

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This literature review proposes to address several themes. Firstly, it will ground the research in the field of public management and development, and in particular, the context in which the delivery of basic sanitation services to informal settlements takes place within South Africa. An argument for the importance of operation and maintenance as a key component of sustainable sanitation service delivery will be made. Literature will also be reviewed for both local and international examples of job creation initiatives that have been implemented through partnerships between local government and community-based service providers for the provision of shared sanitation services in slums.

2.2 Development theory behind the provision of services in South Africa

Public participation, social learning, empowerment and sustainability are the key components of the people-centred development approach that currently guides the delivery of municipal services in South Africa (Davids, 2005). The approach focuses on municipalities "...working with communities to find sustainable ways of meeting their needs.... and improving the quality of their lives" (White Paper on Local Government: Section B, Ch 1.). Apparent in programmes such as the RDP and the IDP, it is an approach that is driven by formulating linkages between development, service delivery and local citizen participation (Mogale, 2003: 219). Integrated development planning is a process whereby municipalities manifest these linkages into development plans for the short, medium and long term (White Paper on Local Government: Section B, Ch 3.1.). The process requires an integrated approach to ensure participation from both across departments within a particular municipality, as well as with beneficiary communities.

The White Paper on Local Government (Section B, Ch 3.1.1) advocates that municipalities adopt an approach that enables them to gain a better understanding of the local dynamics within a particular community, so that these in turn, can be accommodated into the overall vision and development strategies for the area. According to Theron (2005a: 138), a municipality's ability to identify and meet the needs of local communities cannot be driven by a "paternalistic, top-down, [and] prescriptive" approach or one that has been defined by social scientists or professionals (Theron & Wetmore, 2005: 155). An integrated approach to development planning is required. Theron and Wetmore (2005) state that this is achieved

through role-players having an improved understanding of the local situation as it is created by their own social reality. They have the ability to identify it, and through conscientization, they have the ability to initiate change to the situation. This process is one of the key principles of developmental local government. The authors (Theron & Wetmore,2005) reiterate that the resource poor are integral to defining the reality in this process and hence there is the need for the formation of linkages between the broader community and the municipalities as recommended in the White Paper on Local Government (Section B, Ch 3.3) that will allow for their participation in this process.

Dauids (2005:19) states that “participation involves a two-way interchange of decision-making, views and preferences” and that public participation should be understood in the sense of :

- Participation in decision making;
- Participation in the implementation of development programmes and projects’
- Participation in the monitoring and evaluation of development programmes and projects;
- Participation in the sharing the benefits of development.

The challenge is for municipalities to make provision to accommodate the various aspects of public participation in the development planning processes.

Theron (2005b: 111) maintains that public participation in the IDP process not only ensures that the communities’ needs are identified, but that that it also gives legitimacy to the particular programmes and interventions identified. On the ground, the potential benefits of participation, as highlighted by Dauids (2005: 20), include: an improved sense of ownership; motivate people to act responsibly; ensure equity, capacity building and empowerment and an improved understanding of the limitations and challenges to the provision of particular service. In the context of the delivery of sanitation services, these are key to the “sense of ownership and responsibility” that Brikke (2000: 45) advocates as essential for operation and maintenance. One could therefore argue that public participation should therefore be considered a key component for the planning of the operation and maintenance of shared sanitation facilities in informal settlements.

Theron (2005a: 141) voices his concern that the integrated planning process will be ineffective unless municipalities have the political will and the capacity to convert the development plans into operational programmes that can be implemented on the ground.

2.3 Policies guiding the provision of basic sanitation services

In South Africa, access to basic water and sanitation services and access to a safe environment are considered a basic human right (Constitution of the Republic of South Africa, Act 108 of 1996: Ch 2, Sections 24 and 27), and in terms of Section 152 of the Constitution, local government is responsible for ensuring the provision of services and the promotion of a safe and healthy environment. The White Paper on Water Supply and Sanitation Policy, (DWA, 1994) defines the minimum acceptable basic level of sanitation as:

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

In terms of the Municipal Systems Act 32 of 2000, municipalities are legally required to prioritize the delivery of basic services to those communities in greatest need so to ensure that everyone has access to at least a basic level of municipal services. Communities living in informal settlements and who face the greatest health risk due to inadequate sanitation should therefore receive the highest priority in the delivery of basic municipal services.

