become clear that due to differing municipal circumstances, one national FBSan strategy is not practical or equitable. There is a need for greater policy flexibility.

6. REVIEW OF THE CURRENT DRAFT NATIONAL FREE BASIC SANITATION STRATEGY

In light of the findings from the review of international experience, the local case-studies, stakeholder engagement and the financial analysis, the current draft strategy, as it is being implemented, is briefly reviewed here.

The main lessons from the international literature review included the following:

- The importance of taking the local context into account
- A demand rather than supply driven approach
- Emphasis of software rather than hardware
- Community and stakeholder participation
- Setting realistic targets and being flexible
- The importance of reliable data.

Using these 6 points, there is much with the implementation of the current strategy which can be improved.

In terms of **local context**, the draft strategy emphasized the importance of "national guidelines with local choice." This is aimed at encouraging municipalities to be flexible in their implementation of the strategy locally, to ensure its long-term success. However, in reality, municipalities have found that their choices are limited.

The reality is that the FBSan strategy has been a centrally run, top-down strategy, with limited scope for local innovation. MIG funding requirements have resulted in a high degree of uniformity. The MIG reporting requirements and guidelines in particular appear to have resulted in a standardized approach which was not the intention of the original strategy.

In keeping the definition of a basic sanitation service facility and service outcomes based, the Draft Strategy is attempting to avoid the dangers of specifying any particular technology type, or putting a supply-driven approach in place. Within the parameters of a national target, that of ensuring access to basic sanitation for all by 2010, the Strategy attempts to incorporate elements of a demand responsive approach. It does this by leaving this choice of technology type up to the local municipality concerned, based on their specific context and financial situation.

However, it does recommend that water-borne sanitation system is most appropriate in urban, high density situations and VIP toilets for most other situations. In this way the current application appears to have become an essentially a **hardware-subsidy, supply-driven approach**, offering a standardized project, and focused on meeting coverage or hardware targets, rather than on the harder to measure outcomes of improved sanitation and hygiene practice. The emphasis has also been on the household sanitation, rather than on community level outcomes.

While **community participation** is a key principle of the strategy, the evidence from the case-studies is that participation is generally limited to the construction period. Very little evidence of ongoing hygiene awareness was found. This appears to be due to institutional uncertainty, with Environmental Health seeing "sanitation" as a water services issue, while the water services department believes that their obligation is completed once the engineering and initial consultation is over. Irrespective of who takes responsibility for this issue, this is a key concern for promoting a sustainable improvement in sanitation.

Probably the biggest criticism that can be levelled against the Draft Free Basic Sanitation Strategy is that the **targets are unrealistic and inflexible**. Local municipalities have been presented with a nationally determined target, without having control over the funds required, or in most cases the capacity, to meet these targets. Not only will the targets not be met, but the pressure to do so is overriding the conditions needed for sustainability.

According to the case studies, the decision regarding **who benefits** from FBSan appears to rely mainly on the revenue base of the municipality in question. While this makes financial sense, it also emphasises the inadequacy of the Equitable Share as a funding mechanism, resulting in inequitable subsidies between richer and poorer municipalities.

The **absence of recent, reliable data** is also a significant challenge. With the Census data now 8 years old, there is currently no consistent and reliable way of keeping track of beneficiaries, or of identifying beneficiaries. This remains one of the greatest challenges to the implementation of the FBSan strategy.

Monitoring appears to be non-existent, as municipalities are stretched to capacity with meeting their existing obligations. They simply do not have the time or resources to monitor the outcomes of their sanitation programmes currently.

7. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of key findings and recommendations for the implementation of sustainable free basic sanitation services for the poorest households and other vulnerable groups.

7.1 Institutional and policy aspects

7.1.1 Key conclusions

The importance of the municipal context and the need for flexibility

Free Basic sanitation services were affordable for the metropolitan municipalities such as Tshwane and Cape Town because they have a greater degree of flexibility in terms of cross-subsidization as well as a greater level of autonomy in designing an approach to FBSan independent of guidance from the Department of Water Affairs (DWA). Less capacitated municipalities such as Amathole and Vhembe DMs on the other hand expressed a need for greater guidance and assistance from DWA in dealing with the challenge of providing free basic sanitation service.

Definition of basic sanitation services

There was a lack of common understanding of the definition of a basic sanitation service within the context of access to basic sanitation service as a constitutional right. There were no guidelines for minimum acceptable standards for a basic sanitation service that meets the constitutional obligation.

Lack of clarity on institutional responsibility for ongoing hygiene education and awareness

Ongoing hygiene education and awareness appeared to be falling between the cracks, with both environmental health and water services departments assuming that the other was responsible for this component. Most of the municipalities did not include ongoing hygiene awareness as a component of the FBSan service. However, all the case-study municipalities provided hygiene awareness programmes as a once-off intervention during the implementation of the basic sanitation infrastructure. This omission could pose a threat to the achievement of sustainable improvement in hygiene practice and health of the beneficiary communities.

Lack of clarity on the purpose of the FBSan strategy

There was a general lack of clarity regarding the purpose of the FBSan strategy. It was seen mainly as a way of providing basic sanitation infrastructure and eradication of the sanitation backlogs, rather than achieving an ongoing sustained improvement in sanitation and health.

Unrealistic targets

The 2010 sanitation target which was set by national government was largely unachievable for the majority of case-study municipalities, particularly in dense urban informal settlements, which are constantly growing, and in rural areas with high backlogs in poor and difficult to service areas.

According to international experience, targets needed to be realistic, both in terms of number of beneficiaries and the scale of the programme. Sanitation expansion programmes appeared to work best incrementally or on a smaller scale and might therefore be challenging to implement on a national scale. The sanitation targets were not flexible enough to take the different contextual factors into account. The presence of unrealistic

national targets promoted a supply-driven approach, and worked against local innovation and community involvement.

The importance of reliable data

The literature review showed that the initial phase of the development of pro-poor subsidies required a substantial financial and time contribution, largely to develop a thorough understanding of the intended beneficiaries, their willingness to pay for services, best approaches for targeting the subsidies to the poorest households and ways of minimizing the administrative costs of the subsidy implementation. While data collection was a costly exercise, research showed that it was important for guiding decisions about where to target the subsidy before implementation rather than learning from mistakes after implementation.

7.1.2 Recommendations

It is recommended that the following actions should be considered to address the institutional and policy aspects of free basic sanitation services:

- The FBSan strategy must be flexible enough to allow WSAs to interpret and implement the strategy according to the local context. National guidelines should not be overly prescriptive, but should offer support and guidance on recommended approaches.
- The current "one municipality, one sanitation policy" approach tends to favour urban households over poorer rural households. Municipal policy needs to explicitly recognise the different challenges of providing basic sanitation services to these different settlement types. Neglecting to do so unfairly disadvantages rural households. A clear example of this is the use of indigent policies, which benefit primarily urban households who receive a monthly municipal bill, and are already relatively better off than those with no basic sanitation facilities.
- The definition of a basic sanitation service within the context of access to basic sanitation services as a human right must be reviewed to provide guidance on the minimum acceptable standard for a basic sanitation service level that meets the constitutional right to basic sanitation for the poor.
- Guidelines were needed to integrate the three pieces of legislation for the provision of basic sanitation services, namely, Constitution of SA, Water Services Act of 1997 and Municipal Systems Act of 2000. These guidelines will support a common approach to the delivery of basic sanitation services by municipalities.
- A greater clarity on roles and responsibilities for ongoing hygiene promotion as a component of FBSan service is needed. The choice of responsible municipal department could be left up to local discretion, but what is essential is that this task is differentiated from the H&HE provided during the toilet construction phase.

7.2 Demand-side aspects

7.2.1 Key conclusions

Household demand for sanitation must continue to be stimulated

A demand for improved sanitation was essential to guarantee a sustainable service. The sanitation implementing approach should respond to the specific project context in order to be successful. While supply-side factors might determine what was physically and financially feasible, achieving sustainability depended on the response of the sanitation programme to local demands, rather than the parameters of what could be supplied. This factor appeared to be of specific relevance to the South African context, where the emphasis on meeting

ambitious sanitation coverage targets had resulted in the adoption of a supply-driven approach.

Focus on hardware rather than software subsidies

The provision of a sanitation facility alone was not sufficient for the achievement of sustainable sanitation services and improvement of public health, unless accompanied by improved hygiene behaviour and awareness.

International experience showed that generous hardware subsidies usually resulted in sanitation programmes reaching fewer people. Households provided with toilets under heavily subsidized programmes often lacked ownership of their facilities and were less inclined to make any lasting improvements to their hygiene behaviour. The findings suggested that large-scale sanitation programmes should offer minimal hardware subsidies wherever possible, with funds used instead to extend programme coverage and to improve the effectiveness of software activities.

Heavily subsidised sanitation infrastructure might support "latrine construction" programmes, but potentially at the expense of innovative, sustainable low-cost sanitation solutions derived from within the community. The community focus was a significant factor in the success of demand-led approaches such as Community Led Total Sanitation (CLTS) in Bangladesh and neighbouring Asian countries.

Community and stakeholder participation

The buy-in and support of the communities were essential for the long-term sustainability of improved sanitation services. Working with a wide network of stakeholders such as local business, local government and NGO structures had also proved to be a key element of success. It was important to realise that good hygienic practice went beyond hand-washing and included cleaning and maintenance of the sanitation facility being used, to ensure that it remained functional.

Measuring impact of sanitation and long-term support

There was currently no monitoring and evaluation of the impact of free basic sanitation services on beneficiary communities. In addition to the counting of toilets, it was important to assess whether good hygienic practices were adopted and sustained in households obtaining the new and/or improved sanitation infrastructure, for the full potential health benefits to be achieved. The international case studies showed that rural people reverted to their former unhygienic habits very quickly if new toilets became blocked, broken or smelly, and if nobody was on hand to provide timely advice or encouragement (Satterthwaite, 2006).

