Author: Martin Mulenga (University of Southampton)
Co-author: Ben Fawcett (University of Southampton)
Paper Title: **Impediments to the Implementation of the DRA Methodology in Urban Sanitation Programmes in Zambia and South Africa**

1. Introduction

A new water supply and sanitation planning approach called the "demand-responsive approach" (DRA) is now becoming accepted in many developing countries (Whittington et al., 1998). This approach is considered revolutionary and was established as part of the new consensus agreed at the Dublin Conference in 1992[1], that water and sanitation services should be seen as economic goods (Black, 1998). The Water and Sanitation Program (WSP) of the World Bank and the United Nations Development Programme (UNDP) define the Demand Responsive Approach (DRA) as 'a methodology that allows demands of the consumers as individuals and as a community to guide key investment decisions. Such an approach supposedly establishes clear links between the kind of service and service benefits the stakeholders want and what they are willing to contribute in cash, labour, and time for the establishment and running of these services' (WSP, 2000).

The demand responsive approach was developed after the failure of many different approaches, such as the supply-led approaches to increase sustainable water and sanitation coverage. The most common failing of the past sanitation programmes has been failure to take into account the expressed needs of the users (Wright, 1997). This, according to Hogrewe et al., (1993) is due to existing institutions that have been organizationally structured to provide services in a supply-driven manner.

Globally, the water and sanitation crisis is very gloomy and according to the Water Supply and Sanitation Collaborative Council (WSSCC) (2001), around a quarter of the 4.8 billion people in the developing countries are still without access to improved sources of water, while half of them do not have access to adequate sanitation services. The two countries, South Africa and Zambia, studied in this research are no exception to this legacy. In South Africa, it is estimated that up to 18 million people lack access to adequate sanitation facilities, the majority of whom live in rural areas and urban informal settlements (DWAF, 2001). The situation in Zambia is equally disturbing with an estimated 52 percent of the population depending on unimproved pit latrines, which are normally unsanitary especially in the overcrowded peri-urban settlements (GRZ, 1999).

Putting the philosophy of demand-driven planning into practice is just beginning, however, and much remains to be learned about the practical implementation of this approach (Whittington et al., 1998). Consequently, this research aimed to identify the issues that may hinder the effective implementation of the DRA methodology in water and sanitation provision to the urban poor and to recommend methods to overcome them.

[1] The Dublin International Conference on Water and Environment

Experience shows that the implementing agencies are keener to undertake water projects using the DRA methodology than sanitation projects because sanitation improvements appear to be more complex to achieve (see Black, 1998). The relegation of sanitation to a lower priority than water has resulted in most of the urban informal settlements having extremely poor environmental sanitation conditions, which in a number of cases are blamed for the outbreak of diseases (GRZ, 2001). So far, one can argue that the methodology appears to have been developed only for the rural areas and only for the water sector. For this reason this study was dedicated mostly to sanitation issues although water issues were also considered.

Zambia and South Africa were specifically selected because they have both adopted the DRA in their sanitation policies. Another reason for the choice was because this study is linked to a DFID sponsored research project entitled "Linking Urban Sanitation Agencies with Poor Community Needs: A Study of Zambia, Zimbabwe and South Africa". Studying the two countries also offered many opportunities to learn how the agencies in each location cope with the problem of low sanitation coverage, considering that South Africa is much wealthier than Zambia[2]. The study was undertaken in the urban poor areas because due to higher population densities, people there face a greater risk of disease from poor sanitary conditions than those in rural areas (see also Black, 1994; Wright, 1997; Varley et al. 1996).

This study therefore explores the barriers at both community and institutional levels that may have an impact on the implementation of the DRA methodology in sanitation programmes in urban poor communities. To identify the barriers to the DRA on the ground, both quantitative and qualitative methods were used to collect data from households in urban informal settlements and sanitation agencies in the two countries. The study was implemented in two informal settlements in Ndola and two in Lusaka in Zambia and two each in Pretoria and Durban in South Africa. A total of 1,894 households were surveyed and 88 representatives of institutions dealing with water and sanitation issues were also interviewed. The household and institutional surveys took place between August 1999 and July 2000.