However, in the case of the City of Cape Town (COCT), this is not so. In 2006, the City of Cape Town's Water Service Development Plan (City of Cape Town, 2006a) stated that 100% of residents living in formal housing had access to basic sanitation, whilst only 36.5% of residents of informal settlements had access to basic sanitation services. According to the 2007/2008 Water Services Development Plan, the COCT has prioritized the provision of an emergency or rudimentary level of sanitation service to all residents of informal settlements, and has planned to extend the delivery of service provision to a basic level of sanitation service once everyone had access to an emergency level of service. Table 2.1 summarizes the levels of sanitation service provided by the COCT in 2006.

Table 2.1: Levels of Service for the provision of sanitation for the COCT

| | |
|------------|--|
| Inadequate | No access to sanitation as defined below. (Residents would either share with other residents, supplied at a basic or full level of supply, their sanitation facilities, or would provide for themselves – often through unhygienic means. In many instances these residents are being serviced by the COCT through the weekly removal of 20 litres open stercus “black bucket” containers, a service which is to be replaced.) |
| Emergency | Partial access to sanitation, as dictated by site-specific constraints (e.g., high dwelling densities) |
| Basic | a) The provision of a shared toilet (at a ratio of not more than 5 families per toilet) which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease-carrying pests; and b) The provision of appropriate health and hygiene education. |
| Full | On-site Waterborne, Septic Tank or French Drain |

Source: City of Cape Town, (2006: 21)

The COCT has recently extended its deadline by when all its residents will have access to a basic sanitation service, from 2010 to 2012 (City of Cape Town, 2007). According to the Informal Settlements Master Plan 2007-2014 (Sokupa & Hendricks, 2006: 3), there are approximately 280 000 households in a total of 206 informal settlements in Cape Town. In order for the COCT to address the backlog effectively, the city needs to deliver approximately 20 000 houses per annum. The current rate of delivery is approximately 8 000 houses per annum.

It is therefore apparent that in reality residents of informal settlements will, in the short to medium term, only have access to a shared sanitation service, and that it will most probably be for a much longer period before each household has a serviced house provided by the government.

2.4 The importance of operation and maintenance for sustainable sanitation service provision

According to Solanes and Jouravlev (2006: 20), one of the main reasons for loss of credibility of local government, is their inability to meet the basic needs of the population they are meant to serve. The authors attribute this to the inability of municipalities to generate and implement appropriate service delivery policies (Solanes & Jouravlev, 2006: 9). Where there are policies in place, inefficient administrative and management practices make them redundant. One of the key findings from the 2006 United Nations World Water Development Report (UNWDR2) was that in many countries the “water crisis” was more of an institutional

crisis than a shortage of water as such. The report attributed the water crisis to the “... *mismanagement, corruption, lack of appropriate institutions, bureaucratic inertia and a shortage of investment in both human capacity and physical infrastructure*” (UN-Water, 2006: 46).

Brikke, (2000: 45) identified several components of sustainable service provision. They include:

- It functions and is being used;
- It is able to deliver an appropriate level of benefits; (*quality, quantity, convenience, continuity, affordability, efficiency, equity, reliability, health*)
- It continues over a prolonged period of time; (*which goes beyond the life-cycle of the equipment*)
- Its management is institutionalized; (*community managements, gender perspective, partnership with local authorities, involvement of formal / informal private sector*)
- Its operation, maintenance, administrative and replacement costs are covered at local level; (*through user fees, or alternative financial mechanisms*)
- It can be operated and maintained at local level with limited but feasible external support; (*technical assistance, training and monitoring*) and
- It does not affect the environment negatively.”