7.2.2 Recommendations

The following actions are recommended for addressing the demand-side of sanitation service delivery:

- The FBSan strategy should be amended to recognise that sustainable service provision is not simply a question of adequate funds, but rather of adequate demand.
- Municipalities should harness the energy and willingness of communities to be partners in the delivery of FBSan services (as clearly shown in the case of Amathole DM, where households dug pits at a faster rate than the municipality could keep up with) and they should be encouraged to tap into community-based systems and innovation in order to promote community ownership and sustainability of sanitation facilities.
- The importance of the integration of H&HE into a free basic sanitation service must be recognized by all municipalities. User education and H&HE must be offered as

part of the free basic sanitation service package rather than a once-off event limited to the provision of basic sanitation infrastructure. The practice of training and employing community health workers should be supported as part of integrating health and hygiene into the delivery of free basic sanitation services for the poor households, especially those living in dense urban informal settlements and rural areas.

- Beneficiary communities should be involved in the selection of basic sanitation technology options and the responsibilities for operation and maintenance of dry on-site sanitation systems between the households and municipalities must be clarified.
- An effective monitoring and evaluation system for the impact of FBSan services on the poor must be developed and implemented to evaluate the impact of FBSan services on the improvement in the quality of life for the poor households.

7.3 Subsidy targeting issues

7.3.1 Key conclusions

FBSan services were not benefiting the poorest households

The approach followed by municipalities in the provision of free basic sanitation services to urban households with full waterborne sanitation systems excluded the majority of the poorest households that lacked access to basic sanitation facilities. For example, rural households were provided with subsidized dry on-site sanitation systems without any O&M plans for the emptying of full pits and safe disposal of human waste. There were also no special subsidy arrangements for vulnerable groups such as physically disabled people and households affected by HIV/AIDS. The use of Equitable Share to subsidise free basic sanitation for all households irrespective of their socio-economic status limited the subsidy funds available to subsidise the poorest households and other severely marginalized groups.

Community involvement in the design of pro-poor subsidies

Municipalities had not put enough effort in engaging local communities in the design of the approach followed in implementing of local FBSan strategy; instead they opted for a top-down approach. Consequently, the FBSan services were benefiting the 'haves' while the 'have nots' continued to live in squalid conditions with poor or no access to adequate sanitation services.

Management of the indigent register

Where indigent registers were used, municipalities needed more resources to verify and re-assess the indigent status of registered households. Social workers were required to visit poor households at least twice a year to monitor their indigent status. Resources were also needed to communicate the free basic sanitation strategy to all target communities.

7.3.2 Recommendations

The following actions are recommended for improving the targeting of free basic sanitation services to the poorest households:

- The primary target of the FBSan services should be the poorest households and other vulnerable groups such as people with physical disabilities and HIV/AIDS affected households. Effective methods of targeting FBSan services to these groups must be developed.
- The current practice of providing poor households with free basic sanitation services as part of a package of free basic municipal services under the indigent support policy should be encouraged.

- There is scope for recognising different levels of poverty in poor areas, to ensure that scarce subsidies are targeted where they are most needed by the poorest households and the most vulnerable groups. Sharing the limited sanitation subsidy among all households reduces the amount available to subsidize the poorest households.
- Municipalities should involve local communities in the design of pro-poor sanitation subsidies because they are well-placed to make decision on how to distribute scarce subsidies so that they benefit the most vulnerable households (including child-headed households, sick and disabled people) that are unable to make any financial contribution to basic municipal services.

7.4 Operational considerations

7.4.1 Key conclusions

Lack of operational planning and data

Most surveyed municipalities did not have O&M plans for pit-emptying of full VIP toilets and safe disposal of human waste or replacement of full VIP toilets where pit emptying was not feasible. This could pose a threat to the long-term sustainability of VIP toilets. Most municipalities are focusing on the provision of basic sanitation infrastructure in order to meet the 2010 sanitation target of access to basic sanitation for all, and the focus on basic sanitation infrastructure subsidies has diverted attention away from the need for O&M planning.

The cost of maintaining any system was very sensitive to certain operational assumptions, and it appeared that the life cycle of a VIP toilet was currently not well understood.

The impact of failing to generate sufficient operational revenue

In the face of high cross-subsidy requirements, it was likely that where municipalities with limited revenue base were forced to provide FBSan services to poor households, they would have to compromise on other aspects of service provision to balance their budgets. Maintenance was already at chronically low levels, and there was a real danger that municipalities could be forced to neglect maintenance of existing assets even further if they were forced to provide this extent of services for free. It should be emphasized that while the differences might look small at the aggregate level, a lack of revenue could result in reduced system maintenance, and could ultimately lead to a failing sanitation service.

7.4.2 Recommendations

- The role of the household with regards to on-site maintenance of sanitation facilities must be clarified.
- Better operational cost data is required, based on actual usage patterns, to enable adequate operational planning. Detailed studies are required to investigate the actual operational costs and actual service level usage of VIP toilets in order to test if the current costing assumptions, such as 5 to 8 year pit life are valid.
- The national water services sector regulator must ensure that FBSan service provision does not lead to the neglect of maintenance which is necessary to ensure long-term sustainability of sanitation services.

7.5 The financing of free basic sanitation

7.5.1 Key conclusions

Equitable Share allocations are key to the sustainability of the FBSan services

The national modelling exercise showed that the ability to fund the FBSan services was very sensitive to certain assumptions, in particular the real growth in the overall national ES Grant and the amount of ES available for the sanitation service at the municipal level, relative to overheads and other services.

While on a national scale the current amount of subsidy appeared adequate, the challenge would be to ensure that aggregate national flows were directed to the right places, both in terms of poorer municipalities, and to sanitation services within these municipalities.

The impact of the local revenue base and poverty levels on financial sustainability

The modelling exercise has allowed for an assessment of the financial viability of the FBSan strategy in a variety of municipal contexts. It has clearly shown that in the presence of high poverty levels and a limited revenue base, it would not be possible to cover the costs of service provision without imposing punitively high service charges on high income households in these areas. Municipalities were unlikely to be willing to levy such high tariffs, especially on higher income households and businesses because they could possibly relocate elsewhere, further limiting the local revenue base.

The situation in metropolitan areas and wealthier LMs, where FBSan appeared to be viable, was very sensitive to issues such as the real rate of growth in ES funds, local economic growth and cross-subsidy that could be levied.

In general, it appeared that the funds currently made available to fund FBSan would be adequate in metropolitan areas, but were insufficient to cover the operational costs required in other municipal contexts.

The possible impact on local economic development

If municipalities tried to implement the policy in the context of huge sanitation backlogs, high poverty levels and a limited revenue base, they would have to increase tariffs for higher income households and businesses to a degree that could harm local economic development.

This large discrepancy between the sanitation bills paid by higher income households, and lower income households was likely to be very unpopular. In the poorer municipalities, with a very limited revenue base, municipalities were going to be very reluctant to levy these high bills on businesses, for fear of chasing them to other areas. Local economic development issues would dissuade these municipalities from using very high bills.

Sustained economic growth is essential for the increase in Equitable Share allocations

The continued real growth in ES funds, especially at the rate that we have seen over the past few years, might not be possible in future. The sustainability of the current FBSan strategy relied on ES revenue that could grow at a sufficient pace to match the growing service base, and the related increase in operational costs. This assumed that the South African economy would continue to grow, that national tax revenues would continue to increase in real terms (above the rate of inflation), and that the government could allocate more revenue to municipalities through the ES. However, if the current economic downturn continued (and predictions are that it might take a few years for economy to recover), it would not be possible for national government to continue to increase the ES allocations sufficiently to meet the increasing operational costs. This would have profound

consequences for the provision of FBSan services in municipalities with high levels of poverty that are heavily dependent on ES funds.

Perverse economic incentives for the poor

Some case-study municipalities were providing a 100% rebate on the monthly sanitation bill for the registered indigent households. This practice could lead to a perverse incentive for the poor households because they do not have an incentive to use water services efficiently. This could be avoided by imposing a minimum fee to be paid by the poor households who exceeded the FBSan limit per month. Foster et.al (2000) reported that pro-poor subsidies in Panama made provision for the poor to pay a small percentage of the water bill to encourage them to use the subsidized service responsibly.

The importance of cost recovery and credit control measures

Much of the modelling exercises assumed that consumers would pay the bills presented to them. However, it must be noted that municipalities faced an ongoing battle in improving cost-recovery levels. It could also be argued that there was something to be said for instilling a culture of payment for services, and requiring even token payment for services.

All municipalities were faced with the challenge of ensuring that those who should pay did pay, so that scarce subsidy funds could be targeted to the poorest households where they were needed most.

7.5.2 Recommendations

- Most of the basic sanitation subsidy funds should be directed to poor WSAs with low revenue bases. Equitable share grant allocations should not only be based on the number of the poor but must consider the costs of providing basic sanitation services under different local contexts.
- Only the poorest households and other vulnerable groups should be primary beneficiaries of FBSan services.
- Indigent households that exceed the FBSan limit should be charged a minimum monthly fee linked to their use of the sanitation service so that they could have an incentive to use the service efficiently.
- Increase the budget allocation to free basic sanitation subsidy for poor rural municipalities, in recognition of their low revenue base and high poverty levels.

7.6 Technical considerations

7.6.1 Key conclusions

- Most case-study municipalities have not planned adequately for O&M of dry on-site sanitation services (particularly in the case of VIP toilets) and this could pose a threat to the long-term sustainability of basic sanitation services.
- There was a lack of consideration for the availability of local technical and financial capacity to operate and maintain sanitation systems.