The research findings and discussion are organised in 5 main sections under the following themes:

1. Determinants of demand for improved water and sanitation services
2. Social intermediation issues
3. Technical choices of water and sanitation
4. Institutional issues
5. Financial and economic issues

These themes provide a basis for determining the key lessons learnt, and recommendations for the effective implementation of the DRA methodology in urban poor sanitation programmes.

[2] On the 2002 Human Development Index, which measures a country's achievements in terms of life expectance, literacy levels, and adjusted real income South Africa is ranked 107 and Zambia a low 153 out of 174 countries (Human Development Report 2002).

2. Determinants of Demand

The principal determinants of demand that were found to have a significant impact on the DRA implementation in both countries are as follows: income, the cost of improved sanitation services, tenure and homeownership, and level of education.

Income

The level of household income is important in determining demand for improved services because it indicates whether a household has the ability to pay or not (World Bank, 1998). The survey revealed that the majority of the respondents in both South Africa and Zambia live below their national datum poverty lines of US$162 and US$69 respectively. The monthly household income in South Africa was found to be $68 and $55 in Zambia. These data were supported by the CVM study which showed that only fifty percent of the respondents were willing and able to pay for improved water and sanitation facilities. Of those who were willing to pay for the improved sanitation services, the majority were only willing to pay the lowest amount that was presented to them. The cost of providing even the basic VIP latrine is, however, far more than what most of the people were ready to pay. The low willingness to pay for improved sanitation services therefore has an impact on the implementation of the DRA methodology because the methodology is designed to respond to those who express demand. This favours those people who already have higher incomes and a reasonably strong asset base and excludes those who have none.

It is suggested in the water and sanitation sector that households can make upfront payments as a declaration of their demand for improved sanitation. However, upfront costs could be a barrier to the poor, considering the high cost of water and sanitation systems. The survey findings suggest that over fifty percent households may be unable to pay recommended tariffs, due to poverty, which is exacerbated by high unemployment in both countries. Households do not have access to credit facilities as well.

The measurement of household income in urban poor communities is problematic, and although the household monthly expenditure route was used, it was found not to be dependable because most of the households do not keep a record of how much they spend in a particular month and it tends to vary. As a result, assessing demand under such circumstances proved to be problematic and unreliable.

Households in the study also had difficulties when dealing with the hypothetical VIP latrine that was presented to them in the demand assessment study. This was due to their ignorance about the different toilet technologies available. The description of the VIP latrine with the aid of pictures did not help much and yet the respondents were expected to say how much they were willing to pay for the improved facility. By providing a hypothetical situation households are not fully aware of the true costs and implications of a particular intervention and this does not reflect a true picture of what the reality is.

The evidence from the study leads to the conclusion that household income is a major barrier to the implementation of the DRA in urban poor communities because the

majority cannot afford to pay significant tariffs for sanitation services. Poverty in the urban poor communities is therefore the greatest barrier to the implementation of the DRA methodology.

Cost of services

The DRA emphasises that consumers should cover a larger share of the cost of providing water and sanitation services. However, as pointed out above, the majority are marginalised by the cost recovery measures due to the cost of services. The introduction of water tariffs in South Africa, for example, led communities to draw water from unsafe sources which resulted in an outbreak of cholera in 2000. There is need therefore to design cost recovery programmes with the poor in mind so that a repeat of what happened in South Africa can be averted.

The study also found that the conventional waterborne toilet facilities provided by the sanitation agencies in some urban poor areas are beyond the reach of the majority of the residents, whose incomes are very low. Unless relatively more affordable toilet technologies are used it is impossible for the poor communities to afford them without substantial subsidies.

The study also indicated that compared to water, sanitation facilities are not a major priority in all the study areas. This has a negative impact on the DRA because if the households do not consider sanitation to be a major priority it will be difficult to expect them to spend their limited resources on it, at the expense of water supply, for example.

These factors have a direct impact on the DRA; unless affordable services are provided to the urban poor communities it will be difficult to recover costs from them as the DRA prescribes.

