DEVELOPMENT OF MODELS TO FACILITATE THE PROVISION OF FREE BASIC WATER IN RURAL AREAS

AF Balfour · I Wilson · J de Jager · DA Still · S Louw

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DEVELOPMENT OF MODELS TO FACILITATE THE PROVISION OF FREE BASIC WATER IN RURAL AREAS

Report to the
WATER RESEARCH COMMISSION

by

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The Mvula Trust

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Executive Summary

The Free Basic Water Policy was officially implemented in July 2001. The policy was rolled out in most urban areas on or near this date. However, in rural areas it was much more difficult, and there are many areas that have not yet seen the implementation of Free Basic Water (FBW). This is due to varying financial, technical, political and logistical problems at the local and district municipality level.

This research investigates the current situation in rural municipalities, looking specifically at FBW policy, institutional arrangements, operation and maintenance costs, cost per capita and affordability in relation to the Equitable Share allocations. Five case study areas were chosen: the uThukela Water Partnership (KwaZulu Natal); the Alfred Nzo District Municipality (Eastern Cape); the Ngqushwa Local Municipality (Eastern Cape); the Vulindlela Water Scheme (KwaZulu Natal) and the Nlhungwane Community Scheme (Kwa Zulu Natal).

From this research it is clear that Water Service Authorities (WSA) are at varying levels of implementation, with few having a fully operational policy that is reaching the rural areas. Some communities have not been informed about FBW and are still paying for all their water.

The institutional arrangements for FBW implementation are unique to each WSA, but a common factor in efficient, cost effective provision was noted to be the contracting of an organisation with the expertise and capacity to successfully manage water provision within a budget. An example of such an arrangement is found in the organogram below:

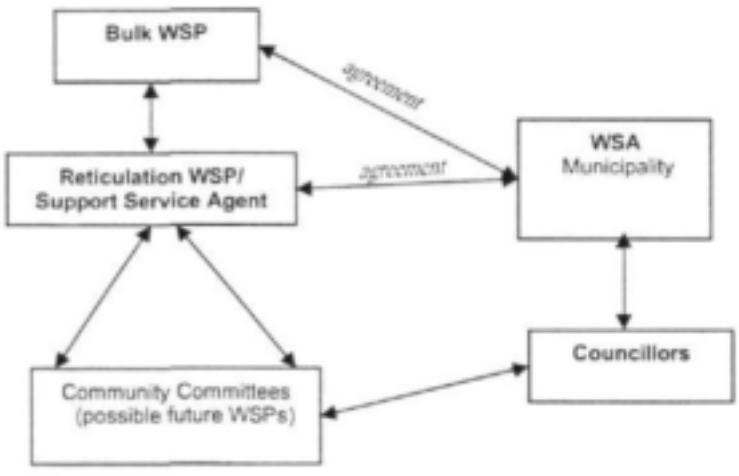

Figure 1: Cost effective institutional arrangement for water provision

For each case study area the operation and maintenance costs were determined (as far as possible), and from this, the cost per capita per month for water provision. One recurring cause for concern was the lack of asset replacement costs in WSA budgeting. This will cause a major problem in the future when infrastructure needs to be replaced. It was noted where a WSA had not developed a FBW policy an ad hoc, unreliable operations and maintenance system tended to be in place, with higher costs than encountered where a

reliable, comprehensive service was provided. This highlights the need for WSAs to prioritise FBW, regardless of their budget restraints, as FBW-by-default could result in greater expenditure than if the time, resources and budget are allocated for the development of a sound FBW policy and implementation strategy.

There was a large range in costs per capita, with a trend that showed the influence of economies of scale. This is illustrated in the graph below (Figure 2) that shows the benefits of a water service provider covering a large population.

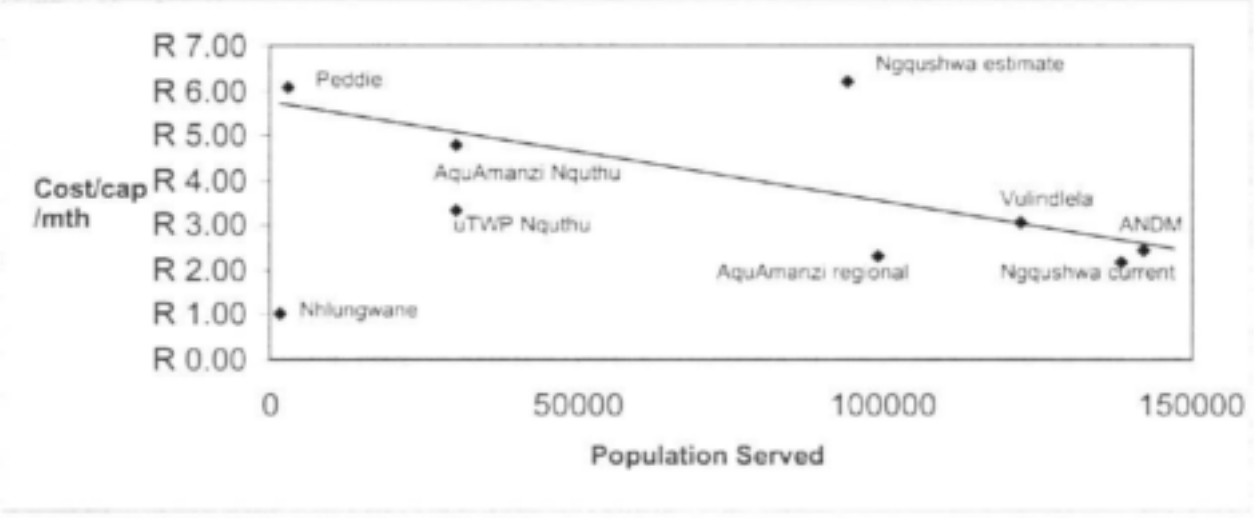

Figure 2: Correlation between cost per capita and population served

The median of these per capita costs was used as a recommended cost per capita to which WSAs could align their budgets. This cost has proven to be attainable by service providers in different environmental, financial, social and political environments encountered in this research. This recommended cost per capita per month is as follows:

R3.51 (operations and support) + R2.33 (asset replacement)
= **R5.84** Total cost /capita/month (in 2004/2005 value)

For poor rural areas the affordability of FBW is primarily determined by the Equitable Share (ES) allocations. These allocations, when compared with the median cost calculated above, show that the ES allocations are insufficient to cover the operation and maintenance costs in all but one of these rural areas. Table 1 shows the portion of the ES that is allocated by National Treasury for the supply of water and divides this grant money (at R5.84 per capita per month) by the population served by the water service provider. The last two columns show the percentage of the population that the grant can cover, and the percentage cover that is currently required at reported indigence levels and service levels. This shows that even if it is taken into account that, for example, only 80% of the population *should* qualify for FBW, and that only 55% of the population currently have access to potable water, the ES is insufficient to supply for this portion of the population.

Table 1: Affordability of FBW

	ES allocated for water	WSA Popln (Census 2001)	Recommended Cost/cap/mnth	% cover possible at recommended cost/c/m	% cover needed at present levels of service provision and indigency
uTWP	R40,986,809	1 581 480	R5.84	37%	43%
Alfred Nzo DM	R35,699,689	550 389	R5.84	93%	57%
Ngqushwa	R2,984,680	84 229	R5.84	51%	60%
Vulindlela (uMsunduzi)	R13,673,977	553 223	R5.84	36%	48%

However, the situation at Alfred Nzo DM is encouraging, and should be a motivating factor to other WSAs to implement FBW formally within their entire jurisdiction. The reasons for the high ES grant to the Alfred Nzo District Municipality are most likely: accurate indigence statistics and a high level of FBW implementation. The Free Basic Services Grant is determined by the number of people actually being provided with the services. Therefore, as the other WSAs increase their levels of provision, the grant allocation will increase. However, the problem of differing indigence statistics is more difficult to rectify. National Treasury only supplies grant finances for the indigent households as determined by the latest Census statistics. These statistics differ significantly from the indigence statistics used by the municipalities in this research. An example of this problem is demonstrated in uMzinyathi DM, one of the DMs in the uThukela Water Partnership: Census 2001 gives and indigency level of 72%, while the Water Services Development Plan for the DM gives an indigency level of 93%. This discrepancy translates into approximately 100 000 people that are not provided for by the ES.

These problems with affordability highlight the need for WSAs to have effective and efficient cost recovery systems that ensure payment for water by those that are not poor, and by all users who consume more than the free basic allowance. Cost recovery was a noted problem in each of the case study areas and needs practical and politically acceptable solutions if FBW is to be sustainable.

Free Basic Water in the rural areas of South Africa is difficult, but possible. With good management FBW could be sustainable in the long term as long as national government provides sufficient levels of Equitable Share revenue to municipalities. From the lessons learned in this research, the key factors in successful implementation are: good planning; the honest assessment of the WSA capacity and the consequential contracting of experts to fulfil the roles and responsibilities they cannot; political support for FBW policy; and accountability.

Terms of Reference

In 2002 the Mvula Trust was appointed by the Water Research Commission to investigate the lessons which could be learnt from the roll-out of Free Basic Water to South Africa's rural areas. The objectives of this research were as follows:

1. Investigate various emerging Free Basic Water institutional arrangements and implementation approaches;
2. Investigate the success of these approaches and arrangements if already implemented;
3. Assess the real costs of providing the water at project, support agency, and municipality level;
4. Investigate the availability of funds and the channelling of those funds;
5. Make recommendations for suitable, cost-effective arrangements for FBW provision; and
6. Make recommendations for the successful transfer process to FBW.

Table of Contents

List of Figures

List of Tables

List of Appendices

1. Introduction

On the 19th September 2000 Mr Ronnie Kasrils, the then Minister of Water Affairs and Forestry issued a press statement announcing a Free Basic Water Policy. Five months later, on February 14 2001, he explained what the policy would mean and announced that 6kl per household per month would be free. This would be funded by using equitable share allocations from the national treasury, and by using cross-subsidisation. The date for implementation was given as 1 July 2001, coinciding with the first financial year of the new local municipalities. This was qualified by the statement that although this was the official date, water users would need to continue paying until they were informed by their local council of the actual implementation in their area. The policy was duly implemented in urban areas without much difficulty. However, rural areas were much more difficult, and to date there are many areas that have not yet seen the implementation of Free Basic Water (FBW). This is due to varying financial, technical, political and logistical problems that local and district municipalities have not had the capacity to overcome.

As a part of a focus on capacitating local government, a total of 237 local authorities attended workshops across the country. From these studies and workshops the Department of Water Affairs and Forestry (DWAF) published *Free Basic Water Initiatives: Guidelines for Local Authorities* (2001) and the Palmer Development Group published the *Free Basic Water: Implementation Strategy Document* (March 2002). Provincial Support Units were also established with the aim of providing financial modelling, technical assistance, and reports on the progress in different municipalities. These reports would then be used to monitor implementation and develop a 'best practice' report so that experiences could be shared between local authorities (speech by Ronnie Kasrils, 2001). Furthermore, in August 2002 the Department of Water and Forestry (DWAF) published a document that was prepared by Partners in Development titled: *The Implementation of Free Basic Water in Remote Rural Communities: Strategy and Guidelines.*

In 2002, the Mvula Trust working with the Water Research Commission began a research project that aimed to help record and share the implementation experiences in various municipalities. Specifically, the objectives of this research were as follows:

1. Investigate various emerging Free Basic Water institutional arrangements and implementation approaches;
2. Investigate the success of these approaches and arrangements if already implemented;
3. Assess the real costs of providing the water at project, support agency, and municipality level;
4. Investigate the availability of funds and the channelling of those funds;
5. Make recommendations for suitable, cost-effective arrangements for FBW provision; and
6. Make recommendations for the successful transfer process to FBW.

The investigation of the FBW arrangements in the different regions was done primarily through an interview process with key individuals who then provided documentation from which to assimilate the case studies. The focus of the research was on rural areas due to the challenges which have been highlighted regarding the rollout of FBW in these areas. From the initial investigation into institutional, administrative and financial arrangements it is clear that the areas are in varying stages of implementation and that each has a unique strategy.

2. Literature Review

Against the trend: Subsidies and state-driven service delivery in South Africa.

Stephen Louw[1]

2.1 Introduction

The post 1994 South African government has sought actively to extend the footprint of water services beyond the urban towns and cities to include the millions of citizens living in underdeveloped urban, peri-urban and rural settlements. Central to *all* of the various programmes designed to overcome this legacy, especially those focussed on the provision of water to marginalised rural communities, has been an emphasis on community participation and cost recovery (RSA 1994, 1997a, 1997b, 1998). Whilst these latter have been interpreted differently within the sector, the central assumptions are clear: communities should be able to influence the design of the project (including the choice of appropriate technology and level of service) and the manner in which the project was to be run (e.g. through onsite, community based; or external, "professional" management, as appropriate). Significantly, communities were also expected to contribute to the full cost of providing water services, although this was understood typically to include only operating and maintenance rather than initial capital expenses. Projects that were designed and managed exclusively by external agents were deemed inappropriate to the democratic ethos of the new South Africa, and to the principle of people-centred development said to inform post-apartheid reconstruction. Projects that were funded exclusively by external agents were seen to disincentivise community participation and to jeopardise the long-term sustainability of water provision.

This approach was in keeping with international best practice, which, in light of the disastrous experiences of state-funded water projects in the 70s and 80s (O'Hara and Hannan 1999; McCommon, Werner and Yohalem 1990), and on the basis of detailed fieldwork studies that suggested *consistently* that even the "poorest of the poor" were willing to contribute toward water projects if they were assured a reliable water source (see, for example, the studies by UNDP (1999b); Mehta (2003) and Ahmad et. al. (2003)). Importantly, the emphasis on cost recovery corresponded closely with other aspects of SA government policy, especially the shift from a top-down emphasis on satisfying basic needs towards a bottom-up emphasis on sustainable (market related) development anticipated by the GEAR macroeconomic policy (c.f. Nattrass1996).

Whilst well received in development circles, the policy enjoyed little success in South Africa and it was clear that, by 2000, very few urban and almost no community-based schemes were sustainable. Most relied on ongoing external support. It is not the place of this review to examine the reasons for this "failure" (for one approach, see Louw 2003). Issues at stake include the virtues of community participation in a context of massive services backlog, political willingness to enforce cost recovery, administrative efficiencies and, paralleling the debate over GEAR, the considerable differences that exist within the ruling party over approaches to economic development itself.

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Although it is probably fair to suggest that critics have overestimated dramatically the extent of water cut-offs – the most widely cited study (McDonald and Pape 2002) has had to be withdrawn by the publishers as its claims have been shown to be fallacious (c.f. Muller 2004) – it is clear that an insistence on cost recovery imposed a significant burden on many poor communities and diminished the vote banks upon which politicians relied. This is the background to the announcement - by then Minister of Water Affairs and Forestry, Ronnie Kasrils, in the run-up to the December 2000 local government elections - which the government intended to provide "free basic water" to all citizens.

The commitment appears to have caught senior DWAF officials off guard, as it was not preceded by a sustained analysis of extant policy in South Africa or elsewhere in the developing world. Certainly, given the extent to which this new policy, which necessitates considerable top-down state control and ongoing subsidies, it is surprising that no explicit reasons were given for the overnight abandonment of the "international best practice" approach that was once so loudly championed by DWAF. At the very least, it is troubling to note the virtual absence of attempts to explain the conceptual underpinnings of the policy shift, or to explore the implications of a state-led subsidy programme for the remaining pillar of state development policy: community based development.[1]

Government insists however that the FBW policy is not simply a populist election ploy, or a palliative measure intended to cover up widely publicised failures in its community water supply programme. Rather, FBW constitutes an extension of existing policy commitments, notably the tariff setting provisions in the Water Services Act 108 of 1997, which specifically precludes the denial of access to service to those who cannot pay for them (Sam 2002). Because earlier attempts to develop community-specific indigent policies were not always as successful as they should have been, there is a need for a more comprehensive, nation-wide, assurance of a lifeline supply of water to those who cannot afford to pay was required (DWAF 2002a).

The free basic water policy is thus of considerable importance, not just for South Africa but for development theory in general. If the policy can be made to work this will demonstrate that India and most other Asian countries, as well as countries throughout Africa and Latin America, were too hasty to conclude that their post-war subsidy-driven models had not only failed but had systematically undermined

rather than raised the standard of living of the rural poor (for an extensive discussion of this point, see UNDP 1999a).

[1] The one explanation commonly cited, that Minister Kasrils was shocked to encounter an elderly rural woman who was forced to drink water from an unprotected source because she could not afford to purchase water from a community standpipe, is hardly evidence of insightful conceptual thinking. Although government did previously insist that people pay for the operations and maintenance (not capital) costs of rural water schemes, this was always made contingent on the existence of an indigent policy. Why this example should trigger a re-think of the principle of cost-recovery *per se*, as opposed to a review of the manner in which indigent policies were – or, more correctly, were not – put into place, deserves an answer. Moreover, at least one writer has claimed that the women whose plight so touched the Minister was indeed entitled to water from the community water project, but that she chose to collect water from an unsafe source as it was located closer to her house instead.

It is our very modest hope that this review, and the broader study of which it is part, will contribute in some small way to our understanding of the impact that a state-driven subsidy programme in a developing country is likely to have on poor and marginalised communities.

2.2 A "basket of free services"

Minister Kasrils' promise to provide free water proved popular, and the ANC soon extended this to include an extensive additional array of "free basic services", including electricity, sanitation and solid waste. To date, considerable success has been achieved in the provision of water and, to a lesser extent, electricity. Sanitation and solid waste still need to be addressed.

In this section, we begin by setting out, briefly, the *intended* consequences of the free basic services policy. This is important for two reasons. Firstly, obviously, we need to understand aims and objectives before we can assess impact. Secondly, a standard criticism of state intervention and attempts to regulate the market – which is what we are dealing with here – is that the intervening authority is never able fully to anticipate the consequences of interventionist policy (c.f. Hayek 1944, 1963). Thus we need to consider some of the *unintended* consequences of market intervention. A classic example of this applies to price fixing and agriculture: if government sets prices for cereals in order to keep prices low, do farmers provide foodstuff at these prices or do they either withhold their goods from the market or shift resources into livestock production instead?[2] Here the likely consequence of intervention is a decline in supply and, inevitably, the emergence of a black market in cereal products. Alternatively, if government attempts artificially to fix the end-prices for medicines, will pharmacists stop providing medicines to low-volume rural consumers or simply close down their operations and immigrate?

It is thus vital that any attempt to understand the impact of the FBW policy in South Africa is measured against the unintended consequences of attempts to control the price of water exogenously (i.e. outside the market).[3]

Having considered the intended consequences, we discuss the policy itself. In §2.2 we consider the anticipated levels of free service provision. Thereafter we limit our focus to water, and examine the different ways in which the local state is expected to implement and fund this policy (§2.3). Finally, we consider the extent to which the policy has been implemented to date (§2.4).

2.2.1 Why free services? Intended consequences

> "...the provision of free basic amounts of electricity and water to our people will alleviate the plight of the poorest among us" (Mbeki, cited in DWAF 2001b: 3).

[2] This was the basis for the famous "scissors crisis", which signalled the end of the NEP in the early Soviet Union, precipitating, in this case, a shift away from a state-regulated market to a command economy (Nove 1989: ch-4).

As suggested above, the arguments in favour of the FBW policy have yet to be set out systematically. At times, FBW is presented simply as a logical extension of the Water Services Act of 1997, whereas elsewhere, FBW is seen as a significant departure from the Community Water Supply and Sanitation programme, with its emphasis on demand-responsive development and community management.

In this section, we consider three sets of possible reasons for the free basic services policy. The first involves a defence of merit goods and positive externalities associated with non-market pricing; the second, an assessment of the benefits to public health; and the third, a state-sponsored lifeline to local authorities unable otherwise to provide basic services to the poor.

All of these approaches rest on a commitment to *some* form of exogenous (non-market) intervention in order to ensure an equitable distribution of resources. However none of these necessarily implies a commitment to this *specific* form of intervention. In other words, there is no intrinsic link between support for outside intervention in the market and support for the free basic services policy.

2.2.1.1 Merit goods with positive externalities

In economic theory, it is customary to identify a category of "merit goods" in which a case can readily be made for outside intervention in order to help distribute intrinsically desirable goods more evenly than would be the case if distribution were left to the market. Increasing social marginal consumption of merit goods is seen as a public good *and* as a means to maximise positive externalities. In such cases, intervention in the market is justified as it increases the greater good.[4]

An example of this is clean air: the state intervenes to prevent polluters from restricting other people's access to clean air. Similarly, with some merit goods, the state intervenes to ensure that people have basic access to those goods needed to survive. Water is a common example of this type of good, and *all* post-1994 policy has involved, in one way or another, an attempt to provide "safety nets" to the poor by guaranteeing their right to access sufficient quantities of potable water to survive.[5] This applies both to the

policy developed under the (more market-centred) community water supply and sanitation programme and, more recently, to the (more state-centred) free basic services programme.

Providing intrinsically desirable services to all citizens maximises positive externalities. If the provision of water were left exclusively to the market, it is argued, many poor people would have inadequate water supplies. As a result, their lives would suffer. Poor people would be forced to devote increased resources

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[3] Although the free basic services policy has provoked considerable commentary, almost all of this is of a technical nature, i.e. how do we find and implement the policy. The only explicit attempt to identify unintended consequences is Still (2001). See also Jackson (2001).

[4] The classic example of a "de-merit" good is cigarettes. Here the negative externalities produced by the consumption of tobacco are said to justify external intervention (e.g. taxes) in order to minimise consumption.

[5] It is necessary to emphasise this point. The community water supply and sanitation programme, which lay the foundation for post-1994 policy, began by endorsing the right for all to have access to water and, despite its strong emphasis on cost recovery and market pricing for water, insisted on the need to combine this with an indigent policy able to ensure that the poor had a lifeline access to water. This point is missed deliberately by state-centred left critics who reject all policy prior to FBW as nothing more than a defence of market pricing (c.f. the various contributions to McDonald and Pape (2002)).

(money, labour, time) to collecting water from remote locations and treating sick family members that have been exposed to waterborne contamination. This would undermine still further their productivity and diminish their ability to add to their pool of available assets. By contrast, if basic amounts of water were provided, the overall positive impact on the community, through lower health costs and increased productivity would outweigh the economic cost of providing water.[6]

Thus the first general reason why the government hopes to provide free basic services to all citizens is that these are merit goods with positive externalities. In one of its first FBW policy documents, DWAF expressed this argument clearly: "There are well recognised public health and well-being; equity and welfare; and gender reasons for ensuring that households have access to a basic level of water supply that is affordable to even the poorest households" (DWAF 2001b: 4).

2.2.1.2 Improve the quality of public health

Improving the quality of public health constitutes a second (possible) intended consequence of the FBW policy (Still 2001: 3). Although this is related to the discussion above (improved health has a positive benefit which would not ordinarily be factored into the price of water), it is often used as an independently justification for the provision of free basic services (particularly water and sanitation), especially after the outbreak of cholera in KwaZulu-Natal in August 2000.

Whilst assessing the provision of merit goods entails a *quantitative* evaluation (how many people have access to free basic services), this implies a *qualitative* evaluation (how many people have benefited from improved access to services, and in what way has this impacted on their lives). There is, however – contrary to some assertions (Deedat and Cottle 2002; Hemson 2003: 3-4) – no automatic reason why a simple improvement in the quality of water would diminish communal vulnerability to cholera if this supply-side measure is not accompanied by a qualitative change in behavioural patterns (improved hygiene and a reduction in oral-faecal contamination).

Thus, in addition to counting the number of people receiving free basic services, it is necessary to consider the improvement in the quality of public health care to which this latter gives rise. This is a difficult challenge. As Still points out, "where the reduction of water-borne disease is concerned, it is well known that improved water supply is but one of three requirements to break the oral-faecal disease transmission route. The other two are improved sanitation and behavioural change" (Still 2001: 6).

2.2.1.3 Help build the capacity of the local state

There is little to be gained by downplaying the crisis in local government capacity in South Africa. Local government, in particular, is, with very few exceptions, incapable of fulfilling its constitutional obligation to deliver services effectively to all citizens. Municipalities are often bankrupt, staffed by inadequately trained

[6] For an elaboration of this argument, which seeks to go well beyond the provision of FBW and decommodify water entirely, See Pape (2002).

and poorly motivated personnel, and fractured by bitter internal political conflicts[7]. Such problems are especially acute in rural and peri-urban communities.