In order for a municipality to ensure sustainable service delivery once the infrastructure providing the service has been constructed, routine operation and maintenance activities need to take place. Operation is the delivery of a particular service and is dependent on both users and providers using the facilities and equipment with care. Maintenance refers to the activities that ensure that the infrastructure remains in a serviceable condition (World Health Organization, 2000: 1). Brikke (2000: 42) includes preventative maintenance, corrective maintenance and crisis maintenance as components of maintenance. Operation and maintenance can be defined as the tasks and activities that need to take place to ensure that the service is provided as per the design criteria for at least the duration of the expected design life of the infrastructure.

Subramanian et al. (1997: 3) state that inadequate operation and maintenance of the physical infrastructure are indicators of unsustainable service provision. Sohail et al (2005: 48) also strongly advocates that “... operation and maintenance should be viewed as critical to the sustainability of systems”.

In South Africa, calls for proper operation and maintenance have been raised in various DWAF reports as an ongoing concern over the last few years. The DWAF Sustainability

Audit of 2005 concluded that the major barrier to sustainable sanitation service delivery was inadequate operation and maintenance. The lack of distinction between responsibilities of household, community and municipality, as well as ineffective planning, monitoring, evaluations and interventions were identified as further core problems (CWSS, 2007). Subsequently, the 2006/2007 DWAF Annual Report raised concern that municipalities were not paying sufficient attention to the operation and maintenance of services, and in particular, the potential for the “creation of moving targets since people who are currently serviced would be left without services when the infrastructure breaks down “. (DWAF, 2007b; 3). The concern over the lack of O&M was again highlighted in the Masibambane II evaluation of 2007 which noted that unless adequate provision for O&M of the infrastructure provided is made, those who have been served will soon be rejoining the backlog queue (DWAF, 2007c, 15).

Generally, local municipalities in developing countries have a poor track record for the provision of sustainable sanitation service delivery, and in particular, the operation and maintenance of communal sanitation facilities in slum areas. Sohail et al. (2005) identified lack of public sector resources, poor management, inefficiency and unaccountability as the reasons for poor servicing of public infrastructure, when investigating the sustainability of urban infrastructure in India, Sri Lanka and Pakistan. These are the very examples of the “water crisis” raised in the United Nations World Water Development Report in 2006 (UN-Water, 2006). Sohail et al. (2005) found isolated examples of successfully managed facilities. The lack of evidence of a systematic and programme-based approach to O&M indicated that when operation and maintenance was addressed, it was done in an ad hoc manner, in reaction to a crisis rather than a routine, preventative approach.

Sohail et al. (2005: 43), identified the following indicators of poor O&M as:

- Overlapping of responsibility, duplication of functions and lack of coordination between different government agencies;
- Full capacity of community was not exploited due to underestimation of skills and inadequate training;
- Lack of resources for O&M.

Sohail et al. (2005: 39) state that the traditional approaches adopted by local municipalities and utilities are not delivering the required level of sanitation service to slum areas, and that alternative service provision arrangements need to be considered. It is questionable as to whether merely changing the service deliveries arrangements will improve the sustainability of the services provided, unless the other constraints affecting the sustainability of the services provided are also addressed.

A co-ordinated and systematic approach is proposed by Sohail et al. (2005) to ensure that adequate provision is made for operation and maintenance. An approach which identifies and quantifies the tasks to be done. Provision also needs to be made for monitoring and evaluation, as well as appropriate mechanisms to allow for public participation and communication.

A World Bank and Water and Sanitation Programme – South Asia Report on the Mumbai Slum Sanitation Programme (WSP, 2006) recommended that the provision of sanitation services to slums cannot be seen as separate “add-on” services linked to existing sanitation services surrounding the slum areas, but rather that service provision to slums needs to be regarded as an integral part of the total services provided to the entire city. The inclusion of service delivery to slums as part of the overall service delivery of a municipality, implies a more equitable allocation of planning and resources than would otherwise occur if service delivery to slums is considered a secondary and separate “add-on” service delivery.

The provision of sustainable services to shared sanitation facilities in slum areas requires municipalities to adopt an integrated approach for both the planning and the implementation of operation and maintenance, so that it can be accommodated within the existing institutional arrangements that govern the provision of water and sanitation services.