Tenure and Homeownership

The issue of home ownership and land tenure is of great concern to many respondents interviewed. Many tenants complained that they are unable to participate fully in community programmes due to the uncertainty of their long-term residence in a particular house. Length of residence depends on their landlords whom they claim, could evict them at any time even without valid reasons. The fact that many landlords do not live in the informal settlements worsens the situation, as they do not participate in community programmes that affect their tenants and they do not have first hand experience of the water and sanitation problems. Such a situation therefore affects a household's participation in community activities, which is ultimately a barrier to the DRA implementation.

Homeowners interviewed, also complained of their failure to be granted land tenure, especially in areas that are still considered illegal by the authorities. In a few cases, some people who have entered the two countries illegally and therefore do not want to attract attention for fear of being deported, also hamper community coordination which leads to poor implementation of the DRA. In both South Africa and Zambia sanitation agencies and aid agencies do not operate in communities which do not have a legal status. Without

the participation of these organisations, the DRA cannot be feasible because they are key participants in the implementation of the methodology.

Land tenure and homeownership barriers have an impact on community organisation and may influence willingness to pay for improved services. Without the community's willingness to pay for improved sanitation services therefore, the DRA is not feasible.

Level of education

It is widely known in the water and sanitation sector that effective programmes depend very much on public awareness and mobilisation through education and communication. In order for a household or a community therefore, to evince demand for improved sanitation services they need to have knowledge about the service providers in their area and their community leaders, as well as, about the existence of different types of sanitation technology. The level of education in all the study areas is, however, low and as a result many of the respondents have little knowledge about government agencies and even about their own community organisations. The community leaders and representatives, such as councillors, are equally ignorant and lack key community organisational skills, which are vital for the implementation of the DRA methodology.

Although both South Africa and Zambia spend a large portion of their Gross Domestic Product (GDP) on education, few financial resources have been spent on educating communities about environmental sanitation issues. A lot of civic education is needed so that the communities will consider sanitation as a high priority issue. The mission to educate the masses about environmental sanitation will, however, come at a cost because more environmental health officers will be needed and the current ones will need to be retrained so that they can address the sanitation issues more effectively. The majority of the households that are unable to pay cash for improved services, suggested that they might be ready to pay for services in terms of labour but since most of them are unskilled they may require some training and this would also take time to achieve.

In all the communities studied, many of the respondents are ignorant about the avenues they could use to express their demand for improved services, despite the existence of some form of community based organisations in all the study areas. The respondents were not only ignorant about the agencies responsible for the provision of services but they were equally ignorant about their own community structures and organisations. The ignorance stems mostly from poor community leadership and mobilisation and the vast sizes of the informal settlements, which act as barriers to the implementation of the DRA methodology.

There is clearly a lack of awareness in urban poor communities about the key issues that are vital to the implementation of the DRA methodology such as good community organisation. Likewise, there is a gap in knowledge about the existence of different water and sanitation technologies. Therefore, civic education needs to be undertaken in order to increase the possibility of providing sustainable sanitation services through the use of the DRA methodology. DRA proponents such as DFID (2000) suggest that in situations where poor people may not always be able to express their demands, project staff need

skills in social mediation and communication to enable them to do so. This, however, conflicts with the requirements of the DRA which encourages communities to express their demand for improved services based on their needs and their ability to pay. Influencing the community demand may lead to the perpetuation of the supply-led approach that the DRA is meant to replace.

3. Social Intermediation Issues

The DRA methodology requires that consumers should be engaged in the process of selecting, financing, implementing and managing of sanitation facilities according to expressed demand. This study found, however, that none of the surveyed areas have well organised community structures. In both South Africa and Zambia for example, 78 percent and 87 percent of the respondents respectively, are unaware of any community-based organisations. Nearly eight out of ten respondents in both countries do not believe that their communities have the capacity to initiate and manage water and sanitation projects without the help of external agencies, due to poor leadership.