7.6.2 Recommendations

- Municipalities should be encouraged to take their local context (environmental and financial aspects) into account when selecting sanitation technology options; they must consult the beneficiary households. The policy should be flexible enough to allow for a variety of options to be considered.

- Technology choices should be based on local conditions and households should be consulted; there should be upfront understanding of the operational responsibility to be borne by households.
- Where VIP toilets are the preferred option, the use of double VIP toilets should be promoted in rural areas to ensure long-term sustainability. However, in dense urban settlements the VIP technology offers limited advantage as a long-term sanitation solution.

7.7 Recommendations for further research

- Comprehensive guidelines should be developed to assist municipalities to set up institutional and funding arrangements for the desludging of VIP toilets and safe disposal and treatment of human excreta.
- Research must be conducted to investigate the sanitation needs of people with disabilities, the elderly and other severely marginalized people and strategies for accelerating delivery of subsidized sanitation services to these vulnerable groups must be developed.
- Improved data is required on operating assumptions and conditions for dry on-site sanitation options in different contexts, to enable municipalities to plan better for ongoing O&M.
- Studies should be conducted to investigate appropriate indicators for identifying the poorest households and best approaches for targeting free basic sanitation services to these households should be developed. These studies should investigate alternative methods of targeting services to the poor such as geographic location or property value based targeting. The goal should be to ensure that the maximum number of target households are actually benefiting from the selected targeting methods for pro-poor subsidy.

8. KEY MESSAGES

The overall conclusion from the study is that the provision of a free basic sanitation service for all is not financially viable for all categories of municipalities. However, FBSan service for poor households is possible in metros because of the strong revenue base and the possibility of cross-subsidization of poor households by the wealthy households and businesses. District municipalities that serve large poor rural populations cannot afford to provide FBSan services because they do not generate sufficient revenue from the user charges, combined with very limited ability to collect local revenues to meet their other service obligations. These municipalities would require a substantial increase in the Equitable Share allocation to be able to provide FBSan services to the poor households. Failure to provide this additional subsidy is likely to result in continued under-investment in required operations and maintenance of sanitation infrastructure.

While subsidies are a very useful tool for promoting access to basic services for poor and vulnerable households, they are not sufficient in themselves to guarantee a sustained improvement in sanitation.

The following key messages have emanated from the study:

- FBSan services were not benefiting the poorest households without access to waterborne sanitation systems because municipalities were providing FBSan services to households already connected to the sewer networks.
- The term “free basic sanitation services” should be changed to “pro-poor sanitation subsidy” to emphasize the focus on the poorest households and the cost associated with the provision of FBSan services.
- The current levels of Equitable Share are insufficient to allow municipalities with high sanitation backlogs, high poverty levels and a limited revenue base to provide FBSan services to the poorest households on a sustainable basis, particularly in the long-term.
- Sustained economic growth is required to support the continued increase in the equitable share allocation to fund free basic sanitation services for the poor.
- The provision of FBSan is constrained by the fact that municipalities are limited in their ability to levy high tariffs on high income households and businesses to generate cross-subsidy funds. This is particularly true of municipalities with small urban populations where economic activity is already limited, and high tariffs could harm local economic development.
- Failure to adequately prioritise and allocate funds to O&M will lead to the eventual failure of the sanitation systems.
- Ongoing H&HE should be integrated into the provision of the FBSan services instead of being limited to the construction phase to ensure sustained improvement in hygienic practice and health of beneficiary communities.

REFERENCES

Afrikon, (2007) Draft Costing study prepared for the City of Tshwane

Amegashie, A. (2006) *The Economics of Subsidies*. Crossroads, Volume 6. No. 2.

Australian Commonwealth Grants Commission, (2003) *Concessions And Other Payments — Water, Sanitation And Protection Of The Environment,* Prepared For The Commission's 2003 Conferences On Draft Assessments, Draft Assessment Paper Cgc 2003/44, August 2003

Bhagwan JN, Still D, Buckley C, Foxon K, (2008) When last did we look down the pits?, WISA Paper

Bibby, S et al, Federal Democratic Republic of Ethiopia, Ministries of Health, Water Resources, Education and urban development & European Union Water Initiative, (2006) *Needs Assessment to Achieve Universal Access to Improved Hygiene and Sanitation by 2012.* 6th Draft, November 2006.

Blackett, I.C. (1994) *Low-cost urban sanitation in Lesotho*. UNDP – World Bank Water and Sanitation Programme.

Brook P and Smith W (2001) Improving access to infrastructure services by the poor: Institutional and policy response. Background Paper for the Private Sector Development Strategy. World Bank, Washington, DC

Cairncross S. (2003) *Sanitation in the developing world: status and future solutions.* International Journal of Environmental Health Research 13, S95-S105

Census (2001) Community Profiles

Danida International Development Agency, (2006) Sanitation In Ghana: A Paper on the Current State of Sanitation, The Constraints and On-Going Efforts to Improve the Situation, Water Sector Seminar – Accra, Ghana.

Danida International Development Agency, (2006) *Sanitation in Bangladesh,* Danida Water Sector Seminar, Ghana, February 2006.

Department of Provincial and Local Government, (2005) Study to determine progress with and Challenges faced by municipalities in the provision of free basic services & supporting those municipalities struggling with implementation: Final study report, August 2005

Department of Provincial and Local Government (2000) Municipal Systems Act No.32. Pretoria, South Africa.

Department of Provincial and Local Government (2004) Policy framework for the introduction of the municipal Infrastructure Grant – Concise version amended by the Municipal Infrastructure Task team on 5 February 2004

Department of Water Affairs & Forestry (2001) White Paper on Basic Household Sanitation

Department of Water Affairs & Forestry (2001) Free Basic Water: Implementation Strategy Document, Pretoria, South Africa

DWAF, DPLG and SALGA (2003) Strategic Framework for Water Services

Department of Water Affairs & Forestry (2004) Draft Free Basic Sanitation Strategy. Pretoria, South Africa (not approved by cabinet).

Department of Water Affairs & Forestry (2005) Nationwide Sustainability Audit of Sanitation Facilities Implemented by Sector Departments from 1994-2003. Pretoria, South Africa.

Department of Water Affairs & Forestry (2008) Water Services National Information Systems – Basic Sanitation Backlog Figures. Pretoria, South Africa. Available at http://www.dwaf.gov.za/dir_ws/wsnis/default.asp

DPLG, (2005) The Municipal Infrastructure Grant: Basic levels of services and unit costs: a guide for municipalities, Working Document June 2005.

DWAF, (2002) The policy on basic household sanitation made easy, prepared by the DWAF National Sanitation Task Team, February 2002.

DWAF, (2002) Sanitation Technology Options, prepared by the DWAF National Sanitation Task Team, February 2002.

DWAF, (2007) Guideline for the costing of household sanitation projects, August, 2008,

DWAF (2007) Sanitation guidelines for the preparation of technical reports, Booklet 6

DWAF, (undated) Options for dealing with full pits – Draft guideline booklet 3

DWAF, (undated) Guidelines for on-site sanitation with difficult technical circumstances, Booklet 1.

DWAF, (2008) The National Sanitation Bucket Replacement Programme: Lessons Learnt, WINSA, www.win-sa.org.za

Evans, B, *Securing Sanitation: The Compelling Case to Address the Crisis,* Report commissioned by the Government of Norway as input to the Commission on sustainable Development, Stockholm International Water Institute, www.siwi.org

Evans, B, (2007) *Financing and Cost Recovery*. Downloaded from Sanitation connection, www.sanicon.net.

Federal Democratic Republic Of Ethiopia, Ministry Of Water Resources, (2006) *Universal Access Program Implementation Strategy* – Final Draft

Foley S, Soedjarwo A and Pollard R, (2000) Of the people, by the people, for the people: Community based sewer systems in Malang, Indonesia, Field note for the WSP: East Asia and the Pacific Region

EThekwini water and sanitation programme, WINSA Lessons Series, Issue 2, www.win-sa.org.za

Foster V, Gomez-Lobo A. and Halpern J (2000) *Designing direct subsidies for water and sanitation services: lessons from Panama*. Policy research working paper. Foster V,

Gomez-Lobo A and Halpern J. (2000) *Designing Direct Subsidies for the Poor—A Water and Sanitation Case Study*, Public Policy for the Private Sector, Note 211

Gomez-Lobo A, Foster V and Lapern J. (2000) Information and modelling issues in designing water and sanitation subsidy schemes. Policy research working paper.

Government of South Africa (1996) Constitution

Gowlland-Gualtieri, A. (2007) South Africa's Water Law and Policy Framework – Implications for the right to water. (International Environmental Law Research Centre, Working Paper 2007-03). Geneva, Switzerland.

Indonesia National Development Planning Agency/BAPPENAS, Ministry Of Settlement And Regional Infrastructure, Ministry Of Health, Ministry Of Home Affairs, Ministry Of Finance, (2003) *National Policy – Development Of Community-Based Water Supply And Environmental Sanitation*, prepared under the Water Supply and Sanitation Policy Formulation and Action Planning (WASPOLA) Project with assistance from the World Bank's

Water and Sanitation Program (WSP-EAP) and support from the Australian Government's AusAID

IRC International Water and Sanitation Centre (2006) *The value of environmental sanitation – case-studies*, Occasional Paper Series 42, Mariëlle Snel and Jo Smet (editors)

Kamal Kar, (2003) Subsidy or self-respect? Participatory total community sanitation in Bangladesh. Institute of development studies.

Komives, K.; Foster, V.; Halpern, J. and Wodon, Q. (2005) Water, Electricity and the Poor: Who Benefits from Utility Subsidies? World Bank, Washington DC.