2.5 Local economic development, poverty alleviation and job creation strategies

In addition to the provision of municipal services, the Constitution (Section 152(1)(b)) identifies the promotion of local economic development as one of the core responsibilities of local government. Municipalities are responsible for promoting job creation and the local economy through the development of local policies and procedures conducive to local economic development. The White Paper on Local Government (Section B, Ch 3.2.1) states that targeted municipal procurement policies and the adoption of labour-intensive construction methods for provision of municipal services are examples of some of the measures that municipalities can take to promote local economic development. These can be directly applied to the provision of services

The primary focus of municipalities in promoting the local economy is the provision of infrastructure and to provide quality and reliable municipal services. In terms of the White Paper on Local Government (Section B, Ch 1.1), “...local government is not directly

responsible for creating jobs. Rather it is responsible for taking active steps to ensure the overall economic and social conditions of the locality are conducive to the creation of employment opportunities”.

Mogale (2003: 240) notes that although there is extensive awareness of local economic development, the understanding and the application of national policies into tangible projects to reduce poverty, varies across municipalities. A similar concern is voiced by Theron (2005a: 141), where he notes that sustainable service delivery will fail where there is a lack of political will and capacity, at a local government level, to convert development plans into tangible and targeted projects that are aligned with the objectives and vision of their IDPs.

Mogale (2003: 241) further argues that the only way to effectively link poverty reduction strategies and the extension of service delivery, is to establish partnerships between local government, civil society, the private sector and national government, which are built on democratic principles, meaningful participation and transparency..

The Expanded Public Works Programme (EPWP) programme is the vehicle through which Government maximizes the job creation and skills development opportunities for the provision of municipal infrastructure projects, through the use of labour intensive construction methods, SMMEs and small contractors, skills development opportunities, and targeted employment for the unemployed, etc.

The Sanitation Job Creation programme, as developed by the Department of Public Works and the Department of Water Affairs and Forestry, linked sanitation infrastructure and service delivery with job creation and skills development specifically targeted at the youth, the disabled and women. Operation Gijima was launched in 2006 by the Department of Water Affairs and Forestry as an accelerated sanitation delivery programme to assist municipalities to reach the 2010 sanitation services delivery targets, whilst at the same time, building skills and creating jobs in the rural areas.

Classen et al. (2007) criticized the EPWP programme for the lack of an exit strategy after the construction of the infrastructure. Similar criticism can be made for the Sanitation Job Creation programme. A recent analysis of several projects from the national Sanitation Job Creation Programme (DWAF, 2007) showed that the emphasis of the case studies reviewed was on the delivery of sanitation infrastructure, and that the job creation and skills development was associated with the construction of the facilities. Learners received training (accredited and non-accredited) in the manufacturing of blocks, slabs and pedestals, in painting, roofing, health and safety, pipe-laying for water reticulation, concrete work and

brick masonry, as well as training to be builder assistants, builders, contractors and quality assessors. In terms of an exit strategy, the sanitation job creation programme will have equipped SMMEs, small contractors and cooperatives with the necessary skills and experience to be able to construct other municipal infrastructure. However it is questionable as to whether the Sanitation Job Creation programme allocated sufficient resources for the longer-term sustainability of the services provided, in terms of skills development and job creation opportunities beyond the construction period.

Recommendations contained in the DWAF report (DWAF, 2007) also highlighted the need for entrepreneurial support to contractors, SMMEs and cooperatives, and the need for preferential procurement systems for SMMEs and cooperatives and for efficient management systems. The need is therefore for municipalities to allocate additional resources for the management and mentorship support given to the SMMEs so as to ensure that the infrastructure is delivered on time, within the technical specifications

One of the major differences between the South African Sanitation Job Creation programme and the Bolivian Programme of Rural Basic Sanitation (PROSABAR) programme, was that in Bolivia, people were trained to construct the infrastructure, as well as in operation and maintenance; and also that post- construction, operators were employed to maintain the infrastructure (DWAF, 2007).