In the water sector, the crisis in government capacity is exacerbated by the fact that responsibility for water projects, including those set up by DWAF under the aegis of the community water supply and sanitation programme, have recently been transferred to local authorities. If these authorities are not able to function efficiently, then this is likely to undermine the implementation of FBW policy.

Sadly, there is a growing body of evidence that suggests that a significant percentage of post-1994 rural water schemes have failed, and are no longer providing safe water to communities. In a recent briefing to parliament, it was reported that a study of KwaZulu-Natal had revealed that whilst 78% of rural water projects sampled "were working at one level or another", only 44% of projects were able to deliver water at the stipulated RDP standard. Moreover, it was found that only 22% of rural projects, less than one in four, were sustainable as standalone projects. The others relied heavily on ongoing external support, contrary to their initial project design and the intentions of the Community Water Supply and Sanitation programme (Hemson 2003).

Other studies have shown that, even where rural water projects are able to recuperate their basic operating and maintenance costs, they are not able to save sufficient money to plan for sudden expenses or the replacement of capital equipment over time (Still 2001: 9).

The equitable share payments made to local authorities since 1988 are clearly intended to address this problem in government capacity. In rural and peri-urban municipalities, the equitable share is the primary means of financing the provision of free basic services (see §2.3.2).

In short, the argument here is that the decision to promote a free basic services policy is motivated in large measure by concerns that neither local government nor the various water projects established since 1994 are able to provide essential services to citizens. Free basic services supported (and in large measure funded by) national government are thus as much a response to the crisis in local government as they are an attempt to promote equity.

A fourth intended consequences of the FBW policy, then, is to provide the external assistance necessary for local government to meet its constitutionally prescribed developmental obligations.

2.2.2 Defining free basic services levels

Having considered some of the reasons for and intended consequences of the free basic services policy, it is necessary to consider the policy itself.

[7] This statement is based on a detailed survey of councillor and official opinion in 28 municipalities (category A, B and C) in 2002 and 2004 (see Frankel, Lagazio and Louw; Frankel and Louw 2000)

2.2.2.1 Free basic water

It is suggested that 6000 litres (6 kl) of potable water be supplied free of charge to a household of eight per month. This amount constitutes "a 'basic' level of water supply sufficient to promote healthy living", and is an extension of the 25 litre per day standard proposed by the World Health organisation (Sussens and Sam 2001). This is already the basis for the so-called RDP standard, which serves as a basis for community water projects.

Significantly, the amount is intended to serve as a guideline, and local authorities have "some discretion" in determining the quantity supplied. "In some areas, they may choose to provide more,[8] while in other areas only a smaller amount may be possible. For example, in some remote areas with scattered settlements, and in water stressed areas, it may not be feasible to provide this amount of water. In such cases, a 'basic' level could relate to what is possible using the technology that best serves the area (such as handpumps or boreholes" (Sussens and Sam 2001: 2; DWAF 2002a: 3).

This rider is important, as nearly all municipalities operate within extremely constrained financial parameters, and have limited resources with which to achieve this national policy objective. DWAF insists that, in cases where municipalities have to choose between implementing the FBW policy and using scarce funds to provide water to households without any current supply, "local government will act responsibly if they prioritise households with no basic supply" (Sussens and Sam 2001: 3).

2.2.2.2 Free basic sanitation

Basic levels of appropriate sanitation have been defined in a number of policy documents, from the RDP through to the White Paper on Basic Household Sanitation, which was published in 2001 (RSA 2001), to imply a dry (i.e. non-flush) on site system, usually (but not necessarily), a ventilated pit latrine.

However the social, political, economic and institutional parameters within which free basic sanitation is to be implemented have yet to be established, and very little progress has been made in implementing the free basic sanitation programme. The only cases in which this has been implemented involve an extension of the amount of water provided free under a rising block tariffs system (i.e. to extend the amount of "free" water from 6kl to 9kl). However this has relevance only to households with piped water and flush toilets: a small category of the relatively affluent, rather than the poor who are supposed to be targeted by the FBS policy.

This is not to imply that sanitation is not taken seriously. On the contrary, DWAF has increased dramatically its focus on rural sanitation in the past three years. Building toilets is not, however, the same as introducing a free basic sanitation programme, and much work has to be done for this latter to take effect.

For the most part, the free basic sanitation programme is likely to entail the provision of operating subsidies to poor households. Six main options for providing free basic sanitation have been identified, namely:

- "A rising block tariff linked to water consumption (with a free basic amount to all consumers within the first block)
- Setting the sanitation tariffs as a proportion of the water bill
- Targeting credits or subsidies
- Incorporating sanitation with property rates
- Service level targeting
- Using a charge based on plot size (with a zero rating for properties under a determined threshold)" (DWAF 2004a).

In addition, Muruvan (2002: 3-4) identifies a seventh approach:

- "Geographical (zonal) targeting."

The last option is significant, as it is perhaps the only method that is appropriate to the rural poor. Although in cases where sanitation does not involve any significant operations and maintenance costs – in other words, with dry, on-site systems – there is very little need for ongoing subsidy-based support.

In some (largely urban) cases, by contrast, where households have waterborne sewerage, free basic sanitation has been interpreted simply to imply an additional amount of free water for flushing (typically an extra 3kl a month) (Sam 2002; DWAF 2001a: 10). In rural areas, which typically have very little if any sanitation infrastructure, the policy is much harder to define.

The free basic sanitation debate has moved on but little literature is presently available. The core issue is that most of the options are simply not affordable in the majority of cases without major additional funding.

[1] In Douglas in the Northern Cape, an amount of 10kl has been established as the FBW standard "due to the local climate" (Palmer Development Group: 2001e: 5).

2.2.2.3 Free basic solid waste

Responsibility for this falls under the Department of Environmental Affairs and Tourism (DEAT), which has not yet formulated a policy for the provision of free basic solid waste services. DEAT has however formulated new policies for the setting of solid waste tariffs (Sam 2002: 3).

2.2.2.4 Free basic electricity

This is the responsibility of the Department of Minerals and Energy, which is in the process of formulating a policy for free basic electricity.

2.2.3 Funding and providing "free services"

FBW policy is best understood as a right-wing structuralist approach to development. That is to say, in this policy municipal services like water are still treated as commodities, although the pricing of these commodities will not be left to the market alone. Instead, it is argued that the government should intervene to fix prices in accordance with stated political objectives. The market, it is hoped, will be made more palatable by an interventionist government.[9]

The organ of state responsible for implementing FBW is local government, which has been given considerable scope to adapt the policy to local realities. This includes defining appropriate levels of subsidy support – 6kl is a recommendation only – and appropriate delivery mechanisms.

National government, primarily through DWAF, working in conjunction with the Department of Provincial and Local Government (DPLG), the National Treasury, and the South African Local Government Association (SALGA), supports the provision of free services through its "Free Basic Water Implementation programme." This includes the development of FBW strategy, Local government Guidelines and tools, piloting of the FBW strategy, and holding workshops with local government (Sussens and Sam 2001, 2002).

In recognition of the lack of capacity in many local authorities, DWAF has established nine FBW Provincial Support Units to provide financial modelling and technical assistance to weak local authorities. The support units are also expected to monitor and evaluate the implementation of FBW policy across the country.

To support the policy, DWAF has developed a number of Guideline documents (DWAF 2001a, 2001b), much of which has been incorporated in a boxed information kit, which has been widely distributed to local authorities and relevant stakeholders (DWAF 2002). These documents provide guidance on the key concerns raised by local authorities, including the institutional framework within which FBW is expected to be provided, costing FBW, the relationship between FBW and other poverty relief measures, pricing policies, financial arrangements with water service providers, and management arrangements needed to ensure sustainable delivery.

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[9] The term, right-wing structuralist, is borrowed from Teddy Brett (personal communication). This should be distinguished from left-wing structuralists, who seek to use the power of the state to overcome the constraints of commodity-production and shift to a planned economy (see Pape 2002 for an application of this to the SA water debate), and neoliberals, who believe that nearly all commodities should be priced freely by the market. The community water supply and sanitation programme occupied an interesting position somewhere between the first and last of these alternatives.

In particular, DWAF acknowledges that, for the most part, current and future service levels will determine the application of the FBW policy. Thus their various guidelines for local authorities pay particular attention to the technical options appropriate to the service levels found in different communities (DWAF 2001a: 7-8).

The "Information kit for free basic water implementation in South Africa" developed by DWAF (2002) has been widely distributed, and provides most of the essential information local governments need to begin developing an FBW policy.

The implementation of FBW policy was initially divided into three phases: The first, from Jan to April 2001 being the strategy phase; the second, from April to June 2001 the planning phase; and the third phase, the implementation phase, lasting from April to June 2003.

Central to the implementation of FBW – and this phase has clearly just begun – is the need to finance the cost of providing a "free" service. This remains one of the major challenges facing local authorities.

In addition to tariffs, poorer municipalities are able to use money from the equitable transfer scheme to subsidise the cost of water. In this section we discuss, firstly, the tariff policies that might be used to fund "free" basic water (§2.3.1) and then the "external" source of funding available to municipalities (§2.3.2).

2.2.3.1 Tariff structures

The broad policy commitment is clear: working within the framework of a market economy, free basic services must be extended to the poor, and the tariffs that are established to achieve this must not threaten the financial sustainability of local government.

DWAF (2001: 4) identifies three "internal" sources of revenue for financing FWB.

- "surpluses raised within the water trading account by charging certain (non-poor) consumers more than the cost of providing the service to them
- surpluses raised from other accounts, typically from the municipal tax income, and
- district council levies raised from businesses (traditionally used for capital finance)."

The first of these is by far the most significant, and involves the establishment of appropriate tariffs to allow richer (or bigger) consumers to subsidise poorer (or smaller) consumers. This option is clearly only available in cases where there are richer or bulk consumers, and is inappropriate for many smaller and rural municipalities. However cross-subsidisation remains the most viable approach and is indeed compatible with governments broader concerns to promote equity through some degree resource redistribution.

Of concern though is the definition of cross-subsidisation. Should this apply only within the same local (category B) municipality, or should it extend to cross-subsidisation between various local municipalities within a district (category C) municipality? As the district municipality is the WSA, this is in effect, a political and economic rather than a legal question, however it is an important concern that is likely to impact directly on the financial viability of local economies: extensive redistribution will drive businesses away, whilst redistribution across large districts is likely to impose a disproportionate burden on small pockets of development (e.g. Umtata) surrounded by large rural areas.

The decision as to how to cross-subsidise, and how to set tariffs, is left to local authorities. In so doing, three tariff options are deemed appropriate (DWAF 2001a: 13-14; Sussens and Sam 2001; Sam 2002: 4-5), namely:

- Rising block tariffs.

This works well in urban areas where it is easy to monitor consumption. The first block is typically the specified amount of "free" water (6 kl), which is provided at a zero tariff. All or part of the cost of providing the free block is then recuperated through the pricing of successive consumption blocks.

One advantage of this approach is that it allows for easy cross-subsidisation, with wealthier consumers paying more for higher rates of consumption, allowing the municipality to build the price of "free" water into its overall tariff policy.

This approach is of relevance primarily to metros and bigger towns (B1 and B2 municipalities), with a high percentage of non-poor households and non-residential consumers who are both willing and able to pay for sufficient water above the 6kl threshold. In order to subsidise the zero tariff applied to the first consumption block, DWAF estimates that around 30% of residential customers would need to pay for an excess of 20 kl of water a month, and 20% of water sales to be made to non-residential consumers (DWAF 2001a: 14). Clearly, this rules out all but the most affluent and developed urban areas.

Significantly, this form of subsidy has proven to be effective in other developing countries, as it has limited impact on overall market pricing, it permits viable and transparent cross-subsidisation of resources, and is sustainable in that it is able to internalise the cost of subsidised service levels and need not rely on external support.

- Targeted credits.

This is a typical poverty relief approach, where selected consumers are granted credit on the water account sufficient to cover the stipulated amount of free water (6kl). This is appropriate only to consumers with metered connections.

This approach is best suited to smaller towns where the limited consumer base makes it difficult to promote rising block tariffs (which require a degree of cross subsidisation). To work, targeted credits require a proper indigent policy, something that is often either lacking or seen as too complex and expensive to implement for many small towns.[10] In most rural towns, targeted credits are simply too difficult to implement, unless this is done on a simply zonal basis.

- Service level targeting.

Whereas the two previous approaches subsidised payment for services, this approach restricts the amount of service to within the stipulated FBW amount.

This approach is appropriate for many rural areas where there are no individual connections or meters, and where supply is via a communal standpipe or source. Another advantage of this approach is that, unlike the two previous methods, service level targeting does not require a sophisticated billing system and is much easier for administratively challenged local authorities to implement. It does however require a viable metering and credit control system. A variety of sophisticated electronic flow limiters and flow restrictors are available to assist in this task (for a review, see Business Partners for Development 2002).

2.2.3.2 "External" sources of funding: The equitable share transfer scheme

DWAF acknowledges, correctly, that many (probably most) municipalities will not be able to use tariffs and municipal tax income to cover the full cost of FBW. Moreover, municipalities are prohibited by law from borrowing money to fund operating expenses. In effect, this means that many municipalities, especially in the rural and peri-urban areas, will rely heavily on external sources of funding, and that the FBW policy will be driven *entirely* by state subsidies. *If these subsidies are not sustainable, the policy will collapse.*

The main external source of funding is the equitable share transfer scheme, which is used by national government to help support poor municipalities unable to raise sufficient revenues through their existing tax bases.

In recognition of the fiscal crisis facing rural and peri-urban local authorities, and in keeping with its constitutional obligation to share revenues raised at the national level with other sphere/tiers of government, the national government introduced the idea of equitable share payments to local government in 1997. The first equitable share payments were made in 1998, and are intended specifically to help cover the recurrent operating costs of infrastructure set up to serviced the poor. Equitable share grants are calculated on the basis of the number of poor households in a community, and are only to be used to help provide services to these households. The Financial and Fiscal Commission responsible for making annual recommendations as to how revenues should be shared between the three spheres/tiers of government proposed specifically that transfers may not be used to finance the provision of services to households that can afford to pay for services (Hazelton 2004).

[10] Guidelines for identifying and targeting poor consumers are set out in DPLG (1999).

The equitable share can be divided into three components: the S-grant, the I-grant, and the free basic services subsidy. The S-grant is intended to cover the operating (not capital) costs of providing basic supplies of water, sanitation, waste removal and sanitation. These are the same basket of services that have subsequently been included in the free basic services policy. The greater the number of poor households in a community, the greater the S-grant (Hazelton 2004).

The I-grant is targeted at severely cash-strapped municipalities, and is intended to cover their basic administrative costs (Hazelton 2004).

The extent to which the equitable share will cover the cost of FBW varies from municipality to municipality. Initially, DWAF anticipated that, in most cases, only 30% of the S-transfer would be needed; although in especially disadvantaged areas, for example dispersed rural settlements, they acknowledged that the S-transfer would not be enough to pay the cost of FBW (let alone other free services) (Sussens and Sam 2001: 5). This is troubling, and the evidence so far suggests that many local authorities are having to run up huge deficits in order to continue supplying water. Although this problem existed prior to FBW, it has been exacerbated by increased demands for higher levels of service and the increased pressure on cost-recover that any promise to provide "free" services necessarily invokes.

The use of the S-transfer portion of the equitable share to fund free basic services is controversial for another reason. The fund is an essentially unconditional transfer, intended for the purposes of poverty alleviation (Muruvan 2002: 2). Although FBW falls within this general rubric, by forcing municipalities to allocate some or all of the equity share to this purpose, the central state is denying local authorities the opportunity to formulate their own poverty alleviation plans, or to allow local residents to determine their own developmental priorities (e.g., by increasing the supply of agricultural rather than drinking water). At least one commentator has suggested that this control over the uses to which an unconditional grant may be spent may be unconstitutional (Jackson 2001: 1).

2.2.4 Implementing the policy: urban success, rural challenges

Despite huge logistic and financial hurdles, many municipalities have managed to establish viable FBW policies within a short space of time, and it is claimed that 65.8% of the total population now receives FBW (DWAF 2004, figures cited for July 27). As a result, the number of citizens not receiving reliable water services has been reduced from an estimated 12 million in 1994 to a backlog of only 4 million (Muller 2004).

In this section we review, firstly, the aggregated published provincial and national figures for FBW implementation (§2.3.1). These figures present a useful overview, but offer little insight into how the policy is being implemented on the ground. It is thus necessary to consider in more detail some of the experiences faced by rural and urban municipalities (§2.3.2).

2.2.4.1 Implementing FBW – aggregated national and provincial figures

It is claimed that within the first municipal financial year of the programme (July 2001 to July 2002), 23 million people, over half the South African population (57%), were receiving FBW.

Since then, DWAF has extended the FBW footprint significantly, and reports the following levels of implementation.

Province	Total population served by FBW (n=46,553,296)	Population with infrastructure served by FBW (n=35,680,679)	Poor population served by FBW (n=29,378,792)	Local municipalities and metros providing FBW (n=262)
Western Cape	89%	91%	86%	97%
Eastern Cape	39%	55%	40%	94%
Northern Cape	66%	72%	77%	100%
Free State	97%	98%	92%	95%
KwaZulu-Natal	61%	75%	57%	100%
North West	63%	60%	47%	94%
Gauteng	96%	99%	87%	92%
Mpumalanga	44%	43%	13%	70%
Limpopo	46%	49%	19%	100%
TOTAL	**65.8%**	**73.8%**	**52.1%**	**94.7%**

Source: Compiled from figures cited on DWAF (2004a). Accessed 27/06/2004.

This is a tremendous achievement: within a very short space of time, DWAF has managed to extend FBW to almost two-thirds of the population, and almost three-quarters of all South Africans with infrastructure. Significantly, DWAF appears to have secured the necessary "institutional buy-in", and almost all municipalities are implementing the FBW policy in one way or another. However South Africa's legacy of institutional disparity poses a significant challenge to the organisations entrusted with implementing the FBW policy, and takes us to the heart of current debates about the sustainability and equity of subsidies.

Not surprisingly, when we examine the figures we find tremendous regional variations. Historically under-resourced areas lacking basic infrastructure are significantly less able to implement the FBW policy than areas with better infrastructure and resources. Thus we find that as few as 19% of the poor[11] in Limpopo

[11] Defining "the poor" is always difficult, and there is considerable disagreement within the development profession as to what indicators to use (income, consumption patterns, relationship to the vulnerability context, etc.) and what threshold to establish as a yardstick. It is significant to note that DWAF currently defines the "poor" as those earning an income below R1,000 (DWAF 2004), whereas at the onset of the policy DWAF used a considerably lower amount of R800 (DWAF 2001b: 5). Similarly, the equitable share transfers (discussed below) were initially set at R800 per month. This means that the reported statistics are based on a yardstick 20% higher than that used in the initial equitable share calculations. Given the inequities in access to infrastructure, which increase as we move down the income table, it is likely that the percentage of "poor" people receiving FBW would be considerably lower than the stated 47% were this latter definition (i.e. R800) employed.

and 13% in Mpumalanga are receiving FBW, compared to 92% of the poor in the Free State and 87% in Gauteng. In part, this stems from the problems associated with providing water in rural areas or to consumers receiving services from communal sources.

A total of 73.8% of the population that already has infrastructure receives FBW on a regular basis, although it is likely that the amount received and the arrangements made to deliver FBW vary tremendously. Of concern is the fact that this sector of the population, i.e. the sector that has sufficient infrastructure to allow for this form of subsidised service to be delivered easily, constitutes the relatively well off in South Africa – by a large margin. As we see below, one of the most widely articulated criticisms of subsidised service delivery is that, historically, it is the relatively well off rather than the poor that has benefited. The figures reported so far suggest that this is exactly what is happening in South Africa, with only half of the population defined as "poor"[12] receiving FBW services.

The overwhelming majority of FBW beneficiaries are thus likely to live in towns, receive services through established infrastructure, and earn sufficient income not to be classified as poor. The author of this review, for example, has benefited significantly from the policy, and now pays almost nothing for water as his total monthly consumption in a residential flat in Johannesburg is only marginally above the FBW standard.

This does not in anyway negate the tremendous achievement in South Africa to date: however it does sound a note of caution, and reminds us of the need to ensure that scarce government resources are not implemented in ways that disproportionately impact the better off in society

2.2.4.2 Implementing FBW – urban experiences

The primary target of the FBW policy is clear: the poor, including those who do not currently have access to potable water or who lack basic infrastructure. However, as we have seen, the majority of beneficiaries of the FBW scheme have tended to live in areas with some infrastructure, and earn more than R1000 per month. For the most part, these people are urban dwellers.

Clearly, the extent to which local authorities are able to implement the FBW policy varies according to their financial, technical, administrative and political capacity. For the most part, urban municipalities have attempted to cover the cost of FBW by adjusting tariffs, typically using a sliding scale or block tariffs,[13] and by experimenting with different methods of service level targeting in the (unmetered) rural areas within their jurisdiction (Palmer Development Group 2001b: 7-8).

In order to limit the economic drain of providing free services, urban municipalities have placed additional emphasis on the need to improve billing systems and credit control, and have been reassured by DWAF, and by a recent supreme court decision, that they are entitled to disconnect consumers who fail to pay for water over and above the FBW standard.

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[12] Defined as the "total national, provincial and municipal population with an income less than R1,000 a month" (DWAF 2004b).

[13] This is often dubbed the "Durban solution", named after the town in which the policy was first implemented.

There is, as yet, insufficient evidence with which to judge the success of this approach. Early studies suggested that large metropolitan municipalities like Tswane were concerned that they would loose considerable revenue if they implemented FBW in this way, and were experimenting with using the free basic water subsidy to fund their existing policy of offering rebates to people identified as indigents instead (Palmer Development Group: 2001a).

One of the problems encountered with the rising block tariff system is that it has tended to reduce total water demand. This has proven to be the case in Durban, resulting in a significant loss of income for the council (Palmer Development Group 2001b).

Mid-sized towns appear to be experiencing with a similar combination of tariff-based cross subsidisation and targeted subsidies in (metered) urban areas, and service level targeting in the rural (unmetered) areas (c.f. Palmer Development Report 2001c-). In Polokwane, for example, a sliding tariff structure is used in the urban core, coupled to an indigent policy credit system that is funded through the equitable share. However there is no structured subsidy system for their rural areas (Palmer Development Report 2001c). In Hermanus, a more complex distinction is drawn between "availability charges" for water, which are levied at different rates for "indigent", "sub-economic" and "economic" households, and a sliding scale for consumption, which applies equally to all consumers (Palmer Development Report 2001f: 5). Equitable share money is being used to help cover the cost of subsidising indigent and sub-economic households.

These attempts to use tariff based cross-subsidies are however dependant on maintaining relatively high levels of payment, as well as the capacity of the municipality to meter connections and bill clients effectively. Sadly, this does not always happen. Large metropolitan municipalities like Johannesburg have recently been forced to admit that their billing systems are in complete disarray, whilst in smaller towns, like Douglas in the Northern Cape, the problems are such that the municipality is not even able to meter its own consumption (Palmer Development Group 2001e: 5).

An additional problem encountered in most urban areas is a tendency for people to confuse (whether deliberately or by accident) "free basic" with "free" water, and to demand that water be decommodified entirely (Palmer Development Group 2001e: 8); 2001f: 6). This adds to already pervasive cultures of non-payment.

A common finding in areas where targeted credits are used is that the municipality has difficulty identifying beneficiaries. Indigent targeting is complex and bureaucratic, and, in many cases, people don't take advantage of the schemes in question and register for subsidised services (Palmer Development Group 2001c, f, h and i). This raises the need for municipal officials and councillors to be proactive in "selling" their policies to their constituents, and marketing the municipality and its policies more actively than is typically the case.

Until government capacity improves, it seems unlikely that any of the three methods available – rising tariffs, targeted subsidies, and service level targeting – can be implemented successfully. And until

payment for services from those expected to pay (i.e. who consume more than 6kl a month) is improved, urban municipalities run the risk of running up huge debts in their attempt to provide services in general, and free basic services in particular.

2.2.4.3 Implementing FBW – rural experiences

By far the greatest problems are encountered in the rural areas, where water provision is generally communal, unmetered, and, for the most part, is not paid for. Even where rural areas exist alongside more wealthy urban areas, there are only limited opportunities for cross subsidisation – especially as rural consumers are usually connected to stand alone community based water systems.