MDG Task Force on Water and Sanitation (2004) Achieving the MDGs for water and sanitation – A UN Millennium Project.

Mehta, M and Knapp, A. (2004) The challenge of financing sanitation for meeting the Millennium Development goals.

Mukherjee N, (2000) *Myth vs. Reality in Sanitation and Hygiene Promotion,* Field note, WSP for East Asia and the Pacific

National Treasury, (2008) Division of Revenue Act for 2007/08 Financial Year. SARPA, 2007. SARPA Bulletin.

Ocasio, R. (1997) Identification of financial resources and credit mechanisms for the Urban Sanitation program in Jamaica. Environmental Health Project.

Paramasivan, S. and Calaguas,B. (2001) Meeting the sanitation and water hygiene challenge: Experience in water Aid in India. Sustainable Development International.

PDG (2008) Municipal Services Financial Model

Practical Action Consulting (2006) Rural Sanitation in Southern Africa: A Focus on Institutions and Actors, UNDP Human Development Report 2006, Occasional Report 45

Republic of South Africa (2007) *Division of Revenue Bill*, Bill published in Government Gazette No. 29632 of 16 February 2007

Robinson, Andrew James, 2005, *Lessons Learned from Bangladesh, India, and Pakistan: Scaling-Up Rural Sanitation in South Asia,* Report prepared by the World Bank: Water and Sanitation Programme.

Sanitation Reference Group, (2007) *Sanitation Policy Background Paper: Water is Life, Sanitation is Dignity*, Final Draft report prepared for DFID

Satterthwaite, D and McGranahan G (2006) *Overview of the Global Sanitation Problem,* Human Development Report Office Occasional Paper, UNDP

Snyman H, (2008) Global Atlas of Excreta, Wastewater Sludge, and Biosolids Management: Moving Forward the Sustainable and Welcome Uses of a Global Resource – Chapter on South Africa, UN-Habitat.

Sowa, N. (2007) The sole of subsidies as a means to increase welfare; Paper presented at WWF Roundtable.

The Supreme Court of Appeal Judgement (2009) Case No.489/08 City of Johannesburg vs. Mazibuko, Munyai, Malekutu, Paki and the Centre on Housing Rights and Evictions.

The Constitutional Court Judgement (2009) Case CCT 39/09 City of Johannesburg vs. Mazibuko et al.

Van Norden, H, (2007) Monitoring the MDG drinking water and sanitation target Definitions, Indicators and their measurability, Presentation to the Stockholm Water Week, 16 August 2007

Water and Sanitation Program (2005) A Private-Public and Social Partnership to Change Water and Sanitation Management Models.

Water and Sanitation Program (2001) *Achieving sustained sanitation for the poor.* Policy and Strategy Lessons from participatory assessments in Cambodia, Indonesia and Vietnam.

World Bank Website: www.worldbank.org. *"Local Solutions to improve water and sanitation supply in Colombia".*

World Bank, (2006) A Guide to Water and Sanitation Sector Impact Evaluations, December 2006

World Trade Organisation (2006) *Subsidies, Trade and the WTO*. The World Trade Report.

Wright, A. (1997) Toward a Strategic Sanitation Approach: Improving the Sustainability of Urban Sanitation in Developing countries, The World Bank.

List of municipal documents reviewed

Amathole District Municipality, (2008) Draft Water Services Development Plan for 2007/08.

Breede Valley LM, IDP 2007-2011 – published early 2007

Breede Valley LM Annual report for 2005/06

Breede Valley LM Tariff Schedule for 2005/06

Breede Valley Municipality Department of Finance (2008) Policies 2008-2008

City of Cape Town (2007) Water Service Development Plan for 2007/08.

City of Cape Town (2007) Long Term Water Conservation and Water Demand Management Strategy.

City of Cape Town (2006) Integrated Water Leaks Repair Project Booklet.

City of Tshwane: Water and Sanitation Division – Implementation of an equitable sanitation tariff policy for the City of Tshwane Metropolitan Municipality; Approved by Council on 6 December 2001

City of Tshwane: Water and Sanitation Division – Approval of the strategic plan for the eradication of the water and sanitation backlog in Tshwane; Approved by the Council on 29 September 2005

City of Tshwane: Water and Sanitation Division – Policy for the provision of free maintenance assistance for basic on-site sanitation systems to indigents and the progressive extension of on-site maintenance services to all; Approved by Council on 23 November 2005

City of Tshwane Metro (2007) Notice of the withdrawal and determination of charges payable to the City of Tshwane Metropolitan Municipality for making use of sanitation services.

City of Tshwane Office of the Executive Mayor and City Manager 2007/2008 Mid-Year Report for the City of Tshwane – Approved by the Council on 24 January 2008

Maluti a Phofung, Excel Spreadsheet of MAP Water Maintenance Budget Request

Maluti a Phofung, Excel Spreadsheet of the 2006/07 Budget MTREF

Municipal Demarcation Board Annual Capacity Assessment for 2007/08

Maluti a Phofung Municipality (2007) Revised Tariff Policy

Maluti a Phofung Municipality (2007) Revised Indigent Policy

Mbombela IDP 2006-2011 Review 2007/2008;

Mbombela Local Municipality (2006) Tariff Policy;

Mbombela LM Water and sanitation tariff schedule 2008;

Mbombela LM Credit Control and Debt Collection By-Laws

Ugu DM IDP 2007/08 -2011/12Ugu DM Indigent Support Policy, Revised in 2007

Ugu DM Water tariffs and sanitation charges 2007/2008

Vhembe District Municipality IDP 2006-2011

Vhembe DM Technical Report for Rural Sanitation, Phase 1: 2007/08 with proposed 2008/09 -2010/2011 projections.

APPENDICES

APPENDIX A

Guidelines for sanitation subsidies for the severely marginalized individuals and groups

PREPARED FOR THE WATER RESEARCH COMMISSION

BY

NOZIBELE MJOLI, HLATHI DEVELOPMENT SERVICES

October 2009

TABLE OF CONTENTS

1. INTRODUCTION

1.1Background

According to the Human Development Report of 2006, lack of access to safe, private and convenient toilet facility presents poor people with a daily source of indignity and threatens their well-being. Jones *et al.* (2003) described poverty as cause and consequence of disability because poor people live in dangerous and unhealthy environments that increase their risk of becoming disabled. Water and Sanitation Program (2007) refers to HIV/AIDS as a developmental challenge that affects all sectors of society. There is a general belief that improvement in access to reliable, clean water and adequate sanitation services could significantly improve the quality of life for those living with HIV/AIDS.

The South African democratic government has put in place policies that prioritize the delivery of basic services to the poor but unfortunately the special needs of the disabled, elderly and immuno-compromised people have not been adequately taken into consideration in most of these policies. According to Matsebe (2006), the number of people with disabilities in South Africa was estimated at 2 million people. A large number of these people were black and they lived in conditions of extreme poverty with no access to basic water and sanitation services. In 2005 the number of people infected with HIV/AIDS in South Africa was estimated at 5.54 million and 55% of these people were women (Dept of Health, 2007).

According to Coulson *et al.* (undated) even in households provided with toilets, the disabled people were unable to use the sanitation facilities because the toilets were too small for people on wheelchairs, there were no ramps for wheelchairs and no grab rails for support. The design and layout of toilets in RDP houses made it impossible for people with mobility limitations to use them. The situation was worse for those severely marginalized people living in dense urban informal settlements with no access to household toilets because it was difficult for them to use communal toilets due to poor access and security concerns.

Who are the severely marginalized groups?

The South African Human Rights Commission report (2002) categorized the vulnerable groups as follows:

- Women, children and frail elderly people – they experience problems in using communal block of toilets located far from their dwellings because of security concerns especially at night.
- Poor disabled people living in urban and rural areas – This category includes people who cannot walk and depend on mobility device such as wheelchairs, people who need support such as crutches, handrails or support from another person and people who can walk but are weak or lack coordination. A standard household toilet would not be accessible to the disabled people unless it was designed to meet the special needs of people with disabilities.
- People who have been displaced by violence and war.
- People with severe intellectual or mental disabilities.

- People living with HIV/AIDS – late stages of the disease are characterized by chronic diarrhoea; this puts a heavy burden on weak patients who have to make frequent trips to toilets located far away from the house. They need access to indoor toilets or toilets very close to the house.

The SAHRC (2002) report argued that society contributed to making life difficult for people with disabilities by failing to take their rights and needs as individuals or groups into account when providing sanitation facilities.

1.2 Purpose of the document

The purpose of this guideline document is to highlight challenges faced by severely marginalized individuals and groups in accessing sanitation services and to make recommendations for providing subsidized basic sanitation services to the severely marginalized individual and groups.

1.3 Scope

The document focuses on the special needs of physical disabled people and HIV/AIDS affected individuals and households. It does not include challenges faced by other severely marginalized groups because no literature could be found on sanitation provision for the other groups such as women, children and frail elderly people.

1.4 Methodology

An analysis of policy and legislative framework was conducted to assess the current policy provisions for the delivery of subsidized basic sanitation services to severely marginalized groups and individuals. A desktop review of international and national literature on the socio-economic impacts of different sanitation technology options on the severely marginalized individuals and households was conducted. An in-depth analysis of documented case studies was undertaken to obtain a better understanding of challenges faced by the severely marginalized groups and to identify approaches followed to improve their access to basic sanitation services. A stakeholder workshop was used to obtain inputs on the sanitation policy gaps. Recommendations were made based on the outcome of the desktop review of policy and practice and inputs of sanitation sector stakeholders.

2. POLICY AND LEGISLATIVE FRAMEWORK

A review of the relevant national policy and legislative framework was conducted to assess the policy provisions for sanitation subsidies for the special needs of the severely marginalized groups and individuals.