Although South African households are responsible for performing most of the O&M tasks of their individual toilets, the Sanitation Job Creation Guideline for Municipalities (DWAF, 2005) identified the following tasks as potential job creation opportunities that could be carried out by small contractors:

- pit management;
- maintaining water flush systems;
- emptying septic tanks;
- management of the procedures for the treatment and disposal of faecal sludge;
- maintaining pipelines and clearing blockages; and
- provision of health and hygiene education;

The above Guideline suggests that the payment of the small contractors should be sourced from municipal tariffs or from the Equitable Share, where the poor cannot afford the tariffs. The Equitable Share (ES) was introduced to municipalities to assist them with service delivery to the very poor, and in particular, it was calculated to cover the operating costs of basic services. Although the grant is unconditional, it was envisaged that municipalities would use the ES for the general operating account of the municipality, especially where the

cost to provide the service exceeds the amount billed (if at all, in the case of Free Basic Services) to poor households.

The DWAF evaluation report also noted that health and hygiene awareness, as a form of employment, had not been explored. There was no record of O&M skills development or on-the-job training or the deployment of community-based workers to conduct any operation and maintenance activities at any of the case study sites.

2.6 Overview of the tasks and responsibilities for the operation and maintenance of shared sanitation facilities in India and Kenya

Case studies reviewed in Mumbai (WSP Report, 2006), Nairobi (WSP Field Note, 2004) and India and Thailand (IRC, 1997) highlighted the poor track record of municipal-managed sanitation facilities in slum areas in the past, and the need to consider alternative service-provision arrangements. The municipalities were unable to manage staff and as a result, unable to maintain or repair the facilities. Common factors affecting the quality of the operation and maintenance included:

- lack of supervision and lack of cleaning equipment, tools and spares;
- lack of storage space for equipment when provided;
- poor record keeping for cleaning, repairs and emptying; and
- lack of end-user awareness on the correct operational procedures for the latrines.

Recently, both the cities of Mumbai and Nairobi have entered into partnership with donor organizations to upgrade and improve sanitation service provision to their slums.

The Municipal Corporation of Brihan Mumbai (MCBM) implemented the Mumbai Slum Sanitation Programme (SSP). Key features of the SSP were the participatory and demand responsive approach to the services provided, and that the responsibility for operation and maintenance of the community toilet blocks was formally handed over to the Community Based Organisations (CBOs). A memorandum of understanding, with clearly defined roles and responsibilities, was signed between the CBOs and the municipality. Depending on the willingness, capacity and resources available, the CBOs could either conduct the tasks themselves, employ staff to conduct the tasks or sub-contract the tasks outs to a private service provider. Table 2.2 summarizes the key O&M tasks undertaken by both the municipality and the CBOs.

Table 2.2: O&M Tasks: Mumbai

| Tasks | CBO | | | MCBM |
|---|-----------------------------------|--|----------------------|------|
| | Tasks conducted by members of CBO | Tasks conducted by staff employed by CBO | Tasks contracted out | |
| Cleaning: provide own cleansing materials | | X | | |
| Minor repairs: conduct and procure spares | | X | | |
| Admin: bookkeeping, minute taking | | X | | |
| Major blockages and provision of water and sewerage connections | | | | X |
| Monitoring | | | | X |

The CBOs were responsible for carrying out and paying for minor repairs, keeping a membership register, bookkeeping and taking minutes of meetings whilst the MCBM was responsible for major repairs and providing network services of water supply and sewerage to the sanitation facilities (WSP Report , 2006).

One of the biggest challenges facing the job creation component of the Mumbai SSP is the extent to which tariffs can be collected, so that loans can be repaid and staff paid. Initial reviews of the programme identified the lack of financial management capacity of the CBOs as an area that needed to be addressed. Also at the time of the report, most of the facilities had only recently been completed and had not yet encountered any maintenance problems; nor had they received their utility bills.

In Kitui-Pumwani in Kenya, shared toilets (community public latrines) were constructed. Households were allocated a shared cubicle within the toilet block and were responsible for the operation and maintenance of the facility. Although the Nairobi City Council supplied free services to the blocks, the households were responsible for conducting repairs. According to Wegelin-Schuringa (1997), the system initially worked well; however, the increased tenancy led to a reduction in the commitment to clean the facilities. As a result, it became increasingly difficult for committees to enforce routine cleaning and maintenance activities, and many of the toilets fell into disrepair. Where the end-user group for a particular facility is too big and in many cases undefined, due to the constant influx of people, shared responsibility for O&M did not work.