Developing new water systems in the rural areas means more than simply putting taps in the ground. It implies the development of new institutional mechanisms – local government, private sector run, or community based – able to manage projects and ensure long-term operations and maintenance sustainability. Historically, this has proven to be the most difficult task. It is hoped that the FBW policy can contribute to this task.

Part of the problem in implementing the FBW policy in the rural areas relates to the generally low consumption levels of residents. Most rural families using community standpipes consume less than 6kl a month. Thus it makes little sense to try and meter consumption and set tariffs accordingly. In such cases, it is easier simply to subsidise the cost of providing water.

When rural areas are connected to bulk water schemes, the cost of providing water to scattered settlements is usually very high. In Nkomazi, for example, it is estimated that providing water to the rural areas alone will consume 30% to 50% of the equitable share (Palmer Development Group 2001k: 3, j). The alternative to expensive bulk water schemes is on-site community-based water projects. However it is becoming increasingly difficult politically to support lower levels of service and demand-responsive models of delivery, which means that in the short run anyway, these are the sorts of costs that will have to be borne.

An additional problem encountered relates to the water committees that have been set up to manage community schemes. Although attempts have been made to define their precise role and their relationship to local government, this remains an area of considerable confusion. There is a real danger that the transfer of responsibility for water projects and the top-down manner in which FBW is applied will undermine the autonomy of water committees, which is likely to impact negatively on the sustainability of projects. If water committees are no longer expected to collect money for operations and maintenance expenses, then what is their function, and who can reliable expected to carry out repairs once the state assumes financial responsibility for the project?

As is the case in urban areas, FBW has had a negative impact on cost recovery. In uMsunduzi, for example, there has always been a problem with cost recover in the Vulindlela water scheme. Historically, payment levels were around 40%. With the introduction of FBW, the level of payment (for water in excess

of 6kl) has dropped to 10% (see Vulindlela case study). In part this is because of confusion between free water and free basic water; in part because local politicians have encouraged people not to pay for water.

Problems with cost recovery are a serious challenge in the rural areas, and threaten to derail the transfer of authority from DWAF to local government in the next few years (DWAF 2002: 5), or from public water companies like Umgeni to local government.

The problems facing attempts to implement FBW in the rural areas can be summarised as:

- Very weak local government
- Poor financial state of the rural areas, with limited possibilities for cross subsidisation
- Limited infrastructure
- Poor state of extant water committees
- Ill-defined relationship between water committees and local government

2.3 Conclusion: Four challenges ahead

The discussion and the case studies examined above point to a number of key challenges that must be faced if the government is to provide free basic services on a sustainable basis. These categories provide useful indicators against which the success of the FBW policy might be measured.

Firstly, as we have seen, the success of the FBW policy is tied intimately to the capacity of local government: effective water services, as DWAF acknowledges readily, requires effective local government (DWAF 2001a: 4). Unfortunately, to put it simply, we do not have nor are we likely to have in the immediate future, anything approaching "effective local government" in most of South Africa.

The weakness of local government does not only affect the intended consequences of the FBW policy. As we say above, there is a real danger that the provision of free basic services in South Africa will benefit the relatively affluent at the expense of the rural poor. All available evidence suggests that this has been the case in countries like India, which has attempted to provide free basic services for the past four decades (UNDP 1999a). Typical reasons for the failure of subsidy driven programmes include the inability of the government to meet the rising costs of subsidy provision; a tendency for subsidy driven programmes to diminish the importance of local initiatives and community involvement; and a tendency for subsidy driven approaches to enhance the powers of local and national bureaucracies, Moreover experience suggests that, once government utility providers are assured of a continued source of income, the incentive to provide services on an efficient, cost-effective basis, and the incentive to recover costs from consumers, are correspondingly reduced.

This does not, of course, suggest that such failings are inevitable, and there are significant differences between South Africa and other developing countries. It does however point to the need to take seriously the link between institutional capacity and service provision. In-so-far as the FBW policy emphasizes top-

down service delivery, the exclusion of those living outside the footprint of viable infrastructure and service delivery mechanisms constitutes a dangerous, if unintended, consequence of policy choice.

On the positive side, FBW subsidies, coupled to good financial modeling, has the potential to enhance institutional capacity. The extent to which this occurs constitutes a critical indicator of the policies success or failure.

The second major challenge that needs to be addressed concerns funding. Free basic services are to be provided by the state indefinitely, and this costs a lot of money. Clearly, this danger is common to any subsidy-driven programme. As costs cannot always be recovered from consumers, they must be met by an external source, in this case, state subsidies. If something were to disrupt this funding flow, the programme could not survive.

As Still (2001) points out, the issue at stake here is not just the availability of capital funds but also (and this ties into the point about government capacity above) the ability of the government to spend capital funds. Even "free" services have to be provided through institutional channels. As the basket of services increases, and as other government-sponsored development programmes (particularly the recently reinvigorated public works programme) compete for scarce institutional capacity, this problem is going to grow exponentially.

The extent to which the government is able to continue to spend money allocated to free basic services is thus an independent indicator of success.

Under the funding rubric we need also flag the likely impact of FBW on cost recovery. DWAF has made it clear that this policy is not meant to imply either a commitment to the provision of free services in general (as opposed to basic or lifeline services) or an abandonment of the principle of cost recovery in general (Muruvan 2002: 3). Where possible, the local state is urged to recover costs, for example, through rising block tariffs, and is instructed to "emphasise to consumers that the new policy is to ensure access to free basic services for the poor and only free basic services to all if the local authority can afford it" (Sussens and Sam 2001: 10).

Unfortunately, in a highly politicised country with a history of service boycotts and a widespread sense of social entitlement, it is often very difficult to negotiate a path between demands for free services writ large and the subsidisation of basic or lifeline service levels. It is thus not surprising to learn, as we saw above, that the initial implementation of FBW in many municipalities has seen a significant decrease in payment levels for services.

A third category of challenge concerns the intended consequences of improved health care. As Still (2001) pointed out, FBW is unlikely to impact significantly on public health unless it is backed up with extensive education programmes aimed at supplementing improved service delivery with better health care practices. The provision of potable water alone will not necessarily improve public health. This points to the

challenge of integrating the provision of free basic services (especially water and sanitation) and other government and NGO-sponsored interventions in the related fields of health and welfare.

The final category of challenge takes us back to the all-important question of sustainability. One of the central pillars of previous water policy was the principle of appropriate community involvement. In developed areas, this typically implied passive consumers, who were serviced by utility companies of one sort or another. In underdeveloped and previously unserviced areas, by contrast, the provision of water services often went hand in hand with the development of on-site management systems. In many communities, this involved the establishment of some form of village water committee that would either manage on-site water provision itself or help oversee the external agent responsible for doing so.

All the available evidence from other developing countries suggests that a degree of participation is vital if development is to succeed (Katz and Sara 1998; McCommon, Werner and Yohalem 1990). The SA government has clearly recognised this fact, and continues to defend the virtues of "people centred development".

The question then is, once we implement a state-led, subsidy driven, development programme, what is the role for community based organisations? Will these latter be reduced to passive recipients, or will they be able to affect critical decisions like the choice of service level, technology, developmental priorities (potable water or water for livestock), etc.? And once the government rather than the community assumes responsibility for payment, will this lead to a devaluation of water and a destruction of assets (Sam 2002: 6)?

There is no *a priori* reason why these problems should occur. The question is: what will community managed schemes do with FBW subsidies? Will they simply lower tariffs, or use the subsidy to replace or enhance assets? The danger is that, once critical developmental decisions are removed from the community, the incentive for community participation and risk taking is reduced. It will be interesting to see if this happens in South Africa under the FBW programme, and to find out what impact, if any, reduced participation has on the viability of rural and peri-urban development projects.

In conclusion: The strength of the free basic water policy is that, whilst the policy is prescriptive (it must be implemented), local authorities have considerable flexibility in deciding how they go about putting the policy into place. Moreover, although politically difficult, local authorities are able to decide on an appropriate amount of free water, as well as the primary beneficiaries (the "poor" versus all residents) and mode of implementation (targeted subsidies, rising block tariffs, etc.). This is consistent with a general trend towards political decentralisation, which is widely regarded as supportive of sustainable service delivery and, if implemented accordingly, could help to overcome many of the problems listed above.

However, as we have seen, in the context of massive institutional weakness and disparities, and a widespread and pervasive culture of non-payment, the free basic services policy has, however unintentionally, tended to bolster the arguments of those who oppose fiscal austerity and attempts at cost recovery, and helped silence alternative community-based development initiatives.

In urban areas, "free basic water" has shaded very rapidly into a massive, across-the-board, state subsidies; whilst the inability to implement the policy in rural areas means that water is simply not charged for (free for *all*, rather than free *basic* water). As such, the tendency is either to provide subsidised water to the existing "haves" or, in cases where the local state is unable to support viable, sustainable, water provision arrangements, to use ongoing non-recoverable state subsidies to cover up failures in the community water supply and sanitation programme.

If these challenges are not addressed, the free basic water policy runs the risk of becoming a palliative measure designed to mask government failure. It is our sincere hope that this does not happen.

3. Understanding the Equitable Share

"Local government and each province is entitled to an equitable share of revenue raised nationally to enable it to provide basic services and perform the functions allocated to it" (SA Constitution, 1996 Section 227(1)).

3.1 Introduction

The South African Constitution of 1996 requires that national government divide South African tax revenue between the three spheres of government – national, provincial and local. This is referred to as the *vertical* division of revenue. Recommendations for the *horizontal* division of revenue were published by the Financial and Fiscal Commission (FFC) in 1997, proposing that local governments use their allocations for the provision of basic services to poorer households, thus directing national government to allocate funds according to the poor population in each municipality. This report directed National Treasury and the Department of Provincial and Local Government (DPLG) in their formulation of exactly *how* to divide up the national revenue amongst the municipalities. National Treasury decided to introduce an entirely new formula-based system for the horizontal distribution of revenue, as the then existent method was inequitable and unpredictable. The aim of this new system was to introduce greater predictability and consistency into municipal revenues, thus improving their capacity to budget (Hazelton, 2004). This formula-based system, the Equitable Share, was introduced in 1998 and is defined as "the sum of all the unconditional transfers made from national to local government... to help local government cover all the recurrent operating costs of providing basic services to **poorer households**" (Hazelton, 2004 pg 2).

Although the Constitution states that the Equitable Share is an "unconditional" grant - received in full regardless of circumstances – it also stipulates that local government is responsible for the provision of basic services. This suggests that local government has the obligation to use at least enough of the grant funds necessary to provide services at the Reconstruction and Development Programme (RDP) standard (this also implies that national government has the obligation to transfer sufficient funds to meet these standards). National and provincial governments have the power to intervene if local government neglects their duties (Constitution, Sections 100 and 139).

With the introduction of the new formula system in 1998, the total non-capital transfers decreased almost 30% from the year before. Only in the 2003/2004 year did the levels rise enough in real terms to exceed the 1997 level (refer to Figure 1 and accompanying Table 1 below). It is thus not surprising that municipalities serving poor areas struggled to perform, especially with the increased responsibility post-demarcation in 2000. However, the 2003-2004 budget grew 45% and the 2004/2005 budget a further 18%, making the transfers significantly higher than they have ever been before. The formula-based Equitable Share is a significant improvement on the previous inequitable system. Transparency and accountability still need to be improved (as discovered when trying to access information and figures for this research), but with the major allocation increases since 2003/2004, municipalities now have the resources to supply basic services to the poorer households within their jurisdiction.

Table 1: Summary of national revenue transfers to local government 1997/1998 to 2006/2007

Element	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
R293 allocations	951	951	503	463	358	381	381	263	184	129
Equitable share	903	1 024	1 673	1 967	2 838	3 806	5 962	7 415	8 459	9 236
Water & Sanitation Ops	493	599	710	746	660	700	836	858	934	990
ES and related	2 347	2 574	2 886	3 176	3 856	4 887	7 179	8 536	9 577	10 355
% increase	*4,5*	*9,7*	*12,1*	*10,0*	*21,4*	*26,7*	*46,9*	*18,9*	*12,2*	*8,1*
Other non-capital grants	1 564	205	151	566	456	498	677	723	749	749
Total non-capital grants	3 911	2 779	3 037	3 742	4 312	5 385	7 856	9 259	10 326	11 104
% increase	*-2,7*	*-28,9*	*9,3*	*23,2*	*15,2*	*24,9*	*45,9*	*17,9*	*11,5*	*7,5*
Relative value 1996/97 base	*89,6*	*59,6*	*61,9*	*72,3*	*78,9*	*90,2*	*124,4*	*139,1*	*147,0*	*150,3*
Relative value 1998/99 base	*150,4*	*100,0*	*103,9*	*121,5*	*132,4*	*151,5*	*208,8*	*233,5*	*246,9*	*252,3*
Infrastructure cap grants	2 138	1 908	1 632	1 970	2 240	3 416	4 144	4 986	5 590	5 987
Total grants to Local Gov	6 049	4 687	4 669	5 712	6 552	8 891	12 000	14 245	15 916	17 091
% increase	*17,5*	*-22,5*	*-0,4*	*22,3*	*14,7*	*35,7*	*35,0*	*18,7*	*11,7*	*7,4*
Avg annual inflation CPI	*+8,6*	*+6,9*	*+5,2*	*+5,4*	*+5,7*	*+9,2*	*+5,8*	*+5,4*	*+5,5*	*+5,2*
Total national budget	189 947	201 416	214 750	233 934	262 905	291 823	333 965	368 904	404 653	439 057
Total Local Gov grants %	*3,2*	*2,3*	*2,2*	*2,4*	*2,5*	*3,0*	*3,6*	*3,9*	*3,9*	*3,9*

Note: Before 1998/99 there was no formula allocated equitable share payments to local government. Instead there were other ad hoc unconditional intergovernmental grants (IGGs) paid to municipalities, mostly through the Provinces. These have been included as Equitable Share payments above.

(source: Hazelton, 2004 pg 6)

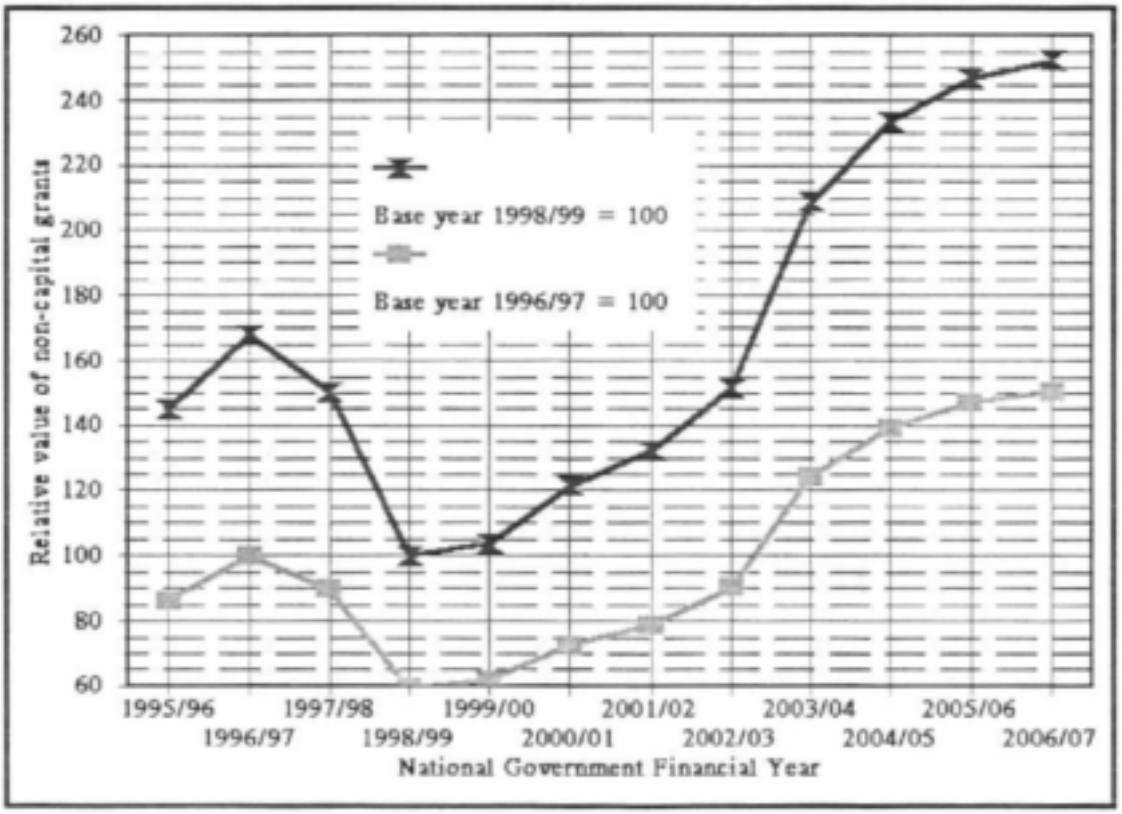

Figure 1: Inflation adjusted values of non-capital transfers from national to local government 1995/1996 to 2006/2007 (source: Hazelton, 2004 pg 6)

3.2 The Components of the Equitable Share

The Equitable Share is made up of the following components:

- S-Grant – Services grant to assist in the provision of basic services to poorer households;
- I-Grant – Infrastructure Grant to assist in institutional and governance requirements;
- R293 Grant – personnel subsidy for old R293 towns. This will be phased out in June 2004;
- Nodal allocations – given to 21 priority nodes of under-developed areas to aid developmental programmes; and
- Free Basic Services – additional component to assist with the provision of basic services.

Note that municipalities are guaranteed to receive at least 70% of the previous year's total grant in order to ensure financial stability. This is typically included into the S-Grant by Treasury.

For the purposes of this research, a more detailed explanation of the S-Grant and the Free Basic Services Grant is necessary. Understanding the allocation of these grants is imperative in determining the funds available to local government for the provision of Free Basic Water.

3.2.1 The Municipal Basic Services transfer – the S-Grant

This grant is intended to cover the operating costs of the provision of basic services (water, electricity, refuse removal, and sanitation) to poorer households. "Poorer households" are currently defined as those households with an expenditure of less than R1100 per month (Division of Revenue Act, 2003).

The formula for calculating the S-Grant includes factors that adjust the amount according to: national funds available; number of poorer households; and estimated cost per capita of the provision of the services. A further factor is one that phases in the new system, allowing for time to build capacity to fulfil the new functions. When the Equitable Share was first introduced in 1998, the calculations were based on the following estimated costs (Hazelton, 2004 pg 4):

Table 2: Estimated costs for basic service provision

Service	Rand per mth	Rand per year	Percentage of total
Electricity	36	432	41,8
Water	20	240	23,3
Refuse	20	240	23,3
Sanitation	10	120	11,6
Total	86	*1 032	100,0

*Note: This amount is still used to date, although it is acknowledged that the costs have increased (Intergovernmental Fiscal Review, 2001 as cited in Hazelton, 2004).

The S-grant is paid to Category 'B' (local) and 'C' (district) municipalities according to functions performed. The grant is divided according to the percentages calculated in Table 2 above, ie 41.8% for electricity, 23.3% for water, 23.3% for refuse, and 11.6% for sanitation (Division of Revenue, 2003).

3.2.2 Free Basic Services Grant

This grant was first introduced in the 2003/2004 budget and is intended to make it more affordable for municipalities to provide free basic services to poorer households. The Grant is separated into a Free Basic Electricity/Energy Grant, and a Free Basic Services Grant which includes water, refuse and sanitation. The allocations are divided according to the same percentages used in the S-Grant. Unlike the S-Grant the FBS-Grant includes a parameter for the number of poorer households *actually* receiving the basic service. This parameter results in 50% of the grant being dependent on the actual service provision. This provides an incentive to local government to provide the services, and also prevents misallocation of funds by municipalities that are not providing services. The grant is paid to category 'B' (local) and 'C' (District) Municipalities according to their functions. In poor areas, the district municipalities are generally in charge of water and sanitation while the local municipalities are assigned refuse removal and electricity (Hazelton, 2004).

3.3 Funds available for the provision of Free Basic Water

The Equitable Share is significant for this research, as for many rural, poor municipalities it is the only source of revenue available to cover the costs of providing FBW. In order to calculate how much is available for the operations and maintenance of Free Basic Water supplies to poorer households, one needs the breakdown of the ES into the various components. Table 3 below is an example of actual breakdowns for a number of local and district municipalities for fiscal year 2004/2005.

Table 3: Breakdowns of the Equitable Share for three districts (2004/2005)

EQUITABLE SHARE 2004-05 MUNICIPAL FINANCIAL YEAR							
Municipality	**S Grant incl Guarantee**	**I-Grant**	**R 293**	**Nodes**	**FBS**	**FBE**	**Total Allocation**
B Umzimkhulu	23,036,165	3,589,892	-	-	2,374,379	1,817,610	30,818,046
B Umzimvubu	59,854,492	4,350,593	-	-	5,932,395	3,894,811	74,032,291
C Alfred Nzo DM	44,778,468	7,261,891	-	11,011,707	6,575,184		69,627,250
Total:Alfred Nzo Municipalities	**127,669,125**	**15,202,376**	**-**	**11,011,707**	**14,881,958**	**5,712,421**	**174,477,587**
B Endumeni	1,949,513	825,288	109,620	-	957,261	517,774	4,359,456
B Nqutu	6,435,670	3,428,473	1,287,889	-	1,776,310	1,065,535	13,993,877
B Msinga	13,742,332	3,556,942	93,523	-	2,296,228	1,292,739	20,981,764
B Umvoti	10,811,149	1,957,354	-	-	1,529,269	914,426	15,212,198
C Umzinyathi DM	14,981,816	5,557,253	1,376,306	6,498,202	5,244,453	-	33,658,030
Total: Umzinyathi DM	**47,920,480**	**15,325,310**	**2,867,338**	**6,498,202**	**11,803,521**	**3,790,474**	**88,205,325**
B Makhuduthamaga	12,099,630	3,976,163	-		3,047,892	3,582,354	22,708,039
B Fetakgomo	4,934,741	3,060,400	-		1,121,165	968,835	10,085,141
B Greater Marble Hall	5,413,031	3,278,859	1,335,600		1,518,954	1,807,235	13,353,679

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B Greater Marble Hall	5,413,031	3,278,859	1,335,600		1,518,954	1,807,235	13,353,679

B Greater Groblersdal	9.750.921	3.808.093	3.924.869		2.600.615	3.465.146	23.549.644
B Greater Tubatse	12.695.502	4.005.195	1.107.504		3.361.285	3.031.784	24.201.270
C Greater Sekhukhune Cross Boundary	23.785.092	8.360.983	-	19.492.349	11.283.711	-	62.922.135
Total: Sekhukhune Cross Boundary DM	**68.678.917**	**26.491.693**	**6.367.973**	**19.492.349**	**22.933.622**	**12.855.354**	**156.819.908**

For the provision of FBW, the following *should* be allocated by the municipalities:

- 23.3% of the total S-Grant; and
- 40% of the total FBS

The total from these should be used to calculate a per capita allowance for the provision of water to the poorer households (total ÷ poor population). Theoretically, this per capita allowance should be sufficient to cover recurring operations and maintenance costs (including essential asset replacement) for the provision of FBW to those poor households, and should be used in the calculation of budgets.

Table 4: Calculation of the per capita ES available for FBW provision

Alfred Nzo DM	
23.3% of S Grant	R29,746,906
40% of FBS	R5,952,783
Total	R35,699,689
Poor population (2001 census as used by Div of Revenue)	439 678
Per capita allowance per month	R6.77

uMzinyathi DM	
23.3% of S Grant	R11,165,471
40% of FBS	R4,721,408
Total	R15,886,880
Poor population (2001 census as used by Div of Revenue)	329 519
Per capita allowance per month	R4.02

Sekhukhune Cross Boundary DM	
23.3% of S Grant	R16,002,187
40% of FBS	R9,173,448
Total	R25,175,636
Poor population (2001 census as used by Div of Revenue)	653 757
Per capita allowance per month	R3.21

It should be noted, that the ES is highly dependent on population and poor population figures in its allocations. The 2001 Census figures that are used in the calculations differ significantly with other data available in the municipalities. These discrepancies can result in municipalities being under funded and unable to afford the provision of FBW. This is discussed further in Section X of this document.