Constitution of SA (1996)

Section 9(3) of the Constitution states that, *"the state may not unfairly discriminate directly or indirectly against anyone on one or more grounds including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability……..".*

Section 10 states that*, "everyone has an inherent dignity and the right to have their dignity respected and protected."*

Section 24(a) *states that, "everyone has a right to an environment that is not harmful to their health or well-being."*

Section 27 (1c) states that, *"everyone has the right to have access to social security, including, if they were unable to support themselves and their dependents, appropriate social assistance".*

The above four clauses demonstrate that the Constitution of South Africa has made adequate provision for the rights of the severely marginalized groups with regards to access to basic sanitation services.

White Paper on an Integrated National Disability Strategy (1997)

According to this strategy the yardsticks for measuring a society's respect for human rights is the status it accords to the members of the society who are most vulnerable, disabled people, the senior citizens and its children.

The vision of the strategy is the integration of disability issues in all government development strategies, planning and programmes. The strategy includes the elderly people with disabilities caused by the aging process; however, it does not include people infected with HIV/AIDS.

The Housing Act 1997

The Housing policy and legislative framework makes provision for a subsidy programme for meeting the needs of disabled people. The Department of Housing provides an additional subsidy for people with visual and other disabilities. This subsidy is for making their homes more accessible and comfortable in accordance with their physical needs. The additions could entail concrete aprons, ramps, special grab rails in bathrooms, kick plates on doors and special access arrangements to toilets.

Municipal Systems Act 2000

This Act makes provision for the needs of marginalized groups in the following sections:

Section 73 (2a) states that, *"municipal services must be equitable and accessible."* Section 74*(*2) (c) *states that, "the pro-poor tariff policy should reflect the following:*

i) special tariffs or life line tariffs for low levels of use or consumption of services or for basic levels of service;
ii) any other direct or indirect method of tariffs for poor households."

Promotion of Equality and Prevention of Unfair Discrimination Act No.4 of 2000

Section 9 states that, "no person may unfairly discriminate against any person on the grounds of disability, including:

(a) Denying or removing from any person who has a disability, any supporting or enabling facility necessary for their functioning in society;

(b) Contravening the code of practice or regulations of SABS that govern environmental accessibility;

c) Failing to eliminate obstacles that unfairly or restrict persons with disabilities from enjoying equal opportunities or failing to take steps to reasonably accommodate the needs of such persons."

White Paper on Basic Household Sanitation (2001)

This White Paper on Basic Household Sanitation does not make any specific reference to the provision of basic sanitation services to people with disabilities and those affected with HIV/AIDS; it only refers to the poor. DWAF developed 'Draft Guidelines for sanitation facilities for the disabled' in 2003; these guidelines make provision for additional subsidy arrangements for modifying the toilets to meet the needs of the disabled people. No information could be found on the extent to which these guidelines were implemented by the municipalities and other sanitation implementation agencies.

Strategic framework for water services (2003)

The Strategic Framework for Water Services (SFWS) makes provision for the increase in the free basic water amount from 25L to 50L per capita per day for poor households. The SFWS acknowledges the need for subsidy mechanisms for households living in remote rural areas, vulnerable groups such as households headed by women or children or affected by HIV/AIDS.

This policy document does not make any special reference to the needs of the physically disabled people. It recognizes the importance of health and hygiene education for vulnerable groups and individuals affected by HIV/AIDS.

Policy framework for the introduction of the Municipal Infrastructure Grant (DPLG, 2003)

The MIG policy focuses on funding of the infrastructure required for a basic level of service for the poor, but it does not make any explicit reference to the special needs of physically disabled people and other severely marginalized groups.

HIV/AIDS and STI Strategic Plan for South Africa 2007-2011 (2007)

This strategic plan focuses on the prevention and treatment of HIV/AIDS; it does not make any reference to the role of improved access to clean water, adequate sanitation and hygiene education as important interventions for improving the quality of life for those that are infected with HIV/AIDS and their households or care-givers.

Mainstreaming of HIV/AIDS in water services sector

In 2005 the Water Services Sector Leadership Group (WSSLG) took a decision to mainstream HIV/AIDS within the water services based on the recognition of the importance of access to safe water and adequate sanitation services in protecting HIV/AIDS infected individuals from opportunistic pathogenic infections.

The water services sector has adopted the following three-pronged approach for dealing with HIV/AIDS:

Internal mainstreaming – This focuses on reducing the prevalence of HIV/AIDS amongst sector employees through appropriate interventions.

External mainstreaming – Improving access to water and sanitation services to households affected by HIV/AIDS so that they could cope better with the impacts of the disease.

Policy review and update – Creation of an enabling environment for mainstreaming of HIV/AIDS within the water services sector.

An HIV/AIDS core group was established and mandated to develop a strategy for mainstreaming of HIV/AIDS in the water services sector.

Framework for an Integrated Local Government Response to HIV and AIDS (2007)

The framework outlines the role of municipalities in HIV and AIDS prevention and mitigation within the context of the developmental agenda for local government as outlined in the Constitution of South Africa (1996), White Paper on Local Government (1998) and the Municipal Systems Act (2000). The framework advocates for the mainstreaming of HIV/AIDS based on the understanding that it is a problem of underdevelopment. Improvement in access to clean water and sanitation has been identified as important intervention for improving the quality of life for the infected people. The meaningful participation of people living with HIV/AIDS in the Integrated Development Plan review is stressed in order to ensure that municipalities are informed by the needs of affected communities. The framework recognizes that the negative impacts of HIV/AIDS can be mitigated if vulnerability due to socio-economic and behavioural factors is reduced.

Indigent support policies

A review of indigent support policies of 30 randomly selected municipalities showed that the majority of these policies did not make any special provisions for physically disabled people and HIV/AIDS affected households. The indigent policy of Msunduzi Local Municipality included child-headed households as beneficiaries of free basic services provided they met the monthly household income limit required to qualify for indigent status. The indigent policy of Delmas Local Municipality made provision free basic

services for the following groups of households: pensioners, disabled persons, single parents, orphans and unemployed people.

Summary

The following are key issues that emerged from the review of the policy and legislative framework for provision of basic sanitation services to vulnerable groups and severely marginalized individuals

Policy provision for people with disabilities

The Constitution and the Housing Act explicitly make provision for access to sanitation services for physically disabled people. Other sanitation policies make provision for subsidies for the poor; they do not make any special reference to the sanitation needs of the severely marginalized individuals and groups. The Municipal Systems Act and the Policy Framework for the Municipal Infrastructure Grant only refer to the poor.

Policy provisions for HIV/AIDS affected individuals and households

The White Paper on Basic Household Sanitation does not make any reference to the specific needs of HIV/AIDS affected individuals and households. The Strategic Framework for water services explicitly refers to HIV/AIDS affected people, women and children as beneficiaries of the free basic sanitation services. The Framework for an Integrated Local Government Response to HIV and AIDS advocates for the mainstreaming of HIV/AIDS in all municipal services. A water sector strategy for provision of free basic water and sanitation services to affected households was currently being developed by the HIV/AIDS core group (a sub-committee of the WSSLG).

Women and children

Although most policies recognize women and children as vulnerable groups that should be the primary beneficiaries of subsidized sanitation services; there is no specific statements on how the special sanitation needs of these groups should be subsidized.

3. INTERNATIONAL AND NATIONAL EXPERIENCE

3.1 Literature review

A literature review of international and national experience was conducted to identify best practice in the provision of subsidized basic sanitation services for people with physical disabilities and HIV/AIDS infected people.

3.1.1 Impacts of poor sanitation on the lives of disabled people

WaterAid (2008) showed that poverty and disability were linked and the disabled people were the worst affected by poverty. The study identified the following barriers that limit use of sanitation services by the disabled people:

Social barriers – stigma associated with being disabled which may lead to disabled people being denied access to public sanitation facilities.

Technical barriers – poor access to sanitation facilities due to terrain and lack of hand rails for support. Jones *et al.* (2002) showed that disabled people were not able to use squat toilets without grab rails for support and toilets with doors opening towards the inside created a barrier for people on wheelchairs.

Financial barriers – Poor families lacked finance to design the toilets that were suitable for the disabled. Without sanitation subsidies from government, these households could not afford the cost of modifying the toilets.

Institutional barriers – Jones *et al.* (2002) identified institutional barriers which resulted in discriminatory social polices that did not cater for the disabled people. There was also a lack of implementation of existing policies for the provision of services to the physically disabled people.

WaterAid (2008) identified the following consequences of failing to invest in sanitation infrastructure suitable for use by the disabled individuals:

Health risks – Lack of access to adequate sanitation increased susceptibility of the disabled people to sanitation-related disease because of inability to maintain appropriate levels of hygiene practice such as hand washing. Disabled people who continued to defecate in the open due to the inability to use available toilets put the whole community at risk.

Lost opportunities and deteriorating self-esteem – Disabled children were excluded from attending school because of lack of sanitation facilities for the disabled. Most of the disabled people were unemployed because of lack of facilities for disabled people in the workplace.

Additional burden on women – The lack of sanitation facilities for disabled people put a burden on women who were responsible for caring for them and this increased their workload and also prevented them from securing formal employment.

WaterAid (2008) developed the following guiding principles for planning and design of user-friendly sanitation facilities for people with disabilities:

Accessibility – Sanitation facilities must be accessible to all people including those with disabilities, elderly, pregnant women and children.

Access – Sanitation facilities must be designed to enable people with disabilities to use the facilities without assistance. Barriers in the natural environment should be removed.

Usability – Sanitation facilities must be built to enable everyone to use them including the disabled. The World Health Organization (WHO) recommends that a toilet and a bathroom should be located in one room to ensure convenience for people with disabilities.