A more recent Water and Sanitation Programme-Africa study (WSP Field Note, 2004) reported that by the 2000, most of the 138 municipal public toilets in Nairobi were poorly

managed and had fallen into disrepair as a result of a decline in municipal budgets. The lack of funding led to the neglect of maintenance activities and the management of the public toilets. The Nairobi City Council (NCC) implemented a pilot programme using private-sector partnerships to refurbish, manage and operate the public toilets. Essentially, the provision of the O&M functions were outsourced to private sector partners for public toilets in the CBD area and to community committees for public toilets in the slum areas. Table 2.3 summarizes the key tasks and responsibilities of the stakeholders responsible for the operation and maintenance of the refurbished public toilets in Nairobi.

Table 2.3: O&M Tasks: Nairobi

| Tasks | Community committee | Private Service Provider | NCC |
|----------------------------|---------------------|--------------------------|-----|
| Refurbishment | | X | |
| Operations | | X | |
| Maintenance | | X | |
| Cost recovery from tariffs | | X | |
| Monitoring | | | X |

As with Mumbai, potential for job creation opportunities is dependent on the extent to which sufficient tariffs are collected to cover the refurbishment costs and repairs, and whether there are sufficient funds available to pay staff and provide a sustainable sanitation service. In terms of the net job creation potential, the deployment of staff previously employed by the municipality also needs to be taken into account.

2.7 Conclusion

Sanitation service delivery in the South African context is governed by a local government developmental approach, an approach in which public participation and sustainability are two of the main components thereof. Theron (2005a: 141) notes that sustainable service delivery, amongst other factors, requires on the part of local government, the will, the resources and the capacity to “translate its development strategies into operational strategies”. In order for local government to identify and meet the service delivery requirements of the population served, appropriate mechanisms need to be in place to ensure participation both by the beneficiary communities and between relevant departments within the local government context.

The literature reviewed indicated that operation and maintenance is a key component of sustainable sanitation service delivery, and internationally, governments in developing countries have a poor track record in making adequate provision for the O&M of sanitation services to slum areas. In the South African context, the DWAF Sustainability Audit raised concern that inadequate provision for O&M would not only affect the sustainability of the services provided, but that it would also result in the increase of the sanitation backlog, because populations already served would revert back to the unserved population as the infrastructure provided begins to fail.

The O&M of shared sanitation infrastructure in slums requires an integrated approach that is part of the overall sanitation service delivery plan of the municipality and that clearly defines all the responsibilities and tasks. The approach must also ensure that it allows for public participation and that appropriate monitoring and evaluation (M&E) systems are in place.

In South Africa, scaled-up job creation opportunities in the sanitation sector have been implemented through the Sanitation Job Creation Programme. One of the main criticisms of this programme was that it focused on the delivery of infrastructure, and that little provision was made for job creation opportunities beyond the construction period. Skills development focused on the delivery of the infrastructure, and no provision was made for skills development in operation and maintenance.

In India and Kenya, examples of community-based approaches to the operation and maintenance of sanitation facilities in slums were found. The CBOs were responsible for the day-to-day operational tasks, whereas the municipalities were only responsible for M&E. At the time of the reports, the newly implemented programmes were fully operational. However, the long-term sustainability of the sanitation services provided is questionable if the service providers are unable to collect sufficient tariffs to cover their operational costs. Neither India nor Kenya have a Free Basic Services policy for the indigent population, as is the case in South Africa. There is therefore an argument to support a local community-based approach to the O&M requirements in South Africa, as the operational costs should be fully covered by the Free Basic Services policy through the Equitable Share allocation.

The research will investigate whether there are any longer-term job creation opportunities in the delivery of basic sanitation services to informal settlements, beyond the construction of the infrastructure. One of the keys to sustainable service delivery, is to ensure that public participation is integral to the planning processes undertaken. This research will therefore need to adopt a participatory approach to enable municipal officials to facilitate public

participation, both from the beneficiary communities as well as between the inter-governmental departments involved with sanitation service delivery.