(For a fuller discussion of the Equitable Share, refer to Appendix 1, "*Understanding the Equitable Share*" by Derek Hazelton. This work was commissioned for this study and has not been published elsewhere).

4. Methodology

4.1 Introduction

Methodology is key in determining the outcome of research. Different approaches hide and highlight different issues, and present the findings within a specific framework. Whether researchers are aware of it or not, the way the research is undertaken has a profound influence on their findings, analyses and conclusions. Methodology also has repercussions for the researched. Researchers have, in their efforts to help, often made situations worse. It is because of this wider ripple effect, that researchers have a moral obligation to undertake their research with careful deliberation using the most appropriate methodology.

4.2 Research methods

This research has been undertaken using the case study method and Participatory Rural Appraisal, with the latter used within a case study context.

4.2.1 Case Studies

Case study research is regarded as a qualitative method and as such does not aim to discover data that will support or disprove a hypothesis, but rather develops theories and propositions as the research develops (Burns, 2000). Furthermore, a case study does not look at a phenomenon in general, but is rather a specific example studied within a defined time and space. This allows for an in-depth study from a variety of perspectives (Kitchin and Tate, 2000) to discover what is happening within the boundaries of the complex system. Case studies are typically a mix of qualitative and quantitative data relying on interviews, observation, and document analysis. Case studies can be done at varying scales, starting from the study of an individual and ranging to the study of a country. Researchers can also have only one case, or several. Multi-case studies are often intended to replicate each other, and are specifically chosen so that they either produce contrary, or similar results. This is then used to demonstrate support, or show the need to revise a situation (Burns, 2000). In this research, the research team had very little prior knowledge of the case studies and so predicted results could not be included in the criteria for choosing the case studies. This was important, as the research team did not want a bias towards success or failure to affect the choice of case studies.

With case study research it is vital that the research team is aware that their role in the research process is inextricably linked with the results. The research team must be aware of bias, and therefore must include triangulation and peer consultation in order to minimise the possibility of the research team becoming too immersed in the process to be objective.

The case study method was applied in this research to discover and analyse the current situation in South African rural areas with regards to the implementation of Free Basic Water. A number of defined case study areas (multi-case studies) were chosen - all varying in size, location, and degree of implementation. The common factors used in their selection were:

i.) a predominantly rural population;

ii.) majority poor population; and

iii.) located in KwaZulu-Natal or the Eastern Cape Province.

The case studies were not chosen as representative samples, but rather to document different implementation strategies in order to discover any patterns/trends/lessons which could then be related to a wider population. As mentioned, the case studies were all done at varying scales, ranging from regional to to an isolated small community:

i.)	Regional	uThukela Water Partnership
ii.)	District Municipality	Alfred Nzo
iii.)	local municipality	Ngqushwa
iv.)	Large scale community project	Vulindlela
v.)	Small scale community project	Nhlungwane

Existing documentation on Free Basic Water (pilot research projects, research papers, policy documents) was read in order for the research team to become familiar with the background to implementation and to build base knowledge for the key informant interviews. The documentation, the interview material, and other reports and documents that were made available through the key informants, were then used to describe, analyse and compare the case studies. A trend appeared in the case studies, suggesting possible general conclusions on the implementation of FBW in rural areas in South Africa. This trend could be of significant importance to government, and thus it was necessary to establish that the trend was not restricted to this research, but that similar trends were being discovered by contemporary researchers in South Africa. In order to do this, both published and unpublished documents were used to corroborate the findings of this research. This helped to establish the credibility and reliability of the case studies.

4.2.2 Participatory Rural Appraisal

"PRA can be described as a family of approaches, methods and behaviours that enable people to express and analyse the realities of their lives and conditions, to plan themselves what actions to take and to monitor and evaluate the results" (Hill, 1999 pg 14).

Participatory Rural Appraisal (PRA) was the second methodology used. This was only used in one case study - the community case study - as this was deemed the most appropriate method at this level.

PRA is an applied research methodology which involves the local people in the learning process, and has the key objective of empowering the people to bring about the changes themselves. A PRA practitioner does not prepare a set of externally predetermined criteria for investigation, but rather learns in an inductive manner from the community. In order to do this, the research team has to spend time in the community observing and participating in their daily activities (Hill *et al*, 2001).

According to a group of PRA practitioners (handbook, 1993) the underlying values of PRA are:

A community must engage in their own development;

Perceptions and feelings are important;

Resourcefulness and creativity should be stimulated; and

The insight and knowledge of the community is important.

These values are echoed in Chambers' (1983)five central concepts: empowerment; respect; localisation; enjoyment and inclusiveness.

A clear example that demonstrates the PRA methodology is found in the table below (adapted from PRA Handbook, 1993):

Academic Approach	Participatory Approach
The research team designs, refines and applies a questionnaire	The facilitator designs and presents materials to stimulate participation and reflection
Community members give information	Community members observe the materials, experiment, add ideas
The research team gathers and analyses the data, draws conclusions and makes recommendations	Community members analyse the data, make recommendations, and act on them

Gathering information whilst adhering to these values does not result in data that is easy to analyse statistically, but in reality can provide a more accurate picture of the situation than any statistical data.

The primary difference between participatory research and traditional methodologies, is that participatory research is designed to work with, and for grass roots communities, and is specifically appropriate for the marginalised and oppressed (Hill, 2004). Traditional methodologies were designed by the powerful to help the powerful, and despite the attempts to use these methods to help the poor, they were mostly a failure. So, although PRA is difficult to statistically analyse and the factors cannot be controlled, these disadvantages are outweighed by the unique ability of participatory research to holistically understand and plan in poor rural communities.

PRA was applied in this research in the Nhlungwane community in order to help prepare and plan for the impending transition from an independent community based management set up, to external management with the implementation of Free Basic Water. The Nhlungwane case study was approached in a very different way to the other case studies as this was done at community level. At this level it was important to not only discover the situation with regards to FBW, as with the other case studies, but also to fulfill the moral obligation of aiding the community to improve their lives. The research team has thus been able to gather all the information necessary using the appropriate PRA methodology, and at the same time help the community to become empowered in a decision making process with local government.

4.3 Techniques

A number of techniques were used to apply the chosen methods and to gather multi-layered information. In the regional, district municipality, and local municipality studies, key informant interviews and document

analyses were the principle techniques of investigation. However, in the community level case study there was also the use of workshops, a transect walk, observation, and informal discussions.

4.3.1 Key informant interviews

"Key informant interviews involve interviewing a select group of individuals who are likely to provide needed information, ideas, and insights on a particular subject" (Kumar, 1989 pg 1).

This technique does not seek a large number of respondents as for a survey or questionnaire. Rather, the purpose is to interview a small number of people that are key to the issue under investigation. These interviews are informal and are interactive conversations facilitated by the interviewer who probes for detailed information (Kumar, 1989). The technique is particularly useful when descriptive information is adequate, when trying to understand underlying motivations, when obtaining recommendations, and when explanation of quantitative data is needed (Kumar, 1989). These were all considerations in this research.

The advantages of key informant interviews are the depth of insight gained due to the involvement and knowledge of the targeted people, and the exploration of unanticipated topics which may result in new areas of discovery for the research team. The disadvantages are the lack of sufficient numbers for statistical analyses, the variety of biases that can affect the conclusions, and the difficulty in proving validity. The latter two can be reduced through awareness of the possible pitfalls, as well as cross checking conclusions (Kumar, 1989).

Application of this technique in this study involved the interviewing of key informants at the different levels of Free Basic Water implementation. It was vital to obtain the perspectives from the municipalities, the implementing agents, and where possible, community members. From these interviews the researchers developed a broad perspective of FBW implementation as well as details of the processes, lessons learnt, problems, and recommendations. The personal contact and building of trust resulted in the researchers gaining access to reports and financial documents that were not available publicly.

4.3.2 Document analyses

"Documentary data can provide valuable insight into the structures and mechanisms of socio-spatial thinking and practice" (Kitchin and Tate, 2000 pg 227).

Secondary sources are very important in case study research and include reports, minutes, budgets, policies and other research projects. Most of these documents were created and edited for a particular audience, and inherent bias must be accounted for. The 'truth' may need to be sifted out through triangulation of various documents and interviews (Burns, 2000).

Application of this technique involved a combination of public documents (on the internet, published, or available on request); and project reports kept by consultants and municipalities. As mentioned above, these types of documents are often produced with a particular audience in mind and thus disclose only that

which is necessary/helpful. It became clear that political agendas and sensitivity are of particular significance in this research. The documentation was a significant means of triangulation with the interviews, and gave clarity on biases, problems, political tensions and motivations. This combination was an effective means of sifting out the 'truth'. Different documentation also allowed for the research team to question the assumptions made by other researchers/consultants. It became clear that it was necessary to scrutinize the facts, and conclusions of all materials, as inconsistencies could result in false conclusions.

4.3.3 PRA Techniques

There are a vast number of PRA techniques that are all designed to build understanding of the different aspects of community life. One technique cannot be used in isolation with much success, instead a few must be chosen that will most likely build a holistic picture of the research issue. The following techniques were used in this research:

4.3.3.1 Transect Walk

A walk though the community with key informants in order to observe, question, build up background knowledge and find out the context of the issue under investigation. The primary aim is to begin to understand the community and be exposed to the geographical and sociological make up of the area (PRA Handbook, 1993).

4.3.3.2 Skills Assessment

This tool is used to help both the participants and the facilitator gain a better understanding of the current activities and skills of the community. A series of flash cards depicting "skills" or "tasks" are used to represent the activities that are a part of daily living. These are used to generate discussion, and then the participants are required to identify those flashcards that are appropriate in their community. These cards are then arranged by the community into gender categories – which promotes further discussion. From these flashcards, those activities that are not currently a part of the community, but are desired, are mentioned and discussions around development needs arise.

4.3.3.3 Ranking

This is the identification and prioritising of issues through discussion groups and visual aids. The groups have to come to a consensus as to what are the most important issues to tackle.

4.3.3.4 Voting

This is an extension of the ranking exercise, and is used in order for individuals to vote on their priorities after the discussion and ranking process has occurred. The voting is a personal decision based on all the discussions and exercises preceding the vote. This is a means of making a final decision on the way forward, and ensures that each person has a 'voice'.

Some of the advantages of using these techniques are full participation, flexibility, the opportunities for facilitated discussions, time to observe, and the affirmation of indigenous knowledge. These advantages lead to some disadvantages, namely that the process is highly reliant on the skill of the facilitator. The facilitator can either highlight the advantages mentioned - resulting in a productive, useful process - or can interfere in the learning process and cause the results to be a reflection of his/her interests or misunderstandings. It is therefore imperative that PRA facilitators are adequately trained and that they work in a team to minimise these disadvantages.

In this research, these techniques were combined to facilitate both information generation, and community planning. The transect walk and interviews took place within the every day activities of the community life and were conducted whilst the facilitator stayed in the community. The remainder of the techniques were conducted in a workshop setting with 30 - 60 people who took part in the exercises. This process took place over approximately 3 months, to allow for the lessons learnt in the workshops to be disseminated and discussed within the community. The implementation of these techniques is a vital part of the research process, and is described in Appendix 4.

5. Case Studies: Location and background information

Five case studies within the provinces of KwaZulu-Natal and the Eastern Cape were chosen. The location of each case study is shown in Figure 2.These case studies are at different scales, and provide insight into rural water supply management at different levels and different institutional arrangements.

Figure 2: Location of case study areas

The uThukela Water Partnership has been contracted as the regional water service provider (WSP) for three district municipalities in the Tugela Basin. July 2004 is the official date that they will begin operating as WSP. The case study outlines the 30 year Strategic Plan of the partnership and then compares this with historical data (AquAmanzi) from the region and project budgets planned by the partnership. The data from AquAmanzi forms a mini-case study within the uTWP study of the experience and costs in the region.

The Alfred Nzo District Municipality is a WSA in the eastern part of the Eastern Cape and has been implementing Free Basic Water since July 2001. The case study tracks their experience thus far, outlining their costs, institutional arrangement and effectiveness. The study focuses on the Umzimvubu area where the Maluti Water Support Service Agent (SSA) operates.

The Ngqushwa Local Municipality is also in the Eastern Cape, being part of theAmatole District Municipality (the WSA). These municipalities have not officially implemented a Free Basic Water policy officially due to institutional problems. Ngqushwa LM is not the only municipality in this predicament, and thus this is a valuable case study highlighting the obstacles to implementing FBW in rural areas. The Ngqushwa LM is indirectly implementing a FBW policy in that they were paying for water supply for the rural areas from the equitable share with no income from beneficiaries.

The Vulindlela Water Project is found within the uMsunduzi LM (the WSA) in KwaZulu Natal. It is a single project but serves a very large population. This case study focuses on the management of FBW implementation at project level, and the challenges of cost recovery.

The Nhlungwane Water Project is a small stand-alone scheme managed by the local community. Their approach, costs, strengths, and weaknesses are all different from any of the other case studies. This case is important in illustrating an alternative option for rural water supply. The case study also records the process of transition from an autonomous community water scheme, to one that is government subsidised with outside management by uThukela Water Partnership, as a result of FBW.

Several municipalities in the North West and the Limpopo provinces were approached with a view to doing comparative case studies there. None of those with a significant rural population were implementing Free Basic Water.

5.1 uThukela Water Partnership

Figure 3: The area serviced by the uThukela Water Partnership

5.1.1 Background

The uThukela Water Partnership is a multi-jurisdictional municipal service provider for water and sanitation services. It is a joint initiative by three district municipalities in north-western KwaZulu-Natal, namely Amajuba, uMzinyathi, and uThukela and is the third largest Water Services Provider (WSP) in South Africa. The region is primarily rural and has no large cities, only a few towns. The majority of the rural population is poor. The area covers 26 318 1464 km^2 and has a population of 1.78 million. There are 284 777 households in the region, implying an average across urban and rural settlements of 6.3 persons per household (Section 78 study, 2003). Table 5 below details the demographic information for the region:

Table 5: Demographic information for the uTWP region

	uThukela	uMzinyathi	Amajuba	Newcastle	Total
Primary Info source	SP2030	WSDP	WSDP	WSDP	
No. customers	125 108	80 634	29 381	70 692	**305 815**
Population	629 751	615 973	176 975	364 956	**1 787 655**
Indigent customers	113 336	74 990	19 746	38 579	**246 651**
% indigent customers	91%	93%	67%	55%	**81%**
Customers serviced	82 058	26 609	3 791	46 682	**159 140**
% customers serviced	66%	33%	13%	66%	**52%**

Following the general election for local government in December 2000, the role of local government was more clearly defined, and responsibility for water and sanitation provision was placed at this level. In response to this, the three KwaZulu-Natal district municipalities (DMs) of Amajuba, uMzinyathi, and uThukela, together with the support of the 11 local municipalities began the process of establishing a multi-jurisdictional municipal service provider for water and sanitation services – the uThukela Water Partnership (uTWP). This partnership was decided upon after a study conducted by the Department of Water Affairs and Forestry, which concluded that it would be the most cost effective manner of meeting the needs of the large indigent population in the region (uTWP website, 2004). The uTWP will be the water service provider, under contract to provide water services on behalf of the DMs. These services will include the supply of potable water to all communities, businesses, industry and other users, as well as domestic waste-water and sewage disposal systems (SP2030, 2002).

In 2002, Ceenex (Pty) Ltd was contracted to develop a planning document for the uTWP. The uThukela Water Strategic Plan SP2030 is a "comprehensive, integrated, dynamic water sector long term plan, for urgent implementation, for the sustainable provisioning of safe, acceptable, and affordable water and sanitation services" (SP2030, 2002 pg 5). This plan details every aspect of the delivery of water and sanitation until the year 2030. The mandate for this plan is to find the best way for uTWP to operate - answering how, when and at what cost (SP2030, 2002). The January 2003 allocaion of "powers and functions" allocated the role of Water Services Authority to the DMs, and to the Newcastle LM in this area.

Two scenarios were developed, an optimal and a marginal:

The *optimal scenario* aims at providing a low pressure/full pressure water connection to 98% of customers within 7 years. This water will be supplied through a centralised water infrastructure system that is a part of the plan. A transaction processing system for billing and receipting is to be set up for all customers. The optimal scenario will require capital funding of R 3 281 million.

The *marginal scenario* will provide a basic service (standpipe) to all customers not presently serviced. There will be no major infrastructural changes and the present decentralised system will continue. The marginal scenario will require capital funding of R980 million.

At the time the plan was drafted the three district municipalities had secured the following funding:

R237 million from the Department of Water Affairs and Forestry
R18 million from the European Union
R65 million from the Consolidated Municipal Infrastructure Programme
R320 million in total

This funding was available for the 2002/2003 financial years.

This shows that for both the optimal and marginal scenario, further external funding is required to meet the objectives of the SP2030. Whereas the marginal scenario should be achievable using *expected* future funding flows from DWAF and CMIP, the optimal scenario will not become a reality unless very significant external grant funding sources are realised (SP2030, 2002).

Optimal and marginal scenarios for operational expenditure are outlined in the SP2030 (2002), and are discussed in Section 5.5.4 .

5.1.2 Free Basic Water Policy

The uThukela Water Partnership does have a Free Basic Water policy, but due to the partnership not being fully functional as yet, the three district municipalities still have their own different policies. These policies will be replaced by the following once the partnership has taken over as water service provider:

The Free Basic Water policy in the uThukela Water Partnership areas will be determined by service level. There are three levels (Johnston, 2003):

- Street standpipe – free. This standard policy recognises that consumption at street standpipes is typically under the 6kl/family/month limit. Any rudimentary system (e.g. handpumps) also fits into this category.
- Household connections with restricted flow – flat rate of R18.00 per household per month. A broad based cost analysis was done to come to this figure, and covers the use of 3.3kl per household per month.
- Full pressure connection – a flat rate charge of R18.00 per household per month until the 6kl is exceeded. Thereafter the current 'normal' tariff would apply.

The uThukela Water Partnership aims to upgrade all water supplies to piped connections by the year 2030.

5.1.3 Envisaged Income Sources

- Tariff income – tariffs will be standardised across the district municipalities and will be increased so that cross-subsidization will be possible. This will be helped by the implementation of a uniform bulk tariff (the figures for these tariffs are not known) (Johnston, 2003);
- Equitable share – R20 million (Financial Year (FY) 2003) (SP2030, 2002); and
- Water tax – R11 million (FY2003) (SP2030, 2002).

5.1.4 Institutional arrangement

The institutional arrangement is not yet finalised, but is unlikely to change significantly from that which is set out in the SP2030 document:

5.1.4.1 The water service provider (WSP)

The WSP for the uTWP will be set up as follows:

Participating municipalities will fully own the uThukela Water Company. The uThukela Water Services Provider will be a private company (Pty Ltd) and will comply with the Public Finance Management Act. The municipalities will vote and appoint an executive board of directors. The uThukela Water company will enter into a long term agreement with the WSAs for the services delivery of water and sanitation. All water related assets and water staff will be transferred to the company.

uTWP will subsidize tariffs as per the FBW policy, and will be compensated by the WSA for the costs incurred. Users will enter into a contractual agreement with the uTWP and will pay the uTWP for services delivered. Any profits made by the uTWP will be reinvested or paid out to its stakeholders (i.e. the Water Service Authorities of the region).

5.1.4.2 The water service authority (WSA)

The three district municipalities will remain as three separate WSAs although there was a suggestion that one multi jurisdictional joint WSA will be formed and referred to as the uThukela Water Regulator. This is not legally possible. Below is the proposed institutional arrangement for the uTWP as WSP, and how it will relate with all the contributing parties:

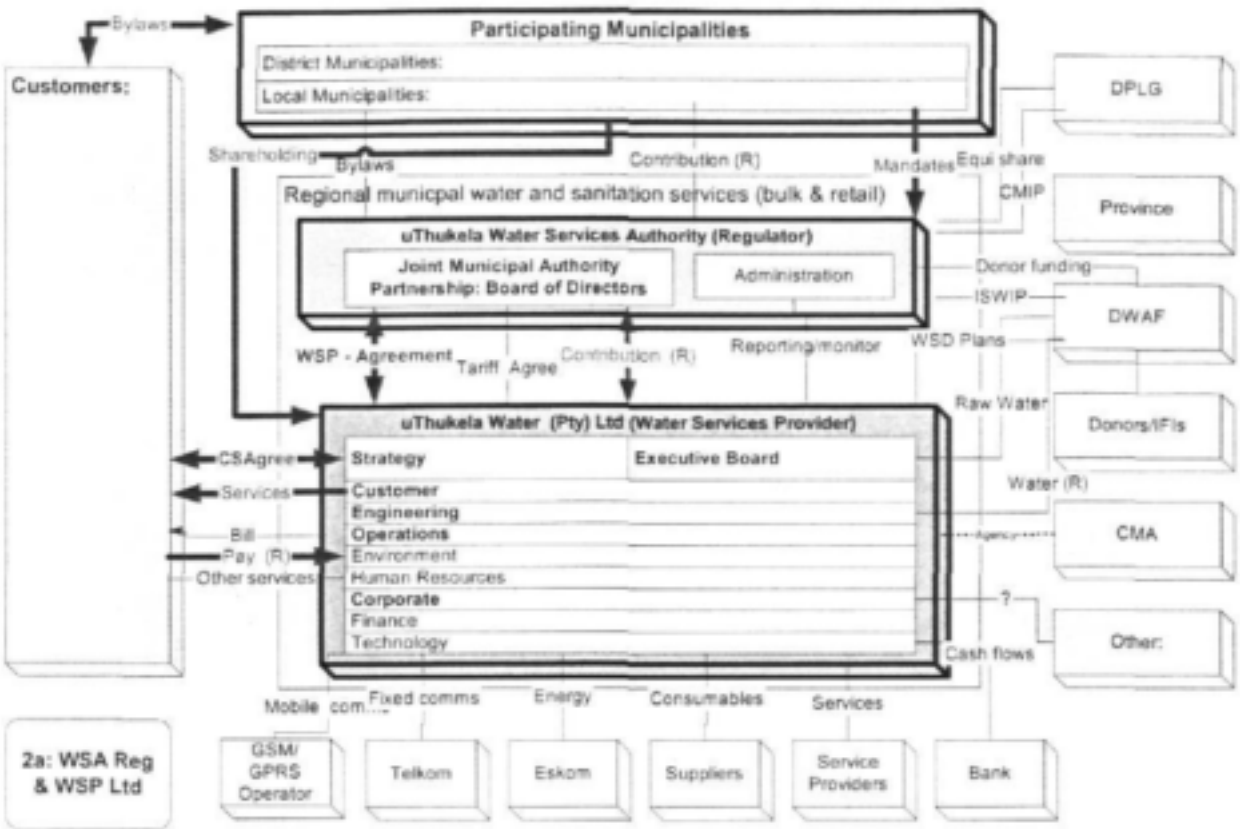


Figure 4: Proposed Institutional arrangement for the uThukela Water Authority and Service Provider (SP2030, 2002 pg 38)

If the formation of a WSA Regulator is decided upon, then the representative from each DM will be a member of the Board. The Regulator will execute all the functions of a WSA including the channelling of funds from CMIP, the Equitable Share, DWAF and other grant funding.