Safety – Sanitation facilities should be safe to use by all people including the disabled. Handles or rails for balance should be provided for the disabled users and doors should be wide enough to allow those on wheelchairs to be able to use them without assistance.

According to WaterAid (2008) it was very important to involve the disabled people in the planning of sanitation infrastructure projects in order to ensure that the design of the facilities met their specific needs. However, when it was not practical to consult disabled people, organizations representing them should be consulted.

3.1.2 Sanitation services for people living with HIV/AIDS

HIV/AIDS link with sanitation and hygiene

According to WSP (2007) poor access to good quality water and safe sanitation contribute to the susceptibility of HIV/AIDS patients to opportunistic pathogenic infections. The report argued that households affected by HIV/AIDS required more than 20 litres per capita per day because of the need to bathe patients and wash soiled linen and clothing. Therefore, there was a need to provide these households with water supply on-site.

The WSP study (2007) recommended the following actions for improving access to sanitation services for people affected with HIV/AIDS:

- Improvement in the communication of behavioural change for people living with HIV and AIDS, their caregivers and other family members;
- Development of comprehensive behavioural change communication material on water, sanitation and hygiene for people with HIV/AIDS;
- Improvement of access to adequate water and sanitation for people living with HIV/AIDS.

Wegelin-Schuringa *et al.* (2003) highlighted the following links between water, sanitation and hygiene education and HIV/AIDS:

Improvement of the quality of life for the HIV\AIDS infected people – Lack of access to safe water and adequate sanitation increased the incidence of water-related diseases such as diarrhoea and certain types of skin infections in HIV/AIDS infected individuals. Therefore, access to adequate clean water and safe sanitation services would contribute to the improvement in the quality of life for these individuals.

Home based care – Access to adequate and safe water for bathing patients, washing soiled linen and clothing and keeping home environment clean was very important. Toilets should be easily accessible to reduce the burden and maintain human dignity for the infected individuals and their care-givers. Hygiene education was very important for care-givers so that they could practise appropriate hygienic behaviour when handling HIV/AIDS infected patients.

How can municipalities improve access to sanitation services for HIV/AIDS affected households?

Potter and Clacherty (2007) proposed the following steps that could be taken by Water Services Authorities to improve the quality of life for HIV/AIDS affected households:

- Improve access to water and sanitation services for HIV/AIDS affected households by providing them with more than 6 KL of water per month on-site to make it easy for them to care for sick people.
- Include special provisions for HIV/AIDS in water services policies and municipal by-laws.
- Set tariffs to subsidise water services for the HIV/AIDS affected households to a higher levels of sanitation service to meet the needs of these households.
- Regulate water services providers to ensure that the HIV/AIDS affected households have access to sanitation services that meet their special needs.
- Promote use of water for food gardens for the affected family in order to improve their nutritional status.
- Integrate health and hygiene education into the provision of the basic sanitation services and HIV/AIDS education programmes.

Water and sanitation needs of home-based caregivers for HIV/AIDS patients

A study funded by WHO and USAID (2007) assessed the linkages between home-based care and water, sanitation and hygiene in six countries and made the following conclusions:

Policy issues – The assessment found that the national policies for HIV/AIDS in the six countries did not reflect the linkage between home-based care and water and sanitation service provision.

Access to sanitation facilities – People living with HIV/AIDS and the poor were not able to construct household toilets without the subsidy and where communal toilets were provided, HIV/AIDS affected people were prevented by the community from using these facilities.

Hygiene education – The study found that there was poor hand washing practice in three countries and hygiene education was not integrated into the HIV/AIDS programme in some countries.

Home-based care provision – There was inadequate training of home-based care volunteers, especially in the hygiene education component.

The WHO study (2007) made the following recommendations:

- National policies must make provision for linking home-based care and water, sanitation and hygiene for HIV/AIDS affected communities.
- Involvement of HIV/AIDS affected communities and care-givers in the planning of water, sanitation and hygiene programmes in order to ensure that these programmes meet the needs of these vulnerable groups.
- Ensure that communities have accurate information on HIV/AIDS transmission to reduce the fear of sharing water and sanitation facilities with HIV/AIDS infected people.
- Improve the training of home-based care givers in hygiene education.
- Provide subsidy for HIV/AIDS affected households so that they could access large quantities of water required to care for the sick people.

- Toilets should be indoors or close to the house so that weak and frail people could be able to use them.
- Where possible toilets should be large enough to allow care-givers to assist the weak people or grab bars should be provided to support weak HIV/AIDS patients to hold on while using the toilets.

Hillbrunner (2007) suggested that the following aspects should be taken into consideration when providing basic sanitation services for the home-based care HIV/AIDS patients:

- Hygiene education should include information specific for hygienic practice necessary to protect infected people from exposure to opportunistic pathogens.
- Subsidies for basic water and sanitation services should accommodate the additional needs of HIV/AIDS affected households.

Strategies for the provision of sanitation services to HIV/AIDS affected households

Kamminga and Wegelin-Schuringa (2005) recommended the following strategies for promoting access to water and sanitation as a right within the context of HIV/AIDS:

- Provide education for people living with HIV/AIDS and their families on how they could reduce their exposure to water and sanitation-related diseases.
- Acceleration of water and sanitation service coverage to households and communities worst affected by the HIV/AIDS epidemic to protect them from waterborne diseases.
- Empower affected households to participate in decision-making on matters that affect them and enable them to make water service providers accountable to them.
- Provide subsidies for affected households so that they could improve their access to water and sanitation service to meet the special needs of HIV/AIDS patients.

A national HIV/AIDS mainstreaming workshop held at the CSIR, Pretoria in December 2006 made the following recommendations:

- Universal access to basic services – Vulnerable communities should be prioritized in the delivery of basic water and sanitation services.
- Pro-poor policies – Indigent registers should be used to improve targeting of free basic services to the poor.
- Health and hygiene education should be prioritised and be integrated into HIV/AIDS education programmes.
- Integrated development planning at municipal level – HIV/AIDS should be integrated into the core business of the municipality; it should not be a stand alone programme.
- Improved levels of services for the poor and vulnerable households – It was recommended that a minimum of 50 litres of water per capita per day should be provided free of charge to HIV/AIDS affected households.

3.2 Case studies

3.2.1 Case studies of basic sanitation services for people with disabilities

Access to sanitation by the physically disabled people in Uganda

WEDC used Uganda as one of the case studies for evaluating access to sanitation for people with disabilities (Jones & Reed, 2003). The evaluation found that there was limited or no attention paid to the sanitation needs of people with disabilities. It also showed that the demand driven approach contributed to the marginalization of the people with disabilities because they lacked power to demand appropriate sanitation facilities. They also lacked information on suitable options for improving their access to sanitation facilities. The study found that there was a lack of data on the scale of the problems faced by people with disabilities in accessing sanitation facilities. This was caused by the lack of attention to the sanitation needs of people with disabilities. There were good examples of good sanitation facilities for children with disabilities in primary schools of Uganda because sanitation was supported as part of the national policy for universal access to primary education and the right of access to education for disabled children. The study concluded that there was a lack of adequate research activity on the issues affecting delivery of sanitation to people with disabilities.

Access to sanitation by physically disabled people in Bangladesh

Jones & Reed (2003) selected Bangladesh as one of the case studies for a project on "*Water supply and sanitation access and use by physically disabled people*". Bangladesh was selected because it had several water and sanitation implementing agencies which catered for the needs of the disabled people. The study made the following key findings on the mainstreaming of the needs of the disabled people in the provision of water and sanitation services:

Policy and planning

- All NGOs working in the water and sanitation sector included the specific needs of people with disabilities in their project proposals;
- WaterAid Bangladesh and its partners had recognized the need to explicitly include disabled people as target beneficiaries in order to ensure that they benefited from water, sanitation and hygiene projects in their communities.

Data collection

- UNICEF Bangladesh and the NGO Forum included questions on the number of disabled people in their baseline surveys.
- Information from the surveys was used to include the needs of the physically disabled people in water and sanitation projects.

Information on technology options

- UNICEF Bangladesh produced a booklet on "Low-cost latrine options" which included a section on low cost ideas for improving access to toilets for people with disability.

Other issues

- It was found that there was a need to extend the definition of people with disabilities to include people with impairments caused by old age and ill-health.
- People with disabilities were not making demands for improved access to sanitation facilities because they were not aware that the possibility to design toilets that met their needs existed. This was caused by social exclusion of people

with disabilities because they could not attend community meeting and they were also not consulted by the decision-makers.
- There was also no capacity building for staff of water and sanitation implementing organizations so that they could be more sensitive to needs of disabled people.
- It was found that disabled people were socially isolated and hidden because some communities believed that disability was a punishment or a curse.

Access to sanitation facilities by the disabled people in Pretoria townships

Coulson *et al.* (2003) evaluated access to sanitation facilities for physically disabled people in the Stanza Bopape, Saulsville and Hammanskraal townships in Pretoria. These areas had formal RDP houses and informal settlements. Households in informal settlements used unimproved pit latrines and the majority of households living in RDP houses had waterborne sanitation facilities outside the house and a limited number had waterborne sanitation facilities inside the houses. People with disabilities living in households with these toilets could not use them because the superstructure was too small and the doorway was not wide enough to allow them to enter with a wheelchair. They were forced to use buckets and some were practising open defecation in holes dug in their plots.

The study found that the disabled people did not think that communal toilets were an appropriate solution for dense urban informal settlements because these facilities were used for criminal activities such as rape and child abuse.