Whilst there are benefits to devolving responsibility for water and sanitation management to the community level as the DRA advocates, this can place a considerable burden on the already impoverished social organisations. In many cases, especially in Zambia, it was observed that the local authorities have taken advantage of the new development strategy that encourages the involvement of communities in service provision. They have literally abrogated their responsibilities to the communities to whom they give minimal or no support at all. Communities have, however, no capacity to undertake the responsibilities that the local authorities have imposed on them. At the moment, only development actors such as NGOs undertake some capacity training at grass root level, but their contribution is minimal due to the sheer size of most urban poor communities. This leads to slow delivery as most of the time is spent on capacity building activities.

This study found that the voluntary nature of community participation in projects has a negative impact on community organisation. This has been exacerbated by the unfavourable economic situations in the two countries, which makes it difficult for community members to devote more time to non-paying community work at the expense of income generating activities. Experience gained from the field surveys shows that communities could only spend some time for one-off projects and not recurring ones. Readiness to participate in community programmes was found to be higher in cases where households were compensated for their labour contributions, such as the PUSH sponsored food for work community projects. The voluntary nature of community leadership is therefore a barrier to the implementation of the DRA methodology in urban poor communities.

The DRA methodology also largely fails to recognise the large regional differences between rural and urban areas. Whereas the communities in the rural areas are more organised, the same cannot be said about the urban poor communities of both South Africa and Zambia. People emigrate from various rural areas seeking jobs and

improvement of their lives in cities. This is also compounded by a considerable number of people who view their stay in informal settlements as a temporary abode during a particular phase of their lives. This, however, presents a problem in that other than living in the same locality the people often have different interests with little to unite them and no sense of belonging at all to the settlement. This may affect the implementation of the DRA.

Other findings of this research have shown that the lack of social integration and coordination in the informal settlements in both Zambia and South Africa in general can be blamed on organisations existing and working in these areas, which often fail to link up with other similar organisations working in the same areas and with similar goals. As a result, efforts in the past to resolve sanitation problems in the informal settlements have often been disjointed.

The issue of HIV/AIDS was pointed out by a number of respondents as having a negative impact on community organisation and programmes. Many households with patients suffering from HIV/AIDS claim that they spend most of their time tending to their sick relations and have little time to participate in community projects. Both Zambia and South Africa are among the top five countries worst hit by the HIV/AIDS scourge and the two governments have recognised it as a multi-sectoral development issue in need of urgent attention. Both governments are currently spending vast amounts of resources on curbing the problem and ultimately at the expense of other services. HIV/AIDS makes other priorities, such as participatory activities, seem less important. The HIV positive people also feel that they do not have any incentive to participate, especially due to the stigma attached to them. AIDS has also claimed the lives of skilled sanitation agency staff that the agencies find difficult to replace, especially with the low salaries on offer.

There are still no clear lines of communication between government agencies and communities despite the existence of community based organisations. Many agencies still ignore the informal settlements as if all of them are still illegal due to the severity of problems faced there and do not make any attempts to change the situation. The study also noted that the inadequate information flow between policy makers and grass root implementers has also worsened the situation. Local Councillors who could be a useful link between communities and local authorities have a very poor record with communities because of their political inclinations and misrepresentation of community priorities. Without the active involvement of these constituencies, it seems unlikely that the DRA methodology can be successfully implemented in urban poor settlements.

In some cases the study found that there are existing institutional units that are supposed to deal with service provision to the urban poor but such units are normally understaffed and lack the skills to coordinate with other departments or institutions. An example is the Peri-Urban Section at the Lusaka City Council, which has a clear mandate to address development projects in the informal settlements of the city but, due to understaffing, lack of skilled manpower and financial problems it has been unable to fulfil its mission. Obstacles are also encountered due to the lack of interest, knowledge and commitment to sharing in the implementation of the DRA methodology.

In the absence of technical support from local authorities and other agencies, communities have remained poorly organised, making it difficult for them to be engaged in the process of selecting, financing, implementing and managing of sanitation facilities based on expressed demand. The lack of capacity at local authority level has further exacerbated the problem.