5.2 Alfred Nzo District Municipality

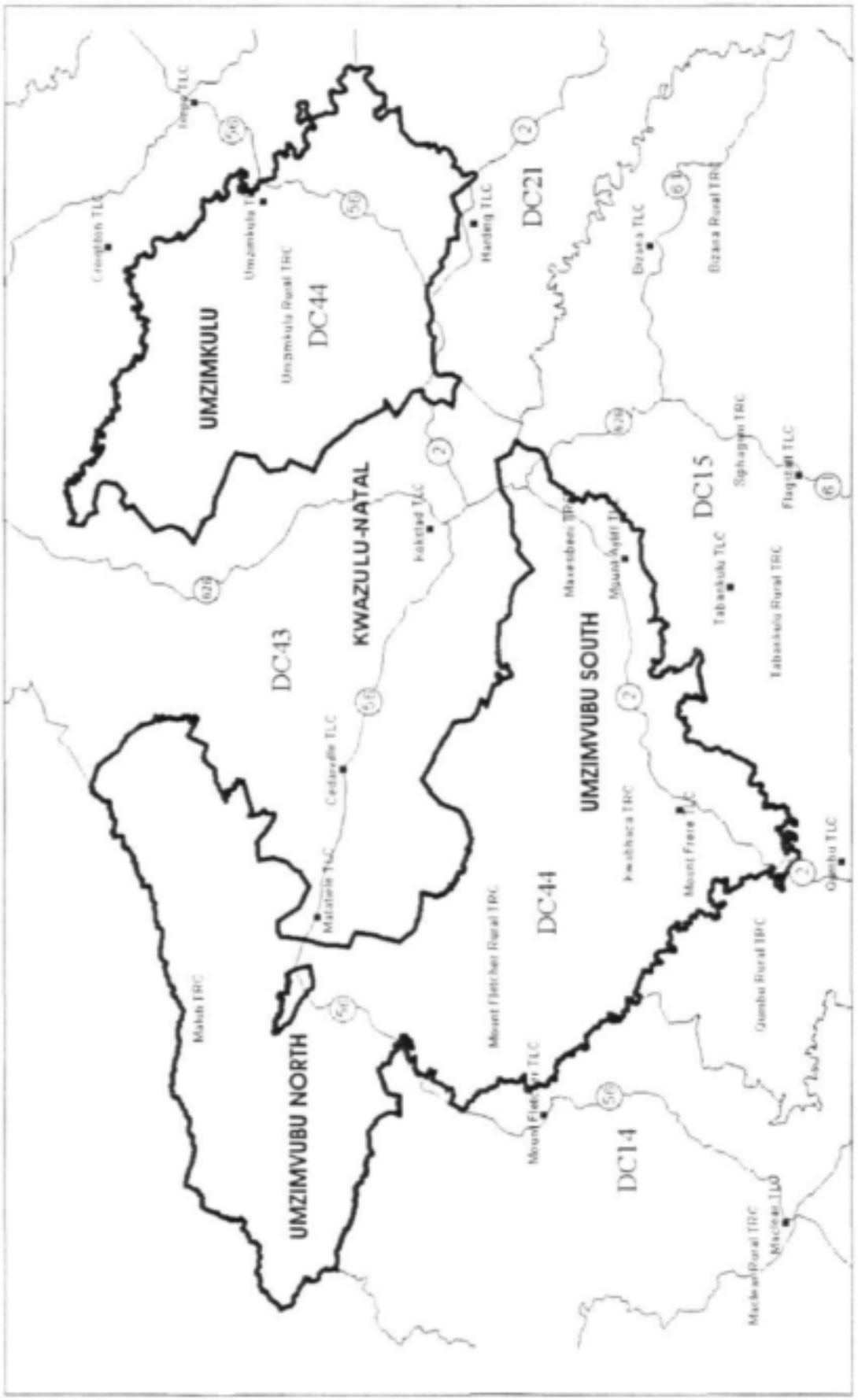


Figure 5: : Map of the Alfred Nzo District Municipality

5.2.1 Background

The Alfred Nzo District Municipality (Alfred Nzo DM) is located in the poorest province in the country - the Eastern Cape. It is divided into three areas: Umzimvubu South, Umzimvubu North, and Umzimkhulu (see Figure 5). The Alfred Nzo DM has a population of 635 845 of which 552 813 are classified as poor (i.e. the monthly household income is below R1 100) (DWAF website, Jan 2004). There are no cities in the Alfred Nzo DM and only a few towns, thus most of the population (approximately 400 000) is rural. There are 560 rural villages of which 350 have a water supply – 40% at the RDP level and 60% at a rudimentary level (Zellhuber, 2003). In terms of the "powers and functions" the DM is the water services authority.

In the year 2000 a study of the water schemes in the DM was done by the Mvula Trust, in order to develop a way forward for the management of rural water schemes in the DM. From the findings of this study, the DM decided to accept the principle of community based management for Alfred Nzo. The rationale for this was as follows (Lebenya, 2002):

- most of the schemes use simple technologies that are understood by local communities;
- the cost of operating and maintaining these schemes is low due to the simple technology; and
- vandalism is better controlled by a respected institution within a community.

Although this principle was agreed upon, it was understood that this could not be immediately implemented, but was rather a goal to work towards - thus, the need for Support Service Agents (SSAs). In the beginning of 2001, three SSAs were contracted, and as a first step they undertook a technical and social assessment of all the schemes within their given areas of responsibility. Once this information was gathered, intensive workshops and discussions were held on the procedures for the appointment of WSPs. Combining the feedback from these discussions, and the DWAF guidelines for implementation the *Village Level Action Plan* was developed. This plan outlines the FBW policy and strategy for Alfred Nzo District Municipality (VLAP 2002). Much of the information in section 5.2.4 is sourced from this Action Plan.

5.2.2 FBW Policy

The FBW policy is determined by service level:

- Water supplied via basic systems such as handpumps and communal tapstands is free.
- All households with yard connections, as well as businesses and institutions, to pay a flat rate of R5 /kl (Jan 04) for water. This however has not been enforced, as it is not cost efficient for the DM to do so. It was calculated that it would cost the DM R16 per customer to enforce this policy.

(Zellhuber, Gibson, Lenehan, 2003)

The policy aims at providing for the poor, and those with private connections are not viewed as poor. House/yard connections are discouraged, and anyone requesting a connection is responsible for all connection costs (Zellhuber, Gibson, Lenehan, 2003)..

There has not been much need to develop a policy more complex than this, as the consumption in the water schemes is in most cases below the 6kl limit, and there are very few private connections. However, some parties expressed a concern about the attitude towards private connections, as the demand for them

is increasing in communities. If there is no policy enabling private connections, illegal connections may become costly for the DM. This is being shown in a village called George Moshesh where illegal connections not only supply water for domestic use, but also for businesses. With no mechanism for tariff collection, consumption is very high and the problem cannot be contained (Zellhuber, Gibson, Lenehan, 2003).

Table 6: Consumption at some of the water projects in Umzimvubu North (Maluti Water, 2003)

Note: There are a large number of private connections at George Moshesh

Project	Population	Average Consumption July 02-July 03 (kl/mth)	Average Litres/cap/day July 02-July 03	Average %FBW allocation used July 02-July 03
George Moshesh	20 586	30 471	48	194
Tsita	5 280	2 695	10	42
Madlangala	1 872	873	17	70
Madlangala ext	14 976	7 500	17	69
Masakala	3 672	1 058	13	53
Mzongwana	11 196	1367	11	42

A billing system may be set up in the future, but at the moment this would cost the DM more than they would collect from users.

The functions of the water service providers are currently split between the communities and the private sector SSAs. Community level Project Steering Committees are responsible for overseeing the daily operation and maintenance activities, and report to SSAs. The SSAs are responsible for fulfilling any WSP functions that the community does not have the capacity to fulfil. While doing so, the SSAs are required to mentor the community so that the functions can be handed over in the future. The goal is to develop Community Based Organisations that are registered legal entities, and are formally contracted to the DM as WSPs (Zellhuber, Gibson, Lenehan, 2003).

5.2.3 Income sources

The programme is in its third year of implementation. Funding has increased each year as the programme has proved its effectiveness and efficiency and has accordingly been extended to new areas. In the first year (2001) a budget of R4 million was allocated. In the second (2002), R11.4 million, and in the third it was increased to R19.4 million. For the 2003 financial year the breakdown of the source of these funds was as follows (Zellhuber, 2003):

- R6 million of equitable share funds for FBW allocation;
- R10 million of equitable share funds for operation and maintenance of the water projects; and
- R3.4 million from the Department of Water Affairs and Forestry (Operate Train Transfer funding)

5.2.4 Institutional Arrangement

The DM has developed a structure that defines the relationship and functions of the different parties needed for effective and efficient implementation of FBW in rural areas. The success of this institutional arrangement lies in the partnership between government, the private sector, and civil society. This

arrangement is not permanent as yet, instead contracts are renewed annually. This is due to political reluctance to privatise. It is hoped that the efficiencies of this current arrangement will soon be recognised by the politicians and that it will be adopted on a permanent, long term basis.

All the information on the institutional arrangement was taken from the Mvula Trust *Village Level Action Plan* (2002).

The following organogram shows the structure for each project:

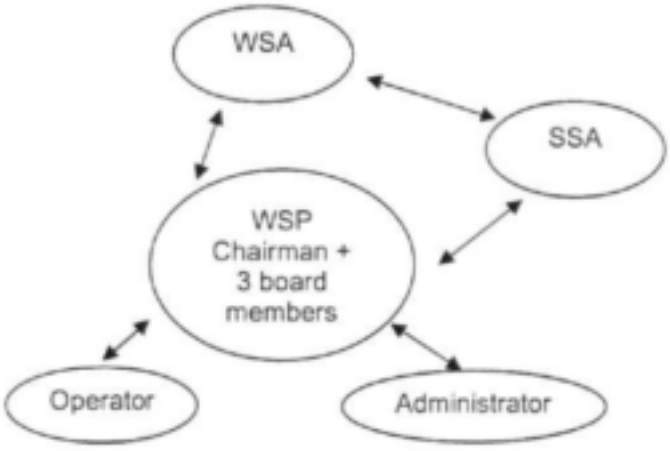


Figure 6: Institutional arrangement for water provision

5.2.4.1 The water service authority

The DM is the WSA and is responsible for ensuring that water supply is efficient, affordable, and sustainable. However, as the municipality has only 5 staff employed in water and sanitation, the DM realised that working alone they are unable to fulfil this responsibility. As a result, the WSA now fulfils a management and co-ordinating role. Inter alia, this includes all of the 350 villages with water supplies.

The WSA provides by-laws and policy, contractual agreements, funding, and the planning and provision of water services. Monthly meetings are held with the three SSAs to discuss the villages under their care, reports are collated, budgets managed and provincial government and other authorities are reported to.

5.2.4.2 The water service provider

The WSPs have not yet been formalised. The goal is for the Village Water Committees to be fully functioning WSPs in a few years. This involves training and capacity building, and a complex legal process. This legal process has provided a number of barriers and the district municipality in conjunction with the Support Service Agents are challenging policy at present so that the process can be completed.

The WSP, when fully operational, will be a legally constituted and registered entity that will be responsible for ensuring that water supply is reliable and safe and that consumers are happy. This includes: customer relations, administration, management, general maintenance, minor repairs, daily operation, and liaison with consumers and the WSA.

The WSPs will be appointed on a two year performance-related contract. This will be done by open invitation. A public information meeting will be advertised and held within the local community. At the information meeting, the invitation document will be explained and made available, with the closing date for applications made clear. Any interested party will need to complete the invitation document and hand it in on or before the closing date. On the closing date, another public meeting will be held to discuss all submissions, and a public adjudication will be held at this meeting. Ward councillors, district municipality representatives and the Support Service Agent will also need to attend this meeting. The adjudication will not result in the appointment of the WSP, but will rather provide a forum for the community to voice their opinion. From the meeting, recommendations will be forwarded to the WSA for final appointment. Only the WSA can appoint the WSP. Once the appointment is final, the SSA will commence the legalising, registering and development of the WSP. The WSP will be an Association, registered as a Non Profit Organisation.

The proposed structure for each WSP is as follows:

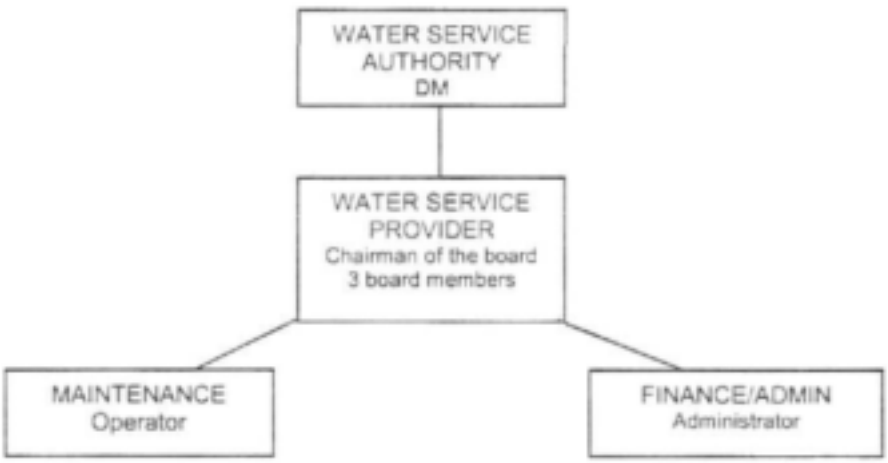


Figure 7: Proposed WSP structure

5.2.4.3 The Support Service Agents

The SSAs are appointed to assist the WSPs to function effectively. They mentor the WSPs in all the aspects of running their water systems; link the WSA and the WSPs; assist the WSA in monitoring the WSP; facilitate the funding flow from WSA to WSPs; and assist the WSPs with the procurement of materials and services.

These are the basic functions and responsibilities, but the SSAs are also responsible for any other functions and responsibilities that either the WSA or WSP does not have the capacity to fulfil. Because of the extensive responsibilities placed on the SSAs, it is essential that these organisations have sufficient experience and staff to manage the complexities of the projects. They are fundamental in the success of the programme implementation.

The SSAs are employed on a two year performance-related contract. These contracts end in July 2004, after which they will be reviewed, and new contracts will be drawn up.

5.3 Ngqushwa Local Municipality

Figure 8: Ngqushwa Local Municipality

5.3.1 Background

The Ngqushwa Local Municipality is situated in the Amatole District Municipality in the Eastern Cape Province and has a population of approximately 140 000. There are 14 wards in the local municipal area. A large proportion of the area is supplied mainly by bulk water supply schemes as indicated in Figure 8 above. All of the bulk water supply schemes are operated and maintained by the Amatola Water Board. The remainder of the area is served by handpumps, windpumps, and stand-alone standpipe schemes. The Amatole DM is the water service authority and at present is working on a FBW policy. FBW is being supplied to the rural schemes by default as there is no cost recovery system in place. Before the authorisation of powers and functions, the ES went to the LM and it paid the Amatola Water Board. Now as the WSA, the DM is invoiced by the Water Board for the bulk schemes under their management.

In 2001 the National Strategy Task Team on Free Basic Water (STT) chose the Ngqushwa LM to be a Free Basic Water pilot municipality, as it is a poor, largely rural municipality with a variety of water supplies ranging from handpumps to bulk supply schemes. This environment was considered to be one of the most challenging for implementation and the process would result in valuable lessons for other municipalities. The pilot was managed by the Palmer Development Group who facilitated the workshops and the investigation process. From the information gathered, recommendations for the institutional arrangements, FBW policy, and budgeting were made (PDG, 2002). These were, however, not implemented. Due to a lack of actual costing available for this pilot, the Ngqushwa LM was very enthusiastic when the Mvula Trust proposed this WRC Free Basic Water study. The aim of this research was to take the PDG pilot to the next level and do a detailed historic costing of water supply in Ngqushwa and then do conceptual comparative costing of various institutional arrangements, projecting what needs to be budgeted for the long term

provision of FBW (the written report for this study (de Jager, 2003) was used to compile this case study - unless otherwise referenced, all information for the Ngqushwa case study was sourced from the report and the author). The findings in this research were met with approval from the LM and DM. To date no changes have been implemented as the DM is awaiting completion of the Section 78 assessment currently underway. Once this Section 78 is complete, decisions will be made and a FBW institutional arrangement will be chosen and implemented. The current status of the Water Board providing bulk services, the DM and DWAF providing operations and maintenance prevails on the rural schemes and distribution networks.

One of the key objectives of assessing FBW at this LM level is to determine the affordability of paying for all water services from the ES, and how critical cost recovery will be.

For the purposes of this report only the historical and current arrangements have been used. A separate report and presentation on the various possibilities and budgets for institutional arrangements were presented to the local and district municipality to aid with their decision making (a summary of the budgets is attached as Appendix 2).

5.3.2 Free Basic Water Policy

There is at present no official Free Basic Water policy, however, the current situation on the ground is as follows:

- Those with rudimentary supplies have never been charged for water, and use less than 6kl, so there is no need for monitoring water usage of these supplies.
- The rural areas serviced by the bulk supplier, Amatola Water Board, receive FBW as the municipality pays the Water Board for the bulk water cost of supplying 6kl/hh/month.
- All other users pay for all their water (mostly resorts and large institutions)

5.3.3 Income Sources

The LM is heavily reliant on the Equitable Share due to low cost recovery. There is limited income from businesses, peri-urban settlements and resorts. DWAF has an annual budget for operation and maintenance but this is used at the discretion of DWAF and is not available to the municipalities.

According to the Palmer Development Group report (PDG 2002), the income in 2001 was as follows:

Equitable Share:	R2.7 million
DWAF:	R2.7 million
Customer bills:	R0.6 million

The DWAF subsidy is only temporary and will be phased out in a few years, and customer bills have decreased since then, with the 2002 revenue being R262 000. This shows that unless there is an effective cost recovery system put in place, the LM will be almost completely reliant on the Equitable Share.

5.3.4 Institutional arrangements

The weak institutional arrangements for managing water services in rural areas have been the major impediment to the implementation of the FBW policy. The Ngqushwa Municipality inherited the capacity of the former Peddie and Hamburg TLCs and is responsible for water services in these areas, as well as ad hoc operation and maintenance of the surrounding peri-urban areas.

There are village water committees in some schemes that are responsible for preventative maintenance, but this is not monitored and thus it is not known to what extent this is actually happening.

DWAF is responsible for five schemes in the area, but are also understaffed. The entire western half of the Eastern Cape (Amatole DM and Chris Hani DM) is served by one district office that only has eight staff members. This has resulted in an ad hoc crisis management approach.

The Amatole DM is responsible for O&M in the remaining rural areas but also has inadequate staff. As a result the DM is in a constant state of crisis management. There is no time to plan or to do preventative maintenance. Instead, repairs are on a first come first served basis, and are also affected by political influences.

To increase the confusion, the DM and DWAF perform similar functions in overlapping regions. There is a duplication of roles and responsibilities and no co- ordination between the two teams. Thus, the meagre capacity is further reduced.

5.4 Vulindlela Water Project

Figure 9: uMsunduzi Municipality, showing area covered by the Vulindlela Water Project

(source: www.demarcation.co.za)

5.4.1 Background

Vulindlela lies to the west the city of Pietermaritzburg in KwaZulu Natal. The scheme covers 500km^2 and serves a population of approximately 122 088 (Umgeni Water, 2000). Umgeni Water (the parastatal water utility which supplies water to the whole Pietermaritzburg to Durban region) constructed the project during the period 1994 - 2000, and is still performing a large proportion of the WSP functions as well as operation and maintenance. The water service authority (WSA) is the Pietermaritzburg-uMsunduzi Municipality (KZ225).

Water supply for the scheme comes from the Midmar treatment works via a pump station in Groenekloof. This bulk supply is then pumped to five bulk reservoirs, and gravitated to 14 smaller reservoirs. Up to this point it is considered the bulk supply. From these 14 reservoirs, smaller diameter reticulation systems service 19 areas by gravity. Each of these areas has a branch office that is managed by a branch office committee. These committees liaise with the Vulindlela Water and Sanitation Committee who deal with Umgeni Water. There are currently approximately 11 000 active private connections in the area (i.e. approximately 50% of the families have connections). This low number is due to two reasons: there are a number of households that do not have yard connections, and thus use rudimentary supplies or get their water from a neighbour's yard tap; and there are also a large number of disconnected yard connections due to non-payment (these disconnections were done pre-FBW). There are no public standpipes in this scheme (Umgeni Water, 2000).

Before the announcement of Free Basic Water, a business plan for a transition process from Umgeni Water to the uMsunduzi Municipality was drafted (Umgeni Water, 2000). This business plan proposed a three year trial period as a training and capacity building period after which the scheme would be handed over to the water service provider and water service authority for full operation and maintenance responsibility. However, this business plan was not finalised due to the changing government policies (Shangase, 2003). Umgeni has continued to operate and maintain the scheme thus far, and the final transfer of responsibility will occur on the 1 July 2004 (Lilmohun, 2003).

5.4.2 Free Basic Water Policy

Umgeni Water does not have a FBW policy of its own and is not required to do so. Vulindlela falls under the jurisdiction of the uMsunduzi Municipality (the WSA), and Umgeni Water has been instructed by the municipality to maintain the tariff as it was before FBW (R6.08/kl), with the only change being that the first 6kl is free. The uMsunduzi Municipality then pays Umgeni Water for the total FBW usage at Vulindlela (Lilmohun, 2004).

5.4.3 Income sources

Umgeni Water has always subsidised the operation of the Vulindlela Scheme. This subsidy was not foreseen at the time the scheme was planned, but like most rural schemes, Vulindlela has always run at a loss, and Umgeni Water has met these losses from its own reserves. However, due to the implementation of FBW in Vulindlela, the municipality now has the responsibility to pay for the FBW allocation used. From the implementation of FBW by the uMsunduzi in May 2002 until 30 June 2003, Umgeni Water sent a

monthly consolidated bill to the uMsunduzi municipality for all customers using less than 6kl per month. All usage over the 6kl limit was then billed to the customer directly. From the 1 July 2003, uMsunduzi officially took over the scheme. However, due to lack of capacity, the uMsunduzi requested that Umgeni operate the reticulation system on behalf of the municipality for one more year. Since this agreement, Umgeni Water has billed uMsunduzi for the total bulk supply of water. Umgeni Water also send bills to those consumers using more than 6kl, and all this revenue collected belongs to the uMsunduzi municipality. At present this revenue is held by Umgeni Water in a Trust account until such time as contractual arrangements have been finalised with the municipality. Negotiations are also underway for Umgeni Water to be paid by uMsunduzi for their services (Lilmohun, 2003).

5.4.4 Institutional arrangement

The current system of management for the scheme follows the standard Umgeni Water system (Umgeni Water, 2000):

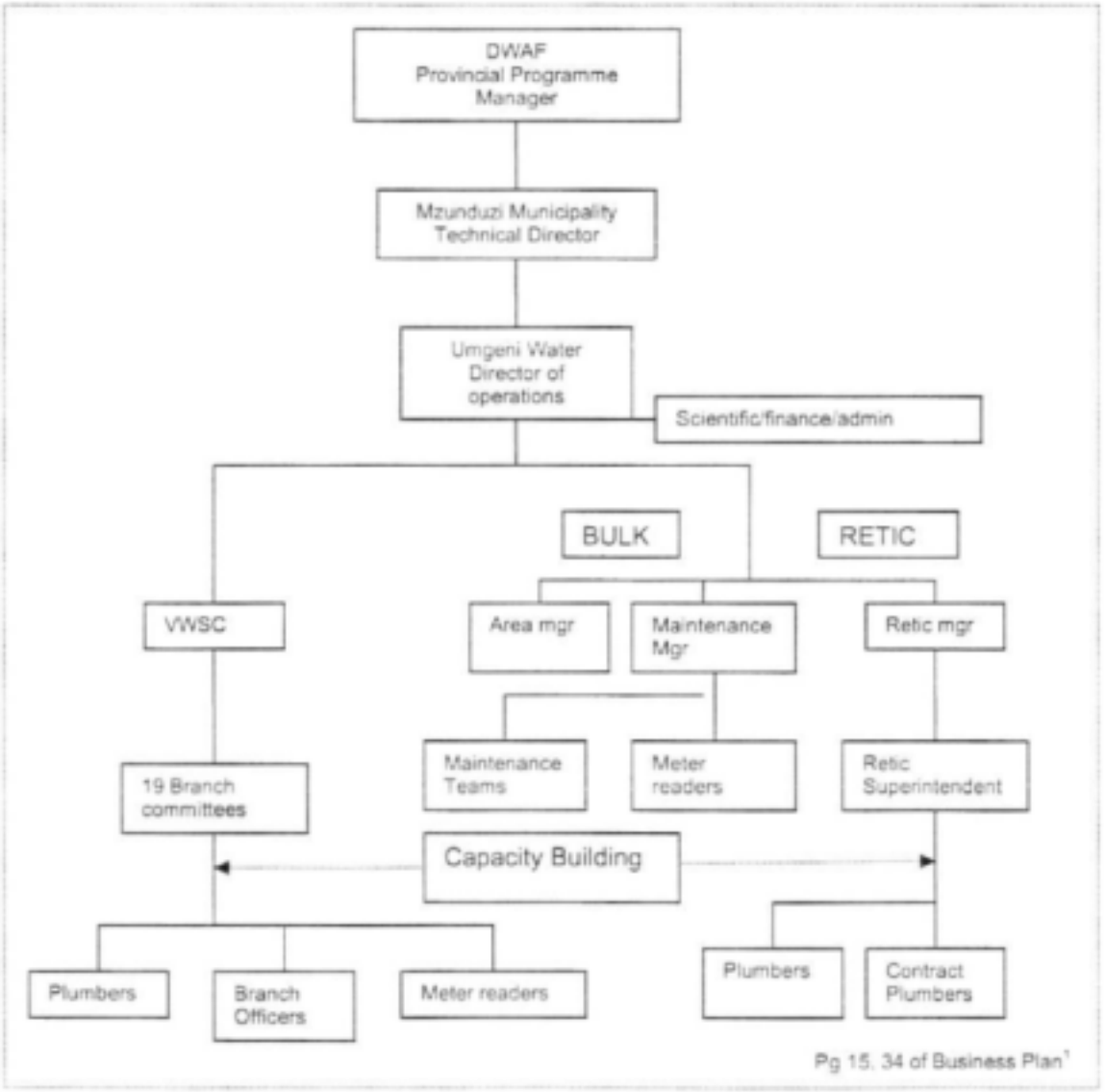


Figure 10: Vulindlela management system under current Umgeni Water management

This system was supposed to be temporary and Umgeni Water was to develop the local branch committees and the umbrella Vulindlela Water and Sanitation Committee into an effective management and communication structure. The aim was to gradually increase the roles and responsibilities of these local structures so that at the end of the trial phase (July 2003), the management of the scheme would align with the DWAF Guidelines for the Operation and maintenance of CWSS Projects, Version 1, March 1999. However, as stated above, this trial phase did not occur, and Umgeni continued to manage the project.