The study found that none of the disabled people living in RDP houses were aware of the additional housing subsidy available from the Department of Housing for adapting toilets to improve access for people with physical disabilities. This highlighted the importance of ensuring effective dissemination of government policies to poor communities. There was no subsidy for the disabled people living in dense urban informal settlements. The conclusion drawn from the study was that people with disabilities continued to be marginalized and their practice of open defecation posed a health threat for them and their communities.

3.2.2 Case studies of the link between HIV/AIDS and access to sanitation

Ethiopia case study of water services and HIV AIDS

Water Aid (2006) investigated the water and sanitation needs of people living with HIV/AIDS in one of sub-cities of Addis Ababa; the focus was on the constraints faced by these people and recommendations for addressing the challenges that they faced. In 2003 the estimated number of people living with HIV/AIDS in Ethiopia was 1.5 million and urban prevalence was estimated at 12.6%.

The following findings emanated from the study:

- The water and sanitation needs for the HIV/AIDS affected households had increased because of a need for more clean water to meet the needs of HIV/AIDS patients
- Diarrhoea which was common during the symptomatic phase increased the need for access to a toilet close to the house.
- HIV/AIDS infected people experienced discrimination because the other users of shared toilets and water points were not comfortable sharing facilities with them

for fear of contracting the virus. Those who were already too sick to walk to communal toilets were forced to use potties which were emptied by the family members in shared toilets.
- Poor maintenance of communal toilets also increased their susceptibility to infections.
- The majority of the respondents felt that the targeting of the affected households with improved water and sanitation services would contribute to further discrimination of the HIV/AIDS infected people; therefore, they recommended that improved sanitation facilities must be provided to the whole community with a high incidence of HIV/AIDS infection.

The WaterAid report (2008) made the following recommendations for ensuring equal access to water and sanitation for HIV/AIDS affected households:

- Water and sanitation needs of the affected people should be met through improved water and sanitation facilities for the whole community and this approach would help benefit those people who did not want to reveal their HIV status.
- The needs of HIV/AIDS affected households should be taken into consideration in the planning, implementation, monitoring and evaluation of water and sanitation programmes.
- HIV/AIDS messages should be integrated into hygiene promotion and education programmes.
- National water and sanitation policies must include the needs of the vulnerable groups and responsibility for provision of services to these groups should be clearly defined.
- Funding should be allocated for the acceleration of water and sanitation services to the HIV/AIDS affected communities.

Limpopo case study of HIV/AIDS and water services

Kgalushi *et al.* (2004) conducted case studies in Bolobedu in Limpopo Province to highlight the importance of access to water and sanitation services and hygiene education to the improvement of the quality of life for people living with HIV/AIDS. Bolobedu is a large rural area with about a million people and it is led by a traditional chief. This area was selected as a case study because it had established local initiatives for dealing with HIV/AIDS challenge; Local government, NGOs, CBOs and the private sector had joined hands in tackling HIV/AIDS and its impacts. Most households were very poor and they also lacked access to basic water and sanitation services.

The case study area had the following initiatives for dealing with the HIV/AIDS pandemic:

- Ba-Phalaborwa AIDS Awareness Project was formed by the Ba-Phalaborwa Local Municipality (LM) with funding from three local mining companies. The project supported home-based care-givers and also provided AIDS counselling.
- The municipality had an HIV/AIDS coordination council with representatives from the municipality, NGOs, CBOs and the mines; the council was funded by the mines and Nelson Mandela Children's Fund.
- Greater Tzaneen LM also had a similar coordination council. All these structures focused on education, prevention, treatment for the infected people and providing them with food parcels. None of the initiatives included the important role of improved access to clean water and safe sanitation services to the quality of life for people and households affected by HIV/AIDS.

Kgalushi *et al.* (2004) made the following conclusions from the case study analysis:

- Open discussion of HIV/AIDS was a taboo and many people were not comfortable to discuss this subject. This would make it difficult to target free basic sanitation services to households affected by HIV/AIDS.
- Most policy interventions on the prevention of HIV/AIDS focused on good nutrition and exercise and failed to include improved sanitation and good hygienic practice.
- Municipalities in the case study area had an HIV/AIDS Co-ordination Council and the activities of this Council focused on education, prevention, provision of food parcels for affected households and health care.
- Water and sanitation provision to the affected households was not addressed and the HIV/AIDS education provided did not include hygiene education such as importance of hand washing, safe sanitation and clean drinking water in reducing vulnerability of infected people to opportunistic pathogens.

Kgalushi et.al (2004) made the following recommendations:

- DWAF should provide policy guidelines for prioritizing sanitation service delivery to HIV/AIDS affected communities. It was recommended that sanitation and hygiene education should be integrated into HIV/AIDS education to help protect the affected people from water and sanitation- related infections. This would require better coordination between municipal and provincial health authorities and DWAF to make sure that they adopted a common approach to the integration of sanitation and hygiene education in HIV/AIDS education materials.
- DWAF staff should be trained to improve their understanding of the importance of adequate water and sanitation to the improvement of quality of life for people and households affected by HIV/AIDS.
- Local communities should be empowered to understand their rights so that they could make water services providers accountable to them.

3.3 Key issues emerging from the review of international and national experience

3.3.1 Access to sanitation for people with disabilities

Technical barriers

- Provision of a standard toilet for a household with physically disabled people did not guarantee access unless the toilet was designed to meet the need of these people, such as ramps for wheelchairs, grab rails for support, wide doors that open to the outside and the toilet big enough to accommodate a care-giver where this was necessary.
- Squat toilets without grab rails and pedestals were not suitable for people with impaired lower limbs.
- Sanitation systems that required users to carry water for flushing from a communal standpipe were not suitable for the people with disabilities.
- Communal toilet blocks were unsuitable for the disabled people because of lack of ramps and other modifications needed by these people.
- The design of suitable toilets should be informed by the needs of the disabled people and they should be consulted during the planning of sanitation projects.

Institutional barriers

- Negative stereotypes about disabled people led to discriminatory policies that did not make provision for the special needs of people with physical disabilities.
- The literature review and case study analysis showed that most countries had constitutions that included access to basic sanitation service as a human right but they lacked legislation to enforce provision of sanitation facilities that meet the needs of people with disabilities and other vulnerable groups.
- Even where there was legislation, people with disabilities were not aware of their rights, for example, the South African National Housing Act made explicit provision for additional subsidies for modifying toilets to meet the needs of disabled people, but disabled people continued to suffer from the lack of access to toilets because of lack of awareness of their rights.
- The monitoring of sanitation service backlog figures did not take into count the number of people with disabilities that lacked adequate sanitation; this group remained invisible.
- The MDGs and poverty reduction strategies did not consider people with physical disabilities as a separate group with special needs.

Social barriers

- Poor people with disabilities were socially isolated because of limited mobility; they were unable to participate in community forums.
- In some communities there was a stigma attached to being physically disabled; there were perceptions that physical disability was a punishment and families preferred to keep the disabled people hidden away from society.

Health and hygiene

- Failure to provide people with disabilities with appropriate sanitation facilities forced them to defecate in the open and this posed a health threat for them and the entire community.
- People with disabilities had difficulty in practising hand washing after use of the toilet if water was not available inside or near the toilets.

3.3.2 Sanitation for HIV/AIDS affected individuals and households

Technical barriers

Problems experienced by people with HIV/AIDS were similar to those of people with physical disabilities. When they reached the terminal stage of the disease they were too weak to walk to toilets that were located far from the house. Therefore access to an indoor toilet adapted to provide adequate space for care-givers would be ideal. This would reduce the burden on care-givers who were responsible for washing soiled clothes and bed linen.

In South Africa, the current 6 kL limit of Free Basic Water was not adequate for HIV/AIDS affected households because they needed large quantities of water for flushing toilets due to increase incidence of diarrhoea and water for washing soiled clothes and bed linen.

Health and hygiene education

The focus of HIV/AIDS policy interventions was on good nutrition and exercise; it did not include hygiene and sanitation-related education and the increase risks of opportunistic pathogenic infections for HIV/AIDS patients due to poor hygienic practices and lack of adequate sanitation facilities. Access to water supply on-site should be provided to promote hand washing by the infected people and their care-givers to protect them from sanitation-related diseases.

Social issues

There was evidence that HIV/AIDS patients were not able to use communal block toilets because the community members were not comfortable sharing toilets with them due to fear of contracting the virus.

In South Africa it was found that HIV/AIDS was still a taboo and communities were not comfortable in discussing HIV/AIDS challenges.

Institutional barriers

- The review highlighted the lack of water services policies and by-laws for ensuring access to basic sanitation services for HIV/AIDS affected people.
- Regulation of water services providers was recommended for ensuring that the rights of HIV/AIDS to basic sanitation services were being enforced.
- Special sanitation subsidies should be provided to HIV/AIDS affected households so that they could have indoor toilets.
- Government should prioritized delivery of basic sanitation services to HIV/AIDS affected communities.

4. GUIDELINES FOR SANITATION SUBSIDIES FOR SEVERELY MARGINALIZED INDIVIDUALS AND GROUPS

The following guidelines outlines important issues that should be taken into consideration in the provision of sanitation subsidies for severely marginalized individuals and groups based on international experience. Currently South Africa has very limited documented experience on the provision of basic sanitation services to the severely marginalized groups.

4.1 Guiding principles

The following guiding principles are recommended for the planning and provision of subsidized basic sanitation services to the severely marginalized individuals and groups.

Access to basic sanitation as a human right

Ensuring that the right of access to basic sanitation services includes the special needs of people with disabilities, HIV/AIDS affected people, women, children and other marginalized groups. A one-size–fits-all approach to the allocation of basic sanitation subsidies will not benefit the severely marginalized groups with special sanitation needs.

Human dignity

Sanitation is about dignity, this principle should apply to the provision of sanitation services to the severely marginalized groups. The provision of basic sanitation facilities that are not accessible to the severely marginalized people force them to practise open defecation and this can compromise their human dignity.