4. Technical Issues

A distinctive feature of the demand-oriented programmes is that users are allowed to make choices from a range of options that are tailored to communities' willingness to pay (Garn, 1998; OneWorld, 1999; Cotton & Saywell, 1998). However, the study found that the limitation in technological choices in urban areas by town planning regulations has a negative impact on the DRA implementation in that it limits poor households to expensive water and sanitation systems. This issue is compounded by the bad physical locality of many informal settlements in both countries. The rocky conditions of settlements like Kanyama in Zambia and Jeffsville in South Africa may make it impossible for the construction of more affordable systems such as VIPs. In South Africa vast amounts of money have been spent on inappropriate technology and western-type services that only meet the needs of the few. Meanwhile, the local authorities face financial problems and the use of expensive technologies erodes the possibility of servicing more communities using the few available resources.

There is political pressure to provide as many water and sanitation facilities as possible within a limited time and of a particular technology. Donor organisations have a similar tendency to put emphasis on the number of water sources and toilets built using their money without any serious regard for community participation or sustainability. The donor and government interference in the way services are provided to the poor communities is a barrier to the DRA implementation because it removes the possibility of community participation in the choice and in the running of sanitation projects.

The issue of technical choice is therefore one of the major hurdles to the implementation of the DRA in urban poor areas due to the insistence by the local authorities to provide only waterborne toilets, which are unaffordable to the majority of the poor. This effectively limits the community or households to only one form of technology even if they may not have the ability to pay for it. Archaic laws must therefore be repealed and others updated to reflect the current situation.

5. Institutional Issues

To maximise the impact and sustainability of water and sanitation programmes, institutional aspects need to be addressed comprehensively, as part of a collaborative approach with collaborative partners (DFID, 1998). The study found that coordination of multiple institutions or departments in water and sanitation provision is often problematic due, as already identified in the literature and the institutional surveys, to jealousies, misunderstandings and different priorities among different institutions and departments. Sanitation provision, for example, spans sectors and the absence of key brokering or

coordinating institutions has led to serious service problems. Absence of a specific institution or department with the responsibility for sanitation provision to the poor results in their being left out. Budget constraints also foster intense competition between various departments and this often motivates against cross-departmental cooperation. The poor coordination of departments dealing with the provision of sanitation is an obstacle to the implementation of the DRA because the contributions of all those departments are vital to the smooth running of successful sanitation programmes.

A further problem in South Africa is related to the favouring, maintaining and relying upon the pre-existing civil service. The governing party in South Africa, the ANC, inherited bureaucrats from the apartheid era, who have often been either passively or actively resistant to implementation of certain policies of the new government. Furthermore, the bureaucracy itself is not flexible enough to deal with policies such as the demand responsive approach.

The survey also revealed that both South Africa and Zambia are undergoing a transformation in their water and sanitation sectors. Transformation is, however, a complex process needing a range of skills which are currently in short supply in both countries. There is very little understanding of the role and function of local government in relation to other levels of government and there are very few interactions between the various line departments. There is also still very little understanding of how to communicate new responsibilities and their implications to senior management and the local council and of how to be accountable to customers within a service delivery framework. These challenges are great even for the most skilled staff and councillors, so several years of training and promotion are required for the necessary capacity to be developed before the legal requirements will be effectively fulfilled. Under such circumstances, it is almost certainly impossible to implement programmes using the DRA methodology due to its complexity. The South African local government structure, has for example, been undergoing changes since 1994; the changes have been so great that many local authorities are still struggling to cope with the new expectations.

Many decisions made at central government level are not implemented due to the lack of resources to implement the decisions, demonstrating the weak linkages between policy and resources. There is no legal framework and no effective strategies to guide the provision of water and sanitation services to the urban poor communities.

The lack of capacity, coupled with poor administration and coordination at both community and sanitation agency levels, are major barriers to the implementation of the DRA, because it is interdisciplinary in nature.

6. Financial and Economic Issues

The DRA puts emphasis on the economic value of water and sanitation. The approach encourages a consumer-orientation to develop financially viable water and sanitation services. This study, however, showed that the Dublin principle that promotes water and sanitation services to be treated both as social and economic goods are difficult to achieve

in urban poor settlements. Unlike water, for example, sanitation is not considered to be of paramount importance to the communities due to the many alternatives (mostly unhygienic) that they have at their disposal. This low priority for improved sanitation inevitably leads to low demand for the service and ultimately to low willingness to pay for it.