5.5 Nhlungwane Water Project

Figure 11: Location of Nhungwane community

5.5.1 Background

The Nhlungwane Water Supply is located in the Msinga Local Municipality, in the uMzinyathi District Municipality, in KwaZulu Natal (KZN) (see Figure 11). The project was implemented in 1997 by the Mvula Trust. Since its inception, the scheme has been managed by the local community. Free Basic Water has not been implemented yet. This case study was chosen in order to address the key question on how community managed systems will cope with the transition to Free Basic Water (WISA, 2003)

The scheme was built with R300 000 from the Department of Water Affairs and R24 000 from the community. Water for the scheme is pumped from a borehole equipped with a submersible pump powered by a diesel generator. There are two separate rising mains, each filling two 30Kl reservoirs. The reticulation system supplies 40 standpipes serving 220 homes (WISA, 2003)

In 2002, the community won the Water Institute of Southern Africa (WISA) Award for Excellence in Rural Water Supply, for their efficient, committed management of the water scheme (WISA, 2003).

It was this background which prompted the selection of Nhlungwane as a case study in the implementation of Free Basic Water in rural areas. This investigation was intended to answer the following questions:

i.) In a case where a community has a good track record in managing their own water supply, will local government retain and make use of the skills built up in the community?

ii.) If it is no longer required for people to pay for a basic water supply, will they be interested in, and prepared to pay for a higher level of water supply?

iii.) Where good community disciplines have been established in paying for a community service (water), can that practice be transferred to a new development objective after the advent of Free Basic Water?

5.5.2 FBW Policy

The uMzinyathi District Municipality (the WSA) is a part of the uThukela Water Partnership (uTWP). This partnership is to be the water service provider (WSP) for all schemes within the municipality. The partnership will work towards one standard policy, but at present each district municipality has their own policy which is decided according to what is affordable for their region. The local municipalities have been contracted for the coming year to manage all water projects in their area. This is an interim situation until such time as the uTWP has a functioning support programme (Johnston, 2004).

The uMzinyathi FBW policy at present is as follows:

- Community standpipes are to be provided at no cost and the Municipality will subsidize this service from the Equitable Share.

Thus in the case of Nhlungwane people should be able to continue with their present arrangement, but should no longer have to pay the R7 per month levy. Free Basic Water was due to be introduced at the beginning of 2003, was then rescheduled for January 2004 and to date (June 2004) has not been implemented. A decision was taken by the uMzinyathi DM that all payments for water paid for from July 2003 would be paid back to individuals as an acknowledgement that FBW should have been implemented in all communities by then (Johnston, 2004). This payback has not occurred to date, and it is still uncertain when the implementation of FBW will occur.

5.5.3 Income Sources

Each household is required to pay a levy of R7 per month in order to receive approximately 2.4kl of water. There are 220 families in Nhlungwane, of which between 210 and 220 contribute. This gives a monthly income of R1 500.00. According to the committee, if a household does not pay for their water, they are denied access to the taps by the tap operators, and are thus forced to draw their supplies from the village handpumps. This strict implementation of the levy has helped the project to remain sustainable.

The uThukela Water Partnership is planned as the WSP for Nhlungwane. When this happens, the community will no longer need to collect the monthly charge for water. Therefore, unless otherwise decided by the community, there will be no income. The provision of water will therefore be funded by the equitable share.

5.5.4 Institutional Arrangement

All operations, maintenance and management of the project have to date been done within the community. The water system is run by the Village Water Committee (VWC) and two local operators.

The planned institutional arrangement at FBW implementation will be as outlined in Section 5.1.4 of this research, as the intended WSP is the uThukela Water Partnership. How this relates to Nhlungwane has been outlined in the uTWP's 30 year strategic plan (SP2030). The uTWP will manage rural schemes using roving plumbing teams that provide O&M support. A local operator will be appointed in each area, and will be responsible for liaising with the nearest service centre (for Nhlungwane this will be in Greytown). The operator will be an employee of the DM, and will be paid from the annual budget. The operator will be responsible for minor repairs, and will call for assistance when there is a major problem. The uTWP will be responsible for all functions of the water service provider, and there will be no outsourcing to Support Service Agents. The uTWP are planning a schedule of monthly visits to all schemes to ensure regular maintenance and support to local communities. uTWP plan to sub contract local operators to continue their work where appropriate and report to the relevant staff of uTWP when assistance is needed. The plan for Nhlungwane is to employ one operator who will be responsible for the Nhlungwane Water Project and other neighbouring water supplies (Johnston, 2003).

5 Findings

5.5 uThukela Water Partnership

5.5.1 Experience to date

The Free Basic Water policy has not actually been implemented yet, but is scheduled for July 2004. uThukela Water has a huge backlog of work to do, as the district municipalities in the region have erratically implemented FBW in rural areas and there are many communities that need to be served. The current capacity to deliver the services is inadequate, but there is restructuring and training to get the municipalities ready in the near future. There has been a reluctance to inform communities of the policy until there is the capacity to deliver, so some rural communities have continued with pre-FBW arrangements (Johnston, 2003). The WSDP and Section 78 assessments have been completed, and the uTWP has been approved as the best option for water service provision in the region.

The municipalities have chosen not to outsource operation and maintenance to the private sector. Instead all services will be managed and maintained by the uTWP. There will be roving plumbing teams to service the schemes. Local operators will also be employed to monitor and fix small problems, but all major repairs will be carried out by professionals (SP2030, 2002).

5.5.2 Costs

The expected income (at 2003 value) from Equitable Share (R20 million), water tax (R11 million) and tariff income (R95 million) totals to R133 million. The SP2030 Plan outlines the operational budget for Financial Year 2003 with the optimal scenario at R173 million per annum and the marginal scenario at R160.7 million per annum. The optimal scenario includes R40 million in additional tariff income per annum that is required to bring the business into solvency again. This is hoped to be realised as a result of an increase in customers, and the billing system that would be implemented. The plan does not clarify where the money would come from to cover the R27.7 million predicted deficit per annum for the marginal scenario.

Table 7: uTWP FY2003 Proposed Budgets for operation and maintenance

	Proposed Budget FY2003	Cost/household/ annum	Cost/hh/ month	Cost/capita/ annum	Cost/capita/ month
Optimal Scenario	R173,320,000	R1464	R122	R256	R21
Marginal Scenario	R160,700,000	R1356	R113	R237	R20

Note: According to 2002 figures, approximately 120 000 households are served with either basic water or full service - this includes urban and rural.

Due to the SP2030 being only a plan, it is not possible to discuss the optimal and marginal scenario costing at ground level. However, there is extensive historical data available for the region from a previous WSP, AquAmanzi, as well as proposed project budgets developed by the uTWP. These sources triangulate to help provide an outline of real costs of water provision in the region. It is important to note that the proposed uTWP budgets appear to have no correlation with the SP2030 Plan.

5.5.2.1 AquAmanzi Historical Costs

AquAmanzi have been constructing, commissioning and managing water schemes in the uTWP region since 1998. These schemes were gradually handed over to the relevant district municipalities between December 2002 and March 2004 (Johnston, 2004). Detailed monthly records of the expenditure at each scheme were kept and these provide an example of the real costs of operation and maintenance.

Most of the projects were supplied with 6kl/hh/month of free water on the instruction of the relevant DMs even whilst some remained under the management of AquAmanzi. AquAmanzi was required to provide support, mentorship and technical assistance to the village water committees, as well as to do water quality testing at all of the schemes. These were reported on in a monthly O & M report which includes comprehensive financial and water consumption records. This arrangement is similar to the institutional arrangement in the Alfred Nzo District Municipality (Section 5.2), and the institutional arrangement proposed for the Vulindlela Water Scheme (Section 5.4).

Most of the water projects are supplied by bulk water schemes, with the remaining being stand-alone schemes supplied from rivers and boreholes. Some projects have units that dispense the restricted amount of free water e.g. water widget units, others with house connections are billed after the free water limit is reached, and some with unmetered standpipes have no restriction (bulk meters show that the usage is below the limit). Since the introduction of FBW, AquAmanzi records show an increase in water consumption and a decrease in vandalism (AquAmanzi, 2003).

Detail of each scheme in the region will not be included in this research, instead a summary of all projects and their costs in each district municipality will be shown. This summary will then be followed by a more in depth study of the 5 rural schemes in the Nquthu Municipality (within the uMzinyathi DM) in order to understand the AquAmanzi approach better.

5.5.2.1.1 Regional Costs

Regional costs for all the AquAmanzi projects were summarized in their monthly progress reports. Using the progress reports from January 2002 to August 2003 one can determine the cost of water provision in the region. A comparison between the two reports also highlights the influence of economies of scale in the costing, as between December 2002 and August 2003 AquAmanzi retained management of fewer projects as the transfer process to the district municipalities had commenced.

Table 8: AquAmanzi Records January-December 2002

District Municipality	Population	House holds	Operating Cost (R/mnth)	Support Cost (R/mnth)	Total O&M Cost (R/mnth)	Total Cost (R/hh/M)	Revenue (R/mnth)	Deficit (R/mnth)
Amajuba DC25 (7 projects)	30 493	3 811	R28,158	R49,270	R77,428	R20.30	R19,189	-R58,239
uMzinyathi DC24 (7 projects)	33 512	4 189	R52, 681	R45,201	R97,882	R23.40	R14,215	-R83,667
uThukela DC 23 (8 projects)	34 608	4 326	R18347	R30,843	R49,190	R11.37	R2,999	-R46,191
Total (22 projects)	**98 913**	**12 364**	**R99,186**	**R125,314**	**R224,500**	**R18.36**	**R36,403**	**-R188,097**

Table 9: AquAmanzi Records January-August 2003 after FBW implementation

District Municipality	Population	House holds	Operating Cost (R/mth)	Support Cost (R/mth)	Total O&M Cost (R/mth)	Total Cost (R/hh/mth	Revenue (R/mth)	Surplus (R/mth)
Amajuba DC25 (5 projects)	20 747	2 593	R21,963	R40,571	R62,534	R24.10	R468	-R21,495
uMzinyathi DC24 (4 projects)	10 736	1342	R8,602	R46,076	R54,678	R40.70	R0	-R8,602
uThukela DC 23 (4 projects)	13 454	1682	R6,300	R39,361	R45,661	R27.15	R0	-R6,300
Total (13 projects)	**44 937**	**5 617**	**R36,865**	**R126,008**	**R162,873**	**R30.65**	**R468**	**-R36,397**

Interesting conclusions can be drawn from these two tables:

- The effect of Free Basic Water can be seen in the almost non-existent revenue collected in 2003. Very few people are using more than the FBW allowance, thus the full cost of the water is billed to the DM concerned.
- Although the tables are largely pre- and post-FBW, the increase in cost/hh/month cannot be attributed to the implementation of FBW. Rather, it is due to the decrease in projects and population served with the handing over of projects to the district municipalities. It appears that economy of scale in support costs played a major role in the low total cost of R18.30/hh/month in 2002.

- In 2003, the total management cost *increased* slightly despite a more than 50% *reduction* in population served. This pushed the total cost up from R18.36/hh/mth to R30.65/hh/mth, an increase of 67%. Table 10 below summarises the change in per household management cost from 2002 to2003.

Table 10: Increase in Costs with Decrease in Population

	Support/mentor costs	No. of households served	Cost/hh/month
2002	R125 314	12 364	R10.13
2003	R126 008	5 617	R22.43

5.5.2.1.2 Nquthu Costs – Historical and Planned

A case study of the Nquthu Municipality (DWAF, 2003) was published in 2003 as part of the national DWAF pilot research project. The study includes five rural villages in the municipal area that had detailed cost records. AquAmanzi were responsible for the operation and maintenance of these projects, and all costing is from their records. In December 2002 Ndatshane, Nquthu 1 and Nquthu 2 were handed over to the district municipality. The BOTT contract came to an end at the end of March 2004 and the remaining two projects had been transferred by then (uTWP, 2004). The income and expenditure records from this study are a very useful example of the real costs of rural water supply over the past few years. This study is independent of the SP2030, thus the real costs recorded at Nquthu have had no influence in the costing exercise for SP2030 (uTWP, 2004). Before the Nquthu report was finalised, uTWP developed budgets for the Nquthu schemes, these budgets were then included in the report and compared with the real costs to date.

The Nquthu Municipality is found within the uMzinyathi District Municipality (see Figure 2), and is predominantly rural, with a very small town making up its core. The Nquthu municipality has a total population of approximately 202,425 people. Of these, approximately 4,142 live in the town and 198,283 live in the rural areas (DWAF, 2003). The uMzinyathi DM is the WSA for Nquthu, uTWP is the bulk WSP, and AquAmanzi was the reticulation WSP for the rural areas (Johnston, 2003). AquAmanzi was appointed under the Build Operate Train Transfer (BoTT) contract with DWAF but was gradually phased out as schemes were transferred to the DM. As mentioned above, the BoTT contract officially ended in March 2004. Current negotiations anticipate that the uTWP will be the WSP for all water and sanitation in the uMzinyathi DM, and is scheduled to be officially contracted from July 2004 (Johnston, 2003). AquAmanzi set up and trained community based organisations as water committees who were responsible for day-to-day operations and maintenance. These committees have been disbanded as the uTWP will be responsible for all functions and will communicate with communities through ward councillors (DWAF, 2003).

Of the five schemes studied, Nquthu 1,2,3 and Ndatshane are supplied with bulk water from a plant operated by uThukela Water, while the Bambisanani scheme is supplied by a spring. Population and service level statistics are to be found in Tables 11 and 12 below:

Table 11: Population figures for five schemes

Scheme Name	Nquthu 1	Nquthu 2	Nquthu 3	Ndatshane	Bambisanani	Total
Total population	11 444	6 060	2 440	8 500	2 000	30 444
Total no. of households	1 430	758	305	1 062	251	3 806
Ave household size	8	8	8	8	8	8

(DWAF 2003, pg 6)

Approximately 88% of these households have an income of less than R1500/month and are therefore classified as poor. Due to this high percentage it is unlikely that many families in the area will be able to pay more than nominal amounts for water (DWAF, 2003).

Table 12: Levels of service at five schemes

Scheme Name	Nquthu 1	Nquthu 2	Nquthu 3	Ndatshane	Bambisanani	Total
House Connections	304	92	34	34	3	467
Street standpipes	72	127	37	131	22	389
No of families served by standpipes	1 126	666	271	1 028	248	3 339
Total households	1 430	758	305	1 062	251	3 806

(DWAF, 2003 pg 8)

Most households within the area have a level of service at RDP or higher, however, questionnaires done in the area for the DWAF study show 54% of the standpipes are not working (DWAF, 2003).

In order to determine the average annual cost of water supply to these households, the actual costs incurred since the commissioning of the schemes were used. These were obtained from the AquAmanzi December 2002 monthly reports for the schemes:

Table 13: Average monthly costs of water provision to the five schemes

Item	Monthly average (from commission to Dec 2002)					
	Nquthu 1	Nquthu 2	Nquthu 3	Bambisanani	Ndatshane	TOTAL
No. of Households served	1430	758	305	1062	251	3806
Total Overheads	R 7,583	R 2,785	R 1,701	R 1,767	R 7,450	R 21,286
Repairs & maintenance	R 592	R 576	R 289	R 144	R 519	R 2,120
Buy-in or Production Cost	R 3,336	R 3,146	R 874	R 441	R 1,898	R 9,695
Support & Mentoring cost	R 24,351	R 19,602	R 11,406	R 8,996	R 26,243	R 90,598
Total O&M Expenditure	**R 35,862**	**R 26,110**	**R 14,271**	**R 11,347**	**R 36,111**	**R 123,701**
Total expenditure/hh/month	R 25.08	R 34.45	R 46.79	R 45.21	R 34.00	R 32.50
Total expenditure/capita/month	R 3.14	R 4.31	R 5.85	R 5.65	R 4.25	R 4.06
Water Sales Revenue/month	**R 8,675**	**R 3,335**	**R 1,620**	**R 976**	**R 2,366**	R 16,972
Other Income/month	**R 139**	**R 191**	**R 136**	**R 31**	**R 68**	R 565
Profit / (Loss) per month	**-R 27,048**	**-R 22,565**	**-R 12,514**	**-R 10,340**	**-R 33,677**	-R 106,144

The average cost is R4.06 /capita/month, or R32.50/hh/month including bulk water. The expenditure above does not allow for asset replacement. The losses on these projects have historically been covered by the DWAF subsidy. This subsidy will be phased out in the near future and will therefore not be included as an income source for budget projections.

The cost to operate and maintain the Nquthu schemes is higher than the average costs for AquAmanzi over the three district municipalities (shown in Table 8) for the year 2002. This demonstrates the advantage of regional water provision where more costly schemes are balanced by those that operate more efficiently. This advantage should be maximised by the uTWP who could then allow for some cross-subsidisation between rural schemes.

The uThukela Water Partnership has drafted budgets for these schemes as they are expected to be the WSP (DWAF, 2003). These budgets are shown in Table 14 where they are compared with the historical costs in Table 13. It should be noted that historical bulk water costs from AquAmanzi are pre-FBW. These costs were adjusted by uTWP for the projected water consumption due to free water in order to do a financial analysis of the schemes.

Table 14: Comparison between proposed uTWP budgets (2003/2004) and historical AquAmanzi costs

	Nquthu 1	Nquthu 2	Nquthu 3	Bambisanani	Ndatshane	TOTAL
Historical AquAmanzi	R 430,344	R 313,320	R 171,252	R 136,164	R 433,332	R 1,484,412
Proposed uTWP budget (incl projected bulk water costs)	R 337,500	R 257,445	R 215,665	R 143,311	R 256,231	R 1,210,152

(uTWP budgets from DWAF, 2003, AquAmanzi budgets from December 2002 Progress Report)

The uTWP budget is equivalent to R26.50/hh/month or R3.31/capita per month, and does not allow for asset replacement. This is slightly less than the AquAmanzi budget despite the inclusion of a higher bulk water cost. These costs align with other costs discussed in this research, but do not match with the proposed SP2030 marginal scenario. The reason for this is unknown, but shows that what uTWP is actually budgeting in reality is much more attainable than what is outlined in the SP2030.

In order to establish the affordability of FBW in this area, expenditure must be compared with predicted income. The two sources of income are the ES and user charges, with the former being the primary source. The portion of the ES for water services is allocated to the WSA, which is uMzinyathi DM. Calculating this exact portion as determined by National Treasury is complicated and will be discussed in Section 6.4 of this report. A provisional 30% of the total ES received by the DM will be used for the illustration below:

Table 15 shows two scenarios using the population data used in this research and the official population figures used by National Treasury in the calculation of the ES allocations.

Table 15: Equitable Share allocations for uMzinyathi DM

	DWAF Nquthu study	Division of Revenue Act (2003)
uMzinyathi ES allocation 2003/04	**R34,823,000**	**R34,823,000**
30% of ES allocation for water	R10,446,900	R10,446,900
uMzinyathi Total Population	616 000	426 934
uMzinyathi Poor Population	572 880	202 130
Allocation (@30%) per capita /month (poor population only)	**R1.52**	**R4.31**

As is illustrated above, correct demographic figures are essential for the determination of the affordability of FBW. The reality is that the Equitable Share allocations are based on the population used by the Division of Revenue Act (2003), and with those numbers, FBW is affordable. If, however, the population figures of the uMzinyathi Water Services Development Plan are correct, then the poor population is significantly higher than that which has been allowed for in the allocation of ES. This makes FBW unsustainable for the municipality.

The expected income from house connections can be calculated from the proposed tariff structure for the area. This tariff structure is based on service level:

Communal standpipes - 1.2Kl per household of FBW

House connection – R20 monthly charge + R4/kl charge. No FBW.

It is predicted that those with house connections will use 6kl/hh/month. Therefore, an average monthly bill of R44 is expected for all house connections. This R44 was used to calculate the approximate income for the 5 schemes (DWAF, 2003):

R44 x 467 private connections **= R246,576 income per annum for the five schemes**

In order to determine the affordability of FBW in the area, a comparison was made of income and expenditure, and the amount needed from the ES to cover the deficit was estimated. The comparison is shown in Table 16. The proposed uTWP budget has been used as uTWP is due to take over as WSP in July 2004, and the proposed budget is similar to the historical data.

Table 16: Affordability of FBW

	uTWP budget (Rands)
Total O&M cost for the 5 rural schemes (from Table 13)	**R1,210,152**
Income from schemes	**R246,576**
Surplus (Deficit)	**R963,576**
Population	30 444
Deficit per capita per month (amount required from ES)	R2.64

As can be seen, if the WSDP indigent population figures are correct (Table 5) and the Nquthu costs are representative of rural water supply costs in uMzinyathi DM, the percentage allocation of the ES needs to be significantly higher than 30% in order for the municipality to remain out of debt. A further concern is that the costing scenario relies on 100% cost recovery from all users with house connections, and does not allocate any FBW to these users. If tariffs are not collected from those with house connections every month, the shortfall will be even greater, thus highlighting the need for an effective billing and collection system to ensure the sustainability of FBW. It is clear that the district municipalities cannot allocate nominal percentages of the Equitable Share to FBW without resulting in compounding debt over the years.

The calculations thus far exclude asset replacement. Adding this component, one can unfortunately predict that Free Basic water will probably not be sustainable in this area, unless there are significantly more house connections (and assuming that there is a high level of cost recovery from those house connections). If this does not happen, the uTWP will be reliant on cross-subsidisation to cover the deficit.

6.2 Alfred Nzo District Municipality

6.2.1 Experience to date

The Alfred Nzo DM's Free Basic Water is in the third year of implementation. The DM is divided into three zones, and a Support Service Agent (SSA) is contracted for each zone. The agents are responsible for the operation and maintenance of all the schemes in their zone. These do not include the towns. The approximate population covered by the SSAs is 300 000, which is half of the population of the District (Zellhuber, 2003).

The three SSAs are required to work in a fairly close relationship with each other. They have a monthly meeting with the DM, where they report on progress, as well as discuss problems, improvements and lessons learnt. Each month an operations and maintenance report is submitted by each agent, including a system of Key Performance Indicators, water quality tests, and milestones. Any information gathered, systems developed etc are to be shared amongst the agents so as to have the same standard of work and to reduce unnecessary overlap or duplication (Zellhuber, Gibson, Lenehan, 2003).

In the first year of the contract, the following work was required by each SSA (Mvula Trust 2002):

- Assessment of the Schemes (0 – 3 months)
    - Technical assessment of the schemes
    - Institutional assessment of each scheme
    - Community / household assessment (Baseline survey)
    - Carry out minor refurbishment and repairs to ensure schemes are technically functional and water is flowing.
    - Capacity and training needs assessments
    - Mentoring and Support of existing Village Water Committee / Project Steering Committee
    - Assessment of SSA systems and practices

- Operation and maintenance (3 – 12 months)
    - Continue capacity building and training of Community Based Organisation (CBO)
    - Set up CBO agents to oversee the schemes
    - Refurbish schemes needing considerable capital works to make them fully functional
    - Continue mentoring support: O&M, financial, institutional and social mentoring, health and hygiene promotion, any additional ad hoc services, etc.
    - Developing and set up systems and procedures for use by the Alfred Nzo DM to monitor WSP operations and performance.

- In the 2nd and 3rd years, the following was required (Mvula Trust, 2003):
    - Undertake assessments of all new schemes to be transferred to the Alfred Nzo DM, preparations of implementation plans complete with budgets for the mentoring support that will be required.

- Ensure that all the schemes under the SSAs control are both technically and institutionally functional.

6.2.2 Costs

Maluti Water is the consultant appointed as the SSA for the Umzimvubu North section of Alfred Nzo DM. This area covers 39 water schemes of varying sizes and service types/levels. The population served is recorded as 142 007 (Maluti Water, 2003). Maluti Water is given an annual budget that is a combination of Equitable Share funds from the municipality and DWAF funding. The Equitable Share funds are used to fund the CBO costs of the schemes, and the DWAF funds cover the management, technical support, ISD support, and disbursements (Gibson, 2003). The Maluti Water expenditure will be used to demonstrate the typical cost for water supply in Alfred Nzo DM.

The budgets for the two funding sources operate on different year-ends. Due to the dates of available data, the costing for this report will be calculated from July 2002 – June 2003 (Maluti Water, 2003).

Combined DWAF and ES budget for July 02- June 03:	R4 371 425
Actual Expenditure:	R4 154 448
Cost per capita per annum:	R29.25
Average cost per capita per month:	R2.44
Cost per household per month:	R17.08

Note: this includes the SSAs professional support costs.

Also note that the area served by Maluti Water includes a relatively high number of schemes (16 out of 39) which are fed by gravity sources (Maluti Water, 2003). Gravity fed water schemes are cheaper to run than pumped schemess.

The other two SSAs serving Umzimvubu South and Umzimkhulu have slightly higher costs as they have less gravity schemes. Their average costs are between R3.00 and R3.50 per capita per month, which is still economical (Zellhuber, Lenehan, 2003).

6.3 Ngqushwa Local Municipality

6.3.1 Experience to date

Ngqushwa Local Municipality does not have a Free Basic Water policy, and is thus not officially implementing Free Basic Water. However, as mentioned in Section 5.3 above, FBW is being supplied by default to many areas

Rural areas are receiving ad hoc repairs and maintenance to their water supplies. This service is being provided at a cost comparable to efficient, effective systems in other municipalities. However, the current situation is unsustainable in the long term as the lack of regular, preventative maintenance is bound to result in failure of water supplies. With no allowance for asset replacement, the municipality will not be able to afford to repair crippled systems. This highlights the need for municipalities to prioritise the development and implementation of a researched, tested arrangement in order to save the unnecessary waste of meagre resources.

The contractual agreement between the Ngqushwa Municipality and the Amatola Water Board is not clear nor is it an efficient system. The water board bills the municipality at a flat rate of 6kl/hh/month. This is regardless of actual water consumption, and masks users using more than 6kl. The flat rate is also reliant on a population figure that has not been verified. This system does not encourage the Water Board to carefully monitor high users or water leaks, as they are receiving revenue regardless of the situation at ground level. This also places a big emphasis on population figures.

6.3.2 Costs

6.3.2.1 Population Figures

In order to properly assess and analyse the costs of providing Free Basic Water, it is essential that correct population and indigence data be used. From the data obtained for this research, a large discrepancy in the demographic information was discovered.

1996 Census figures	Total population	= 94 111
DWAF data	Total population	= 234 634
Division of Revenue Act (2003)	Total population	= 93 975
DWAF FBW website (2004)	Total population	= 109 263
Palmer Development Group Data	No. of households	= 30 519

Combining Palmer Development Group village information (No. of households) and data from other service providers who have detailed, reliable and accurate information, the number of occupants per household is taken as 4.54. Based on this figure the total population is therefore 138 556. This population correlates with data from the Amatola Water Board, who state that they supply 80 893 people, comprising 58% of the total population in their region.

For the purposes of this research it is therefore assumed that the most accurate total population figure is 138 556. Both this figure and the census figures will be used in the calculations, as the latter are used in the allocation of the Equitable Share.

6.3.2.2 Consumption Figures

A second factor that is important to determine for cost calculations, especially with regards to FBW, is water consumption.

The consumption figures are split into information obtained from Palmer Development Group, which covers the majority of the villages, and the actual metered water consumption from the Amatola Water Board.

Table 17: Consumption figures

	%	Households	Population	Consumption l/c/d
Yard connections	1.80%	551	2 502	60
Communal standpipes (with schemes)	46.70%	14 267	64 772	25
Communal standpipes (no schemes)	16.20%	4 948	22 464	15
Communal standpipes (inadequate with schemes)	5.10%	1 560	7 082	10
No Data (with schemes - assumed stand pipe)	6.80%	2 063	9 366	25
Boreholes - no schemes	7.80%	2 366	10 742	25
Schemes and boreholes	2.80%	862	3 913	25
No data - no schemes	5.40%	1 641	7 450	15
No supply	7.40%	2 261	10 265	5
Totals		**30 519**	**138 556**	

From this table it is evident that the Sandile and Wesley Bira schemes need to be or are currently being cross-subsidised from the other Amatola Water Board schemes in Ngqushwa that are consuming less than the average of 25l/c/d per person.

Table 18: Service Level Summary

Summary of PDG data used in calculations		
Clearly adequate RDP level of supply	49%	14 818
Possibly RDP	23%	7 011
BHs and low level SPs	16%	4 788
No data; no supply	13%	3 902
	101%	30 519

The Amatola Water Board villages' bulk consumption figures per settlement or village are summarised in Table 19 below.

Table 19: : Bulk consumption at Amatola Water Board schemes (2001 figures)

	No. of Villages	Population Figure from Amatola Water Board	Actual Consumption (kl/d)	Consumption if 25l/c/d	No. of Villages using more than 25l/c/d	% of villages using more than 25 l/c/d	% more than 25 l/c/d
Sandile scheme	41	44 231	1553	909	19	46.3%	171%
Dabi scheme	2	6 046	64	151	0	0	42%
Glenmore scheme	3	14 582	336	365	1	33.3%	92%
Laing scheme	3	4 398	30	110	0	0	27%
Peddie scheme	3	2 815	28	64	0	0	44%
Wesley Bira scheme	9	8 822	349	218	5	55.5%	160%
Totals		80 893	2361	2022			

Total actual consumption of 2361.3 kl/d is higher than "theoretical consumption" of 2022.34 kl/d based on all households consuming 25l/c/d, however this difference is at present only a small excess on the FBW allocated total. The Amatola Water Board is at present billing the LM for the theoretical consumption based on the 25l/capita calculations.

The actual consumption levels have probably increased due to the water being free and are predicted to increase further as levels of service increase, so it is important that cost recovery systems put in place. If 49% of the households (i.e. those with access to RDP levels) consume more than 25 l/c/d then this situation will become a financial drain on the DM should there be no cost recovery from those communities consuming more than their 6000 l/hh/mth

6.3.2.3 DWAF establishment and operational costs (2002)

As previously mentioned, DWAF receives an annual subsidy for water management in the district. Their total budget was R2.7 million which was divided between all the schemes managed in the district and an approximate proportion was used to calculate the expenses for the Ngqushwa Local Municipality.

Table 20: DWAF costs for water services in Ngqushwa LM

Itemised cost	Total Cost per Annum
TOTAL Personnel & salaries expenses	R356,174
TOTAL Administration & overheads expenses	R101,682
TOTAL Stores and small stock	R39,200
TOTAL Equipment	R36,100
TOTAL Professional and Special	R65,739
Grand total	R598,895

6.3.2.4 Amatole District Municipality Establishment and Operational Costs

These were not made available for the research.

6.3.2.5 BoTT Service Provider Costs

Amanz'abantu were the BoTT agents responsible for operating the Peddie schemes. Peddie Regional scheme has been transferred to the Amatola Water Board (bulk provider) and the Amatole DM. They are currently still operational in the Peddie South scheme. Their costs to provide water to these areas are shown in Table 21 below. These costs include the Community Based Organisation WSP costs and the Support Service Agents costs. These schemes serve three villages and a population of 2 815 people.

Table 21: Peddie Regional & South Project costs from Amanz'abantu

(Aug 2001)	Peddie Regional Avg / month	Peddie South Avg / month
Consumption Kl		
Total Consumed	311	332
l/c/d	2.74	1.19
l/c/d (active tokens)	9.77	15.35
Bulk Supply Kl		
Total Supplied	536	372
UFW in Kl		
Total UFW Kl	226	40
Total l/connection/hr	8.49	0.66
Total l/km/hr	19.64	1.06
Total UFW %	41%	12%
O&M COST (Rands)		
BULK WATER COST	R1,416	R2,918
MATERIAL	R2	R57
Administration and Management – VWC	R496	R5,462
Finance and cost recovery - PIA / O & M	R1,000	R2,153
TOTAL LABOUR	R1,496	R7,614
TOTAL COST	R2,914	R10,589
INCOME (Rands)		
Projected from demand	R1,242	R1,329
RATIOS		
Cost per Kl (Consumed)	R9.38	R41.76
Cost per Kl (Produced)		R37.21
Cost per capita	**R5.32**	**R6.20**
Cost Recovery % (*)	43%	13%

(*) – the cost recovery is dependent on the Free Basic Water policy implementation of the LM and DM. The cost recovery from these two Amanz'abantu projects is taken to be zero (as it is negligible as a % of the whole).

The average per capita cost for water supply to the Peddie area is R6.09/month

6.3.2.6 Best estimate of costs for year 2002

The costs in Tables 20 and 21 all contribute to water service provision in different parts of Ngqushwa Local Municipality. In order to estimate the total costs for water provision in 2002, all the information was collated and summarised into Table 22 below. Two costs have been calculated - the first column shows costs calculated using the best estimate of the population as explained in section 6.3.2.1 of this report; and the second with the census 1996 data.

Table 22: Estimate of current water provision costs in Ngqushwa (2002)

	2002 based on population of 138 492 (Rands)	2002 based on census (1996) figures (Rands)
COST SUMMARY (per annum)		
Bulk Supply based on tariffs by Amatola Water Board	R2,656,516	R2,656,516
Material & Services	R202,524	R202,524
Chemicals & Energy	R35,013	R35,013
Transport	R151,682	R151,682
Labour	R621,207	R621,207
WSP Costs	R165,541	R165,541
TOTAL Rand per annum	**R3,832,483**	**R3,832,483**
COST RECOVERY		
Peddie South Income (Amanz'abantu)	R15,944	R15,944
Other income from small towns etc.	R246,036	R246,036
Total Required for payment from FBW to Amatola Water Board	**R3,570,503**	**R3,570,503**
Estimated number of indigent households	30 518	20 739
Subsidy requirement R per household per annum from equitable share	**R117**	**R172**
Subsidy requirement R per household per month from equitable share	**R9.75**	**R14.35**
Subsidy requirement R per capita per month	**R2.17**	**R3.19**

6.3.2.7 Estimated cost of providing a efficient, sustainable water to Ngqushwa LM

A costing exercise was done for each of the three institutional arrangements mentioned in section 5.4. Due to the fact that these figures are estimates/projections and include many assumptions and variables, the detailed breakdowns are not discussed. Instead, the range of the institutional arrangement costs is given to provide an estimate of the total costs of providing a fully operational water service to the Ngqushwa Local Municipality:

Table 23: Estimated costs of proposed WSP institutional arrangements

	2002 based on census (1996) figures Cost per annum
Estimated WSP costs for proposed institutional arrangements	R4million – R5.4 million
Bulk Water supply based on tariffs by Amatola Water Board	R2.656.516
Total estimated cost	R6,6 million – R8 million
Income from tariffs	R262.000
Subsidy requirement R per household per annum (2002 values) from equitable share	R305 – R373
Subsidy requirement R per household per month (2002 values) from equitable share	R25 - R31
Subsidy required R per capita per month	R5.50 – R6.88

This is significantly more than that which is currently being spent on water provision in the LM. The reason for this is that the present system is inadequate, and needs to be upgraded to an acceptable standard. It should also be noted that these costs are only first order and the real costs could be lower. It is also important to note that the costs are exclusive of asset replacement.

6.4 Vulindlela Water Scheme

6.4.1 Experience to date

Throughout the six years that Umgeni Water has been running the Vulindlela scheme, it is not the operation and maintenance problems that stand out as the most challenging, but the issue of cost recovery. As seen in the graph below, the number of customers paying for water was a low 40% before FBW was implemented. With the implementation of FBW this dropped considerably (as expected), as approximately 60% of customers use less than 6kl per month (Hlope, 2003). However, from the 40% who were using over the FBW allowance and were receiving bills, payments reduced each month post-FBW to less than 10% in December 2002. It is clear that Free Basic Water has exacerbated the non-payment problem in the community (data obtained from Umgeni Water).

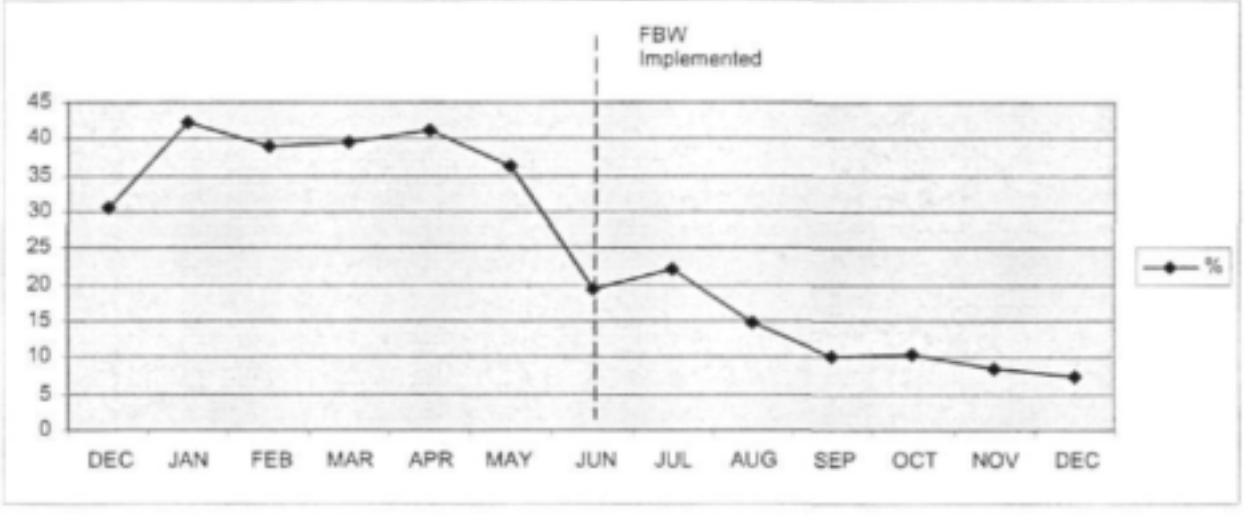


Figure 12: Percentage customer payments compared to number of Active Meters Dec 01-Dec 02

The problem of non-payment is multi-faceted (Lilmohun, Shangase, 2003):

- There is insufficient staff to constantly be checking for illegal connections;
- There is insufficient staff to consistently apply restrictions when bills are not paid;
- Customers using less than 6kl cannot be disconnected as a mechanism to force payment of debt from pre-FBW as this would infringe on the constitutional right for everyone to have access to 6kl per month;
- With the implementation of FBW, there are many customers who mostly use less than 6kl. When, for one or two months they exceed the 6kl limit, and they receive a bill, it is ignored;
- Water use due to illegal connections is difficult to prosecute. If these users are not customers of Umgeni Water (i.e. there is no meter), then Umgeni Water cannot issue a fine. It is a complicated legal procedure to claim for damages, and it is not deemed worthwhile by the water board. Instead, the connection is removed and the person reported to the local Induna for community discipline and policing;
- People have realised that they will receive 6kl per connection, and have applied for a second or third connection in order to receive double or triple the FBW allowance without having to pay (this is stopped if discovered and the connection is removed);

- There have been cases of politicians announcing Free Water (i.e. unlimited volume per month) not Free *Basic* Water as a part of their campaign strategy. In a similar line politicians have encouraged people to not pay for water.

For all these reasons, the customers are going deeper into debt every month (see Figure 13, data obtained from Umgeni Water), and this places an increasing financial burden on Umgeni Water. Umgeni Water has been able to absorb the cost due to its other income sources, but the uMsunduzi Municipality will be less easily able to do so when the transfer is complete. An effective collection system, combined with the political will to enforce payment for water consumed above the FBW allowance is needed in order for this scheme to be sustainable.

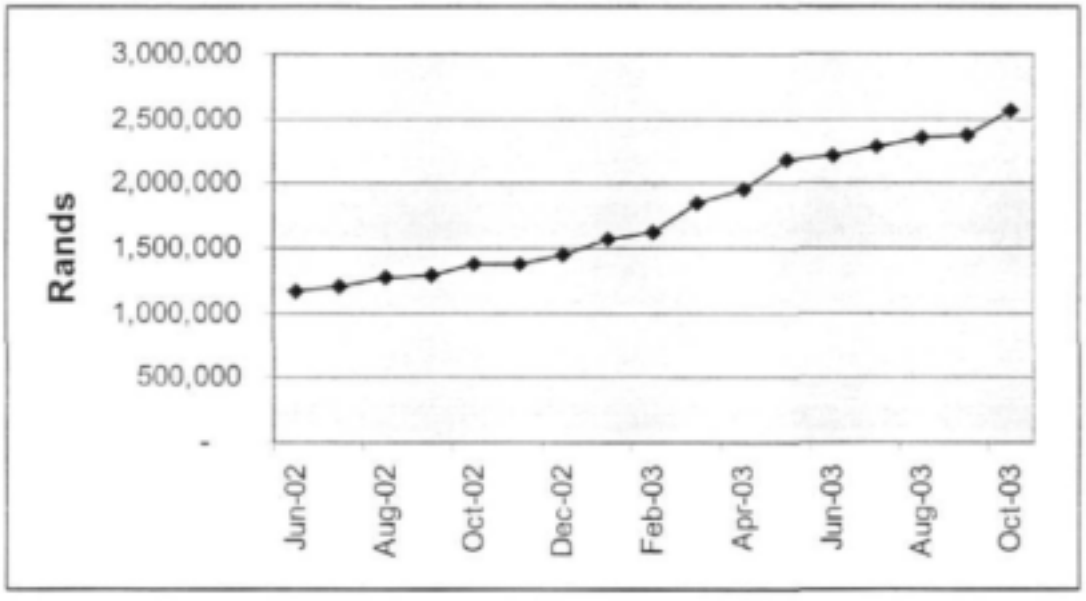


Figure 13: Increasing Arrears

6.4.2 Costs

The Vulindlela Water Project has had a detailed budget for each financial year. This budget includes not only operations and maintenance, but also includes all management, interest on finance, depreciation, loans etc. Below is the actual expenditure for the 2002/2003 financial year. This shows what the real costs of running the scheme are:

Table 24: Vulindlela Rural Scheme operation and maintenance Cost Figures (FY 2002/2003)

Maintenance Costs	
Plant and Equipment hired	R5 ,170
Maintenance Contracts- Plant	R36,263
Material - Small tools	R10,890
Operating Capital Expenses	
Pipe Specials	R4,394
Renewals	R3,660
Fuel & lubricants	
Contribution Rural Offices	R143,698

Workshop - Repairs, artisan rates, materials, management	R1,524,407
Workshop - Buildings	
Workshop - Electrical	
Workshop - Mechanical	R682
Workshop - Vehicle	R961
Total Maintenance Costs	**R1 ,730,127**

Note: The item 'Contribution to rural offices' refers to wages paid to the branch office staff, and the item "workshop' refers to all Umgeni Water staff working on the project

Umgeni Water, being the bulk supplier, has not included the cost of bulk water in their expenditure. This, however is a cost for the uMsunduzi municipality who since July 2003 have been paying for bulk water. The annual expenditure for bulk water at R2.79/kl is approximately R2.7 million. This R2.7 million, added to the total in Table 24, gives an operation and maintenance total of R4 430 127.66. This translates to R18.45 per household (typically 6 persons) per month, or R3.07 per capita per month. At this level, this is a cost-effective scheme.

However, a large proportion of the *real* total cost of the scheme is depreciation and interest. This must be accounted for to calculate whether the scheme is financially viable or not.

Table 25: Vulindlela Rural Scheme Full Financial Costs (FY 2002/2003)

Indirect Expenditure	Rands
Depreciation - Immovables	R12,139,104
Govt grant	-R751,147
Insurances	R270,445
Interest - External	R16,166, 435
Total Indirect Expenditure	**R27,824,837**
Total Direct Expenditure	**R4,130,127**
Total Cost	**R31954,965**
Total Sales	R3,568,420
Deficit	-R28,386,544

The total cost is R130.87 per household per month expenditure, or R21.81 per capita per month. The total sales above includes the Equitable Share portion to cover the FBW usage, and all revenue from households exceeding the FBW allocation (but the latter is negligible). As can be seen from Table 25, the Vulindlela Water Scheme is running at a loss (allowing for all costs) of approximately R28 million per annum. However, it is not usual to factor capital depreciation and interest into running costs in rural water supply in South Africa. For this reason the monthly per capita cost of R3.07 derived above is taken as the Vulindlela figure.

6.5 Nhlungwane Water Project

6.5.1 Experience to date

The community has been managing their water scheme very successfully since its commissioning, with very little outside assistance. Each family pays R7 a month in order to be able to get water from the system. The taps are opened once a day for an hour in the morning. Families are rationed to three 25 litre containers per day (except on Saturdays, when they get five 25 litre containers) (Water Committee, 2003).

The pump house is kept clean and the engine is serviced according to the maintenance specifications. The committee pays in cash for the equipment, services, fuel, and salaries. The pump records are kept up to date, and hang on a hook in the pump house. These records show that water losses have not exceeded 20%. Although there have been some interruptions to the supply when the operator has stopped pumping due to a fault that she did not know how to fix, there has been only one major problem since commissioning – one of the reservoirs was leaking badly.

The community does not receive Free Basic Water, and have had negligible communication from the district municipality or uThukela Water Partnership regarding when it is expected to be implemented. Most people questioned as part of this research, did not know what FBW was or how it applied to their lives. As part of this research, the community participated in a series of workshops to educate them on FBW and how it would impact their current management system. Various options were discussed for the possibilities of developing an agreement with their WSA that allowed them to retain partial management of the scheme, as well as what was to be done with the R7 levy. The full report on this process and the conclusions reached can be found in Appendix 4

6.5.2 Costs

6.5.2.1 Operation

The operating costs have been consistently very low due to good management, regular maintenance, and low wages. The typical monthly expenditure is as follows:

Administrator:	R50
Operator:	R300
Plumber:	R50
Diesel:	R500
Service Costs:	R200
Transport/other:	R150
	R1170

The maintenance of the scheme is paid out of the savings generated from the monthly levy. This maintenance has not only covered minor repairs, but the community also paid for a professional contractor to do repairs to a failed reservoir (Committee Book keeper, 2003).

All income and expenditure records have been kept since the inception of the project. Figure 14 below shows these records for 1999-2001 (Partners in Development, 2004):

Figure 14: Income and Expenditure records

6.5.2.2 Savings

From the income each month, R450 was put aside for an operations and maintenance (O&M) reserve. Over 5 years the community saved R20 000 from this, despite having to pay for reservoir repairs and all other minor O&M. In 2002, they were awarded R20 000 for their good management of the scheme by the Mvula Trust. Their savings are now in excess of R40 000 (Water Committee, 2003).

6.5.2.3 Total Costs

The total cost per household per month is R7. This is approximately R1 per capita per month. This cost includes all operation, maintenance, management and some asset replacement. The community has thus far managed to cover all the costs the scheme has incurred to date. It is doubtful whether they will be able to cope with a major failure of the system, but most problems are prevented through good management.

6.5.2.4 uMzinyathi District Municipality Budget for Nhlungwane

A generic budget format has been developed by the uTWP for all community water schemes. The figures for Nhlungwane which appear in Table 26 below are rough estimates of what might be required and they and would be refined in future years.

This budget has been drafted by the uThukela Water Partnership in a general format that has been applied across various water schemes. Although the total budget is final, there is room for transfers between the budget categories, or if it becomes clear that the specific needs of the Nhlungwane water project differ from the above proposed budget split.

Although this was the budget allocation for July 2003 – June 2004, the municipality has not yet started work at Nhlungwane and none of this money was spent.

Table 26: uTWP/uMzinyathi DM Operations and Maintenance budget for Nhlungwane for 2003/2004

OPERATIONAL EXPENDITURE			
REMUNERATION			Budget 2003\2004
02	001	Allowances-Board	
02	002	Awards	
02	003	Bonuses	
02	004	Bursaries	
02	005	Compensation Commissioner	R200
02	006	Contributions	
02	007	Funeral Benefits	
02	008	Group Life	
02	009	Leave Pay	
02	010	Medical	
02	011	Overtime/Standby	
02	012	Pension	
02	013	Protective Clothing	R 500
02	014	Rations Supplied	
02	015	RC Levies	
02	016	Recruitment	
02	017	Relocation Expenses	
02	018	Salaries	R15,240
02	019	Skills Development	R152
02	020	Subsidies	
02	021	Training	R 3,000
02	022	Unemployment Insurance Fund	R 152
02	023	Vehicle Allowances	
		Sub Total	**R 19,244**

GENERAL EXPENDITURE			Budget 2003\2004
03	001	Administration Cost	
03	002	Advertisements & Marketing	
03	003	Bad Debts	
03	004	Bank Charges	
03	005	Books & Publications	
03	006	Chemicals	R196
03	007	Cleaning Materials	R200
03	008	Communication	R100
03	009	Consumables	
03	010	Conferences, Seminars	
03	011	Deployment	
03	012	Depreciation	
03	013	Electricity	
03	014	Entertainment	
03	015	Fuel & Oil	R5,913
03	016	Insurances	
03	017	Inventory Loose Tools	
03	018	Laboratory Services	
03	019	Levies	
03	020	Licenses	
03	021	Management Support Services	R21,374
03	022	Membership Fees	
03	023	Planning & Development	
03	024	Printing & Stationary	
03	025	Professional Fees	
03	026	Delivery Expense	
03	027	Rental	
03	028	Research	
03	029	Safety	R100

03	030	Security	
03	031	Small Tools	R500
03	032	Subsistence & Traveling	
03	033	Vehicles	
03	034	Water Analysis	R2.280
03	035	Water Purchases	
03	036	Water Research Levy	
03	037	Water Resources Management	
03	038	Taxes	
		Sub Total	**R 30,663.42**

MAINTENANCE & REPAIRS			**Budget 2003\2004**
04	001	Buildings, Grounds & Fencing (Civil)	
04	002	Cathodic Protection	
04	003	Dams	
04	004	Electrical Sub Stations	
04	005	Instruments	
04	006	Laboratory Equipment	
04	007	Machinery & Plant Equipment	
04	008	Office Furniture & Office Equipment	
04	009	Pipelines	R 4,000
04	010	Plant	
04	011	Pump Stations	R 6,000
04	012	Purification	
04	013	Reservoir	R 1,000
04	014	Roads	R 2,000
04	015	Vehicles	
		Sub Total	***R 13,000***

CAPITAL EX-REVENUE			**Budget 2003\2004**
07	001	Machinery & Equipment	R 500
07	002	Office Furniture & Equipment	
07	003	Radio & Communications	
07	004	Survey Diagrams	
07	005	Vehicles	
07	006	Water Connections	
07	007	Computer Software	
		Sub Total	**R 500**

TOTAL OPERATIONS EXPENDITURE	**R 63,408**
TOTAL CAPITAL EXPENDITURE	
TOTAL EXPENDITURE	**R 63,408**
TOTAL INCOME	
OPERATIONAL EXPENSES	**R 63,408**
SURPLUS / DEFICIT	**R -63,408**

This budget of R63 408 equates to R5 284 per month expenditure which is R24.02 per household (or R3.43 per capita) per month, which includes all O&M costs at both community and WSP level and is comparable to the cost of water provision in the other case studies.

6. Discussion

6.1 uThukela Water Partnership

The uThukela Water Partnership has set a high target for the implementation of water services. If they manage to secure external grant funding to fulfil their *optimal scenario* then the service level in this region will most likely be of the highest standard in the country. If, however, they are unable to secure these funds, the *marginal scenario* will be similar to the programmes being implemented in the other case studies, with similar financial, and operations and maintenance challenges. The defining difference between this case study and the others, however, is the regional partnership that will be implemented soon. This partnership has many opportunities for economies of scale, and cross-subsidisation. As this Tugela Basin is primarily rural, and poor, this partnership could prove to be the only way sustainable water provision could be realised in these district municipalities.

The uTWP proposed SP2030 *marginal scenario* budget for FY2003, when compared with the *historical cost* of supplying water in the region is at least 300% higher than any other service provider:

Table 27: Comparison of Costs for Water Supply in the uTWP Region

CASE STUDY	HISTORICAL COST (Cost /household /month)	ESTIMATED COST WITH FBW (Cost /household /month)
uThukela Water Partnership	N/A	R113.00
Nquthu Case Study	R33.59	R26.50
Nhlungwane Case Study	R7.00	R24.00
AquAmanzi Projects in uTWP region	R18.36 - R30.65	R18.36 - R30.65

The uTWP SP2030 budget may need to be reconsidered in the light of the Nquthu study showing the significant deficit that will accumulate due to very low revenue collected from rural areas, and the inability for the Equitable Share to cover the costs despite 30% contributions (refer to Table 13).

As already mentioned, the uTWP has the benefit of the economies of scale that will arise due to the extensive area and the population served. These type of benefits were illustrated in the AquAmanzi records in Tables 8 and 9, where the management cost of serving just under 100 000 people was 40% lower (per household) than for serving 45 000 people. With the current uTWP served population at 159 140 and the potential population at 1.78 million, management costs *should* be low. Here, the discrepancy between the SP2030 planned budget (R113/hh/month) and the uTWP provisional budgets for both Nhlungwane (R24/hh/month) and Nquthu (R26.50/hh/month) should be highlighted. Whereas the SP2030 budget is exceptionally high, the provisional budgets are cost effective - with economies of scale being a likely explanation.

In conclusion, these case studies show that a budget of between R3.00 and R4.00 per capita per month is a reasonable estimate on the cost of the provision of water to rural areas within the uTWP region. However, even this budget (of R3.00 to R4.00) does not appear to be affordable based of current income

and Equitable Share allocations in this region (see Table 32). In order for water to be affordable, it is essential that the correct poor population is established, and that FBW is targeted at the poor only. Further, cross-subsidisation from towns and large consumers will also be a vital contributing factor.

6.2 Alfred Nzo District Municipality

The Alfred Nzo District Municipality began the process of implementing Free Basic Water in rural areas soon after the first announcement of the government policy in 2000. As a result of this prompt action, FBW has been in operation for almost three years already. The institutional arrangement that was developed has been tried and tested over this time, and is proving to be effective and efficient. The schemes that are fully operational consistently supply clean water to communities - problems are dealt with quickly (normally within 24hrs) and monthly maintenance is done on each scheme. Old schemes have also been refurbished and re-commissioned by the SSAs thus increasing the percentage served.

There is regular communication between the community committees, the SSAs and the district municipality, keeping all parties accountable and up-to-date on their role in the system. As a part of this communication, a detailed monthly reporting system has been developed which has a series of Key Performance Indicators that are applied to each scheme. In order to make all this information easily available, a GIS system is being set up to track progress, trends, and to red flag potential problems.

Alfred Nzo District Municipality has increased their Equitable Share contribution to water significantly. In FY2002/2003 R16 000 000 was allocated to rural water supply and R8 600 000 to water supply for the towns. This shows a commitment by local government to water services provision. Together with DWAF OTT funds, this money has been very efficiently utilized (at R2.50 – R3.50 per capita per month). FBW is actually being made available in the rural areas of the Alfred Nzo DM – unlike many other DMs who have only committed on paper and have not implemented their policies and plans yet.

The DM aims to eventually stabilize costs at R2.80 per capita per month (2003 value) for water supply in the rural areas. This does not include WSA costs (which are paid for with a separate budget) or asset replacement (the latter is being motivated for by the Director of Water and Sanitation who sees the urgent need to invest money each year for future replacement of infrastructure). Furthermore, with the phasing out of DWAF subsidies over the next few years, the municipality will need to increase the percentage Equitable Share allocated and perhaps adjust tariffs to cover the deficit.

The situation at Alfred Nzo DM is currently good, and the system implemented is working better than many in the country. The plan (perhaps somewhat idealistic) is for the SSAs to gradually work themselves out of a job as they capacitate the local committees as the WSPs, and as the ANDM itself develops additional management capacity. This will take a number of years of reducing the role of the SSA as capacity increases in the communities. This would be the ideal. However, there are underlying problems that may cause the current institutional arrangement to be drastically revised in the next few years:

- The Alfred Nzo DM politicians are still sceptical about the SSA contracts. Despite it being clearly cost effective, they are hesitant as most of the money goes to private companies (SSAs). The Deputy Director of Water and Sanitation constantly has to assure the politicians and prove that the system is the best option.
- A second threat to the current institutional arrangement is the approximately 114 staff that DWAF intend to transfer the DM in the next few years. The DM will have to find a role for these new staff members. The municipality may try to use these new staff members to continue the SSA work, but most do not have the required skills.

It is thus ironic that the future of perhaps South Africa's best example of rural water supply management and Free Basic Water provision is by no means certain.

6.3 Ngqushwa Local Municipality

The primary obstacle to the implementation of Free Basic Water in Ngqushwa is the lack of institutional capacity. There cannot be a significant improvement in the current situation unless this is dealt with. There is duplication of services provided by the Community Based Organisation WSPs, Amatole DM and the DWAF maintenance teams due to lack of communication between these parties. Both the DWAF and Amatole DM maintenance teams function almost entirely on crisis management principles. The major cost implication is in their establishment costs and the lost opportunity costs of resources not shared.

Apparently only a limited number of the preventative maintenance activities are actually carried out. The CBO WSPs have these functions on their performance contracts but there is no monitoring to ensure that they actually do them. These CBOs need to be recognised and empowered to perform this valuable function. This should be formalised in the policy. The Amatola Water Board has indicated that all its schemes do have a preventative maintenance programme in place. This is perhaps a reason for extending the Amatola Water Board function to include reticulation water service provision on these schemes - maintenance teams are already going to these schemes regularly and the additional cost for servicing the distribution lines should be significantly less than setting up a separate maintenance team from the LM, DM or a private sector organisation.

There is very little or no cost recovery-taking place, which makes the water services almost totally reliant on the FBW equitable share allocation. The Amatola Water Board is currently getting paid a "theoretical" value based on population served against a tariff. Therefore, regardless of actual consumption or performance, the Amatola Water Board is guaranteed a fixed income from the water supplied to the rural families. Most schemes are not using their monthly six kilolitre allowance per household, with the exception of the Sandile scheme which is being subsidised by those using less. As a result of the high usage at Sandile, the LM still has a high bulk water invoice from the Amatola Water Board. It is important the cost recovery mechanisms are put in place to get income from these communities, and for the Water Board to bill on actual consumption so that costs at LM level can be reduced.

The Amatole District Municipality will be required to have adequate institutional capacity to perform its duties as a Water Services Authority. In order to provide the necessary support and management of the projects, the district municipality needs to set up an adequately staffed division within its own structures that can perform the duties on a continuous basis. The Amatole District Municipality will be required to pass by-laws to legalise matters such as tariffs, the status of the Water Services Provider (WSP), consequences for non-payment, etc. In order to do this successfully, the Amatole District Municipality has to establish a number of relationships with other organisations that have roles to play in promoting the goal of providing water services to all. The DM will also need to decide on the water service provision institutional arrangement it will use to ensure the most efficient, effective and sustainable means to deliver water to all communities in the district. There are numerous possibilities for the establishment of these WSPs. Three of these are:

- The Amatola Water Board or a private sector organisation as the reticulation WSP
- The Amatole District Municipality as the WSP
- Community based organisations as WSPs with a Support Services Agent appointed to perform tasks and functions in support to the WSPs

These are discussed in detail in the report attached as Appendix 2.

This case study highlights the obstacles to implementation of FBW that exist in poor municipalities with very limited capacity. There are other municipalities like this in South Africa that are in a similar position. As a part of this case study, a step-by-step implementation methodology was developed to help the Ngqushwa municipality to develop a FBW policy, institutional arrangement and budget. This methodology could be used by any municipality that is struggling to develop the above. This methodology is attached as Appendix 3.

6.4 Vulindlela Water Project

Umgeni Water has proved to be cost efficient in their operation and maintenance of the Vulindlela Water Project. They are reliable and have successfully provided Free Basic Water to the community. This was confirmed in a survey[5] done in 2003 of a 10% sample of the community, where 95% of the responses were positive when asked whether Umgeni Water were providing adequate operation and maintenance of the scheme.

The water project will be handed over completely to the uMsunduzi municipality in July 2004. Mr Mlungisi Shangase, the then reticulation area manager for Umgeni Water, recommended an institutional arrangement that could be adopted. This arrangement is similar to those suggested in the DWAF guidelines for water projects:

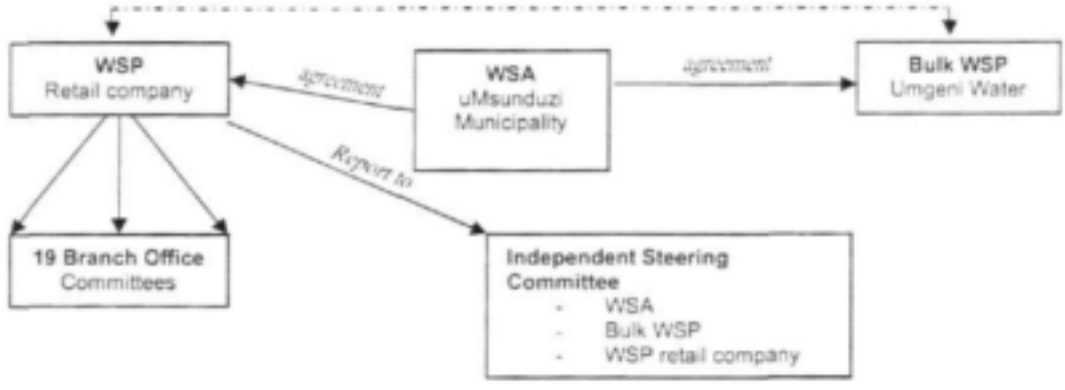


Figure 15: Suggested management institutional arrangement at full scheme transfer on 1 July 2004

The low revenue collected for water usage is a major contributing factor to the poor financial situation of the Vulindlela Water Scheme. Although Umgeni Water has been efficient in their operation and maintenance, they have been poor in dealing with non-payment. As was stated by Mr Shangase of Umgeni, it is important not to have the same company handling bulk supply *and* reticulation (thus the separation shown in the suggested arrangement in Figure 15 above). The company's major income is from bulk water sales. The revenue from reticulation/private customers is insignificant in comparison, and thus there is very little incentive to have efficient cost recovery. It was more cost effective for Umgeni Water to NOT follow up on non-payment, and simply absorb the cost, than to pay the staff salaries for the time consuming process of revenue collection and/or water restriction. This has built bad habits of non-payment which will be inherited by the uMsunduzi Municipality with significant financial ramifications.

The major difference between the Vulindlela Scheme and the other schemes included in this research is that water is supplied via yard connections. There are, therefore, a number of people who use more than 6kl/month, and there is potential for this number to grow.

A concerted effort needs to be made to develop a system of cost recovery. Very importantly, this system needs to be understood and supported by local politicians. The municipality will need to develop this support, as the politicians have a reputation for undermining Umgeni Water in their efforts to clamp down on non-payment. This system will then need to be implemented consistently by the reticulation water service provider appointed by the municipality when the complete transfer occurs in July 2004. It is recommended that Umgeni Water should not be this WSP for the reticulation for the reasons already discussed. If a high percentage of payments can be attained and maintained, the revenue collected will help the project become financially sustainable.

However, even 100% payment every month would not cover the interest on the construction loan. From this example it is clear that national government needs to cover the full capital costs of water schemes if they are to be financially viable.

6.5 Nhlungwane Water Project

The Nhlungwane Water Project is one of few successfully managed community water supplies in the country. Due to the lack of overheads and costly management staff, the historic cost of running the scheme is very low – R7.00 per household per month. This appears to be affordable to the community, based on the high payment rate. The scheme has succeeded in running at these low costs due to good economies and efficiencies.

The government Free Basic Water rollout has been slow. The uMzinyathi FBW policy was agreed in 2002, but by June 2004 it has still not been implemented in Nhlungwane. However, when the DM does implement FBW, the suggested budget of R63 000 for the Nhlungwane Water Project will be adequate. Despite being 300% more than the current community budget, at R24/hh/month it compares favourably with other experience and is economical enough.

As far as discussions with the community regarding the coming changes are concerned (see Appendix 4), care needs to be taken before tinkering with a system which has been found to work well. What was presumed to be a simple transition for the community, proved to be complex and frustrating. The only reason to change would be if the advantages considerably outweighed the disadvantages. There were considerable obstacles for each of the different options for the use of the R7 levy. These were eventually sidelined, in favour of implementing a system which allowed for additional consumption of water by any party who could afford the cost. However, a decision on how to implement this was not made, and cannot be made until the uTWP becomes involved.

Although the majority of the community are in favour of an adjustment to their system, there is a reluctance to implement until discussions are held with their water service authority and water service provider. The lack of communication of these parties with the community, and the delay in the implementation of Free Basic Water has resulted in the community members getting frustrated and losing a degree of trust in the government. The community has expressed a desire to retain management of their water scheme, regardless of whether FBW should be implemented or not. This is partially due to a concern that if the government takes over, it would not be reliable in its management and that after a period its support would stop due to insufficient funds, lack of capacity, or a change in policy. Their desire is that the uTWP will subcontract the community to manage the system as they have since its commission. With the proposed uTWP budget of R63 408.22 an (overdue) increase in the wages could be motivated for to pay those that help to operate the scheme.

A clear conclusion on the way forward cannot be drawn from this research due to the above mentioned indecision, and frustrations. The community is interested in planning, and improving its system, and want to work with the authorities in order to do this. What the end results will be of these negotiations with the WSA and WSP is unknown. A proposal was submitted to the uMzinyathi DM on the 17 October 2003 at the suggestion of a representative from uTWP. A portion of this proposal is quoted below:

It is proposed that a service contract is entered into with the Nhlungwane Water Committee in terms of Section 1.2 of the White Paper on Municipal Service Provision (April 2000). Umzinyathi DM could then implement a system of a monthly debit order into the Nhlungwane Water Project account to pay for expenses. These monthly payments would be termed the monthly Nhlungwane Village Service Contract payment.

It is also proposed that at a separate system is set up for any maintenance costs that may arise above these set monthly costs. The administrator would then submit her financial records regularly to the DM to account for all the income. Any water usage that exceeds the 2.4kl/household FBW, will be paid for by the community at a rate of R10 for 2.4kl (R4.17/kl which is comparable to the charges recommended by uTWP) to cover the diesel used, and for other extra operating costs. This will be monitored using a prepaid coupon system (see example attached). The committee must be allowed to use surplus operating funds (such as may be accumulated as a result of responsible management) for implementing minor improvements to their scheme (e.g. addition of cattle drinking troughs – something which has been proposed by the community).

If this system works well, it will be able to serve as a model for replication in other cases where small isolated communities have shown an ability and willingness to manage their own water supply. The advantage to uTWP would be the cost savings that would be realised if the Nhlungwane committee continue to look after their own project as well as they have been doing.

The water committee have been well prepared through the workshops and planning exercises of this case study, and it is hoped that they successfully present their management plan to the WSA and WSP.

This case study highlights the need for Water Service Authorities to have a flexible policy and implementation strategy in order to accommodate exceptional communities who have well managed systems in place. Communities such as Nhlungwane should be recognised and rewarded for their good management and should be involved in the decision making for any changes that affect their community.

It is important to note that the lowest historical cost for water supply was recorded at the Nhlungwane Water Project. At only R1.00 per capita per month their costs were (and still are) more than a 45% lower than the best cost per household recorded by any other service provider in this research. This community is noted to be an exception to the norm, as many other rural water schemes across the country have failed when managed by the local community. However, exceptions like this should not be ignored, and Water Service Authorities and Providers should negotiate contracts (provided for in Section 1.2 of the White Paper on Municipal Service Provision, April 2000) with communities such as Nhlungwane to continue to manage their schemes while the WSP provides a support role. In order to make this arrangement possible, the WSA needs to develop a policy and a defined process that communities can follow to request a contractual agreement with the WSA and WSP. Without this in place, it is doubtful whether the WSA will have the time or inclination to meet and negotiate with every community water supply committee - as has already been demonstrated by the slow response from the uMzinyathi District Municipality. Nhlungwane is only one small community in a municipality with many issues to sort out, and it is therefore the community that will need to push for progress in implementation.

7. Conclusions

The objectives of this report were to:

1. Investigate Free Basic Water institutional arrangements;
2. Investigate the success of these institutional arrangements if already implemented;
3. Make recommendations for suitable, cost-effective institutional arrangements;
4. Assess the real costs of providing the water at project, support agency, and municipal level;
5. Investigate the availability of funds and the channelling of those funds; and
6. Make recommendations for the successful transfer process to FBW.

Each of these objectives has been met in this research, with an investigation of several institutional arrangements, planned and implemented, successful and flawed. The costs of each case have been detailed, as well as their affordability in terms of the Equitable Share funding. All these will be discussed and summarized further in this chapter.

Each of the case studies chosen was different in location, scale, level of implementation and other factors. In order to compare these case studies, six criteria were chosen to identify commonalities that may lead to general conclusions that can be applied to other situations. Table 28 below shows these criteria:

Table 28: Summary of case studies

	Institutional arrangement	Level of technology	FBW provided	Cost recovery	Cost/capita/ month
Utwp	Regional WSA and WSP	Public standpipes & private connections	3.3Kl planned	Not yet implemented	R20 (planned)
AquAmanzi regional	SSA supporting VWC, reporting to WSA	Public standpipes & private connections	6kl to standpipes monitored by water widget. No FBW to private connections	Poor	R2.30
AquAmanzi Nquthu	SSA supporting VWC, reporting to WSA	Public standpipes & private connections	6kl to standpipes monitored by water widget. No FBW to private connections	Poor	R4.30
uTWP Nquthu	Regional WSA and WSP	Public standpipes & private connections	3.3kl planned	Not yet implemented	R3.31
Umzimvubu ANDM	SSA supporting VWC, reporting to WSA	Public standpipes & private connections	6kl	No cost recovery	R2.44
Ngqushwa	DM as WSA. DWAF and LM as WSP. Water Board as bulk WSP Inactive VWC.	Public standpipes, rudimentary & private connections	6kl	Poor. No system in place.	R2.17
Amanz'abantu	SSA supporting VWC, reporting to WSA	Public standpipes & private connections	6kl	None post FBW. Efficiency pre-FBW unknown.	R6.09
Ngqushwa estimate	undecided	Public standpipes & private connections	undecided	Not yet implemented	R6.19
Vulindlela	SSA supporting VWC, reporting to WSA	Private connections	6kl	Poor. Not enforced consistently.	R3.07
Nhlungwane	Community management	Public standpipes	2.4kl	Very good	R1

From this table, two clear trends emerge: the correlation between the SSA type institutional arrangement, and cost-efficient water provision; and the general lack of cost recovery.

7.1 Institutional arrangements

An analysis of the various district municipalities' institutional arrangements for the implementation of Free Basic Water in rural areas is limited at this stage, as the Alfred Nzo District Municipality is the only municipality of the four investigated in this research that has actually developed and implemented an approach to FBW. The uTWP has a very detailed strategic plan which assesses FBW, but this is still in the process of being finalised; the uMsunduzi Municipality will only be taking over the Vulindlela Water Project in July 2004, and they are uncertain of the institutional arrangement they will use; and Amatole (Ngqushwa) Municipality is still in the process of developing a FBW policy. However, drawing from the AquAmanzi projects, the Umgeni Water operations of Vulindlela, and the Alfred Nzo DM experience recommendations for a cost effective institutional arrangement for the delivery of FBW can be made.

Nhlungwane will not be included in this discussion of a recommended institutional arrangement as it is an exception to the norm, and should be viewed as a benchmark for the ultimate in low cost operation and maintenance in rural water supply. Experience indicates