Equity

The provision of subsidies for sanitation services should not only be limited to the severely marginalized people and households in communities where there are other poor households without basic sanitation infrastructure because it would be unfair and could lead to the discrimination against the severely marginalized groups. The Strategic Framework for Water Services advocates for equitable access to pro-poor subsidies, this means that subsidies must be implemented in a fair and equitable manner without unfair disadvantage to other households in the same community.

Sustainability

The subsidy allocation for sanitation services must be based on long term sustainability to ensure that severely marginalized people are not provided with unsustainable sanitation services. The O&M requirements must be taken into consideration during the planning phase and the cost implication and responsibilities for O&M should also be addressed.

Safety

Toilets should have the necessary safety features for use by all. In addition, the safety concerns of people with disabilities, women and children must be taken into consideration when communal toilets are considered. This is particularly important for households living in dense urban informal settlements where the rape of women and abuse of children are prevalent.

4.2 Recommendations for providing sanitation subsidies to severely marginalized individuals and groups

The following recommendations are based on the findings from the analysis of the policy framework and the review of the international and national experience on sanitation needs of the severely marginalized individuals and groups.

Policy issues

The sanitation sector policies should make specific reference to the provision of subsidized basic sanitation service to the severely marginalized groups instead of lumping them together with the poor. Municipal policies and by-laws must include provisions for the specific needs of the severely marginalized individuals and groups.

Subsidy for basic sanitation infrastructure

- Additional sanitation subsidy for modifying the toilets to meet the needs people with disabilities should be allocated and this should be based on the real costs of adapting the toilets to meet the needs of these people.
- Municipalities must keep a register of people with disabilities and the tracking of progress in the clearing of the basic sanitation backlog must include the number of disabled people provided with sanitation facilities that meet their needs.
- The stigma attached to HIV/AIDS would make it difficult to prioritize the HIV/AIDS affected households in the provision of basic sanitation infrastructure; it is suggested that municipalities should identify communities that are worst affected by HIV/AIDS and prioritize them in the provision of subsidized sanitation infrastructure.
- Households that require specific modification of their toilets should apply for the additional sanitation subsidy in their individual capacity. Municipalities must provide the severely marginalized households with the support they need to apply for the additional subsidy.
- Communal toilet blocks in dense urban informal settlements are not suitable for people with disabilities, women, children and elderly because of security concerns; it is suggested that these households should be provided with a subsidy for a household toilet.

Subsidies for free basic sanitation services

The subsidy for the basic sanitation service should be provided to the severely marginalized groups under the indigent support policies. The free basic component of the sanitation service should be increased according to the needs of the affected households, for example, more water could be provided so that they could practice good hygiene. Municipalities should be guided by the prevalence of HIV/AIDS in their area of jurisdiction when selecting the level of free basic sanitation service. Additional equitable share grant allocation might be needed to fund a higher level of water services for the HIV/AIDS affected households.

Integration of sanitation and hygiene education into HIV/AIDS education programme

The link between good sanitation and hygiene practice and the quality of life for people infected with HIV/AIDS makes it essential to ensure that all HIV/AIDS education programmes include a component on the role of good sanitation and hygiene practice in

protecting infected people and their care givers from sanitation-related diseases. Local peer educators and community health workers should be trained and employed to conduct education and awareness on a regular basis in communities that are worst affected by HIV/AIDS.

Regulation of water and sanitation services provision for the severely marginalized individuals and households

Regulation of access to subsidized sanitation services for the severely marginalized individuals and households must be implemented at national and local government levels. The Human Rights Commission could play a role in ensuring that the rights of severely marginalized people are not overlooked. Effective communication channels must be put in place to inform the severely marginalized people about their right to safe water and sanitation services and processes to be followed to access these services.

Monitoring and evaluation systems

An effective M&E system must be developed for assessing the impact of improved access to sanitation services on the quality of life for people with disabilities, HIV/AIDS affected people and other severely marginalized groups. The beneficiary households should be provided with appropriate communication channels to express their views to decision-makers so that their needs can be taken into consideration during the planning of sanitation services.

5. CONCLUSION AND WAY FORWARD

The review of policies and literature showed that sanitation service provision to people with disabilities was neglected. Policies tend to refer to the poor as a target for subsidized basic sanitation services without making special reference to the special needs of severely marginalized people.

Research on the linkage between HIV/AIDS and access to sanitation in South Africa has been initiated during the last five years. The research has helped to raise awareness on the important role that safe water and adequate sanitation could play in improving the quality of life for HIV/AIDS infected people and their care-givers. Currently, there are no specific strategies for providing subsidized sanitation services that meet the needs of the HIV/AIDS infected people, however, a draft strategy for the provision of free basic water and sanitation services to this target group was being developed by DWAF

Efforts must be made to conduct research on the sanitation needs of the disabled people and other severely marginalized groups. South Africa will not be able to achieve basic sanitation for all while more than 2 million people with disabilities (Census 2001) remain without access to adequate sanitation services and their human right to basic sanitation service not receiving priority.

It is recommended that research must be conducted to identify the challenges faced by people with disabilities, the elderly and other severely marginalized people and based on outcomes of this research guidelines should be developed for accelerating delivery of sanitation services to severely marginalized individuals and groups.

REFERENCES

Coulson, J; Napier, M and Matsebe G (undated) Disability and universal access: observation on housing from the spatial and social periphery. Downloaded from www.hsrcpresss.ac.za

Coulson J, Napier M and Matsebe G (2003) Enabled environment: Reducing barriers for low-income people with disabilities (unpublished report)

Department of Health (2007) HIV and AIDS and STI Strategic Plan for South Africa 2007-2011

Department of Housing (1997) Housing Act of 1997

Department of Provincial and Local Government (2000) Municipal Systems Act

Department of Provincial and Local Government (2004) Policy framework for the introduction of the municipal Infrastructure Grant – Concise version amended by the Municipal Infrastructure Task team on 5 February 2004

Department of Provincial and Local Government (2007) Framework for an Integrated Local Government Response to HIV and AIDS

Department of Water Affairs & Forestry (2001) White Paper on Basic Household Sanitation

DWAF, DPLG, SALGA (2003) Strategic Framework for Water Services

Government of South Africa (1996) Constitution of South Africa

Government of South Africa (1997) White Paper on an Integrated National Disability Strategy, Office of the Presidency

Government of South Africa (2000) Promotion of Equality and Prevention of Unfair Discrimination Act No.4 of 2000, Office of the Presidency

Harigobin C (2008) Personal communication on DWAF policy for providing free basic sanitation services to people affected with HIV/AIDS

Hillbrunner C (2007) Background paper for the workshop on integration of water, sanitation and hygiene into HIV/AIDS home-based care strategies held in Lilongwe, Malawi, 29 Oct-1 Nov 2007

Jones H and Reed R (2003) Water supply and sanitation access and use by physically disabled people – Report of field work in Uganda, WEDC, UK

Jones HE and Reed RA (2004) Water supply and sanitation access and use by physically disabled people – Report of second field work in Bangladesh. WEDC, UK

Jones, H; Parker, KJ and Reed R (2002) Water Supply and Sanitation access and use by physically disabled people: A literature review. WEDC, Leicestershire,UK

Jones HE, Reed RA and Bevan JE (2003) Delivering WATSAN services to disabled. A paper submitted to South Asia Sanitation Conference, Dhaka, October 2003

Kamminga E and Wegelin-Schuringa M (2005) HIV/AIDS and water, sanitation and hygiene, IRC Thematic Overview Paper

Kgalushi R , Smits S and Eales K (2004) People living with HIV/AIDS in context of rural poverty: the importance of water and sanitation services and hygiene education –A case study from Bolobedu (Limpopo Province , South Africa)

Lewis I, Jones H and Reed R (2002) Water supply and sanitation access and use by physically disabled people- E-conference synthesis report, WEDC, UK

Magrath P (2006) Equal access for all – Meeting the needs for water and sanitation for people living with HIV/AIDS; WaterAid Ethiopia Briefing note 6

Matsebe G (2006) Sanitation policy in South Africa: Does it address People with Disabilities? A Paper presented at the 32nd WEDC International Conference, Colombo, Sri Lanka, 2006

Potter A and Clacherty A (2007) Water Services and HIV/AIDS – Integrating health and hygiene education in the water and sanitation sector in the context of HIV/AIDS. WRC Report No. TT 316/07

Potter A and Clacherty A (2007) Water Services and HIV/AIDS – A guide for local government councillors and officials responsible for water, sanitation and municipal health services. WRC Report No. TT 317/07

South African Human Rights Commission (2002) Towards a barrier-free society: a report on accessibility and built environment

WaterAid (2008) Creating user-friendly water and sanitation services for the disabled: the experience of WaterAid Nepal and its partners; www.wateraid.org/nepal

Water and Sanitation Program (2007) Water, Sanitation and Hygiene for people living HIV and AIDS

Wegelin-Schuringa M, Kamminga E and de Graaf S (2003) HIV/AIDS and its implications for the water and sanitation. A paper presented at the 29th WEDC International Conference, Abuja, Nigeria, 2003.

Wiman R and Sandhu J (2004) Integrating appropriate measures for people with disabilities in infrastructure sector. A GTZ report available from http://www.gtz.de

APPENDICES B -H

The following Appendices appear on the enclosed CD:

Appendix B: Literature review report

Appendix C: FBSan case studies – Consolidated report

Appendix D: Stakeholder consultation report

Appendix E: Economic and financial modelling exercise

Appendix F: List of participants

Appendix G: Results of the FBSan survey of 17 District Municipalities

Appendix H: Interview and survey questions