Although the South African government promotes the DRA in sanitation programmes, the study found that the government has reservations about the methodology due to its failure to cushion the poor households and due to its complexity. The provision of free water to poor households announced by the government in 2000 also confirms that they have realised that very few people can afford to pay for services. Other government departments such as the Department of Land Affairs have also moved away from the demand-led approach on the ground, although it remains official policy. The department claims that this move has been necessitated by the realisation that demand-led land reform was not reaching its intended targets, the poor. The reluctance by the central government to implement the DRA methodology in their programmes has serious repercussions on the lower tier government agencies that look up to the central government for direction and this has a negative impact on the implementation of the methodology.

While the contingent valuation method (CVM) has been heralded as a suitable tool for assessing the consumer's willingness to pay, it is also prone to bias because it does not test consumers' effective demand. In the surveys for instance, it was not possible to tell whether the respondents would actually pay the tariffs they said they were willing to pay for improved sanitation services. All the contingent valuation does is to typically aggregate data on demand and ability to pay for a range of water and sanitation options at either the household or community level, which may mask the significant intra-household variations in demand. The DRA is inherently linked to finance with an implicit assumption that 'demand' as expressed by poor communities can be equated to willingness to pay for a particular kind of service. Without reliable information about consumer preferences and their willingness to pay therefore, any attempts to implement the DRA are likely to fail.

For the DRA to work there is need for efficient cost recovery mechanisms in the communities. In both Zambia and South Africa, cost recovery measures are central to the governments' promise to provide household sanitation. Currently, however, cost recovery is very low in the two countries. At community level, there are problems related to the management of the cost recovery due to their limited capacity. The expectations of communities to manage financial transactions in sanitation projects may contribute to unsuitability of the DRA methodology in urban poor communities.

In South Africa, it was found that the legacy of apartheid has continued to haunt politicians and has made it impossible for them to stick to programmes that promote cost recovery. In the past the white minority had access to some free services or to other services that were heavily subsidised by the state. Consequently, it is has been difficult for the government to convince the black majority that in order for them to receive

services on a sustainable basis they need to pay for them. This has hampered many attempts by local authorities to provide services with cost recovery goals, as the DRA advocates.

Commercial utilities in Zambia have been created to take over the provision of services on a full cost recovery basis in line with the National Water Policy of 1994. These commercial utilities are, however, as yet untried and not fully operational and do not have a track record for service delivery. All the utility companies are staffed mostly by staff from local authorities of which the majority lack the skills to operate in a private environment. There is therefore a big possibility that these commercial utilities will end up under-performing like the local authorities and this might impact on the possible implementation of the DRA by these commercial utilities.

Significant challenges remain, particularly relating to financing arrangements at both community and institutional levels. A major barrier to the implementation of the DRA is the need to balance financial sustainability and poverty reduction objectives. Financial cost is already a significant barrier preventing many urban poor communities from accessing improved sanitation facilities. A key social issue being faced with the implementation of the DRA therefore is the reconciliation of the demand for improved sanitation services with a limited ability to pay among the urban poor consumers.

7. Conclusion

The overall findings of this study suggest that implementing the DRA in sanitation programmes in urban poor communities will remain an enigma unless a comprehensive analysis of all the factors that impede its implementation is undertaken at both community and institutional levels. In as much as all the barriers identified may impede the implementation of the DRA in urban poor communities, the main one is poverty. Households do not have the means to save and invest in sanitation programmes. This is highlighted by the following quotation:

> *"it is no use considering a person's demand for a good if he does not have the money or resources to realise it"* (Beardshaw and Palfreman, 1979).

This research therefore contends that the DRA, as it is currently formulated and promoted is not a feasible methodology in the implementation of sanitation programmes in urban poor communities. However, it includes some useful principles, which could be utilised in making water and sanitation programmes more sustainable such as community participation, clarification of roles and responsibilities and community contributions to sanitation.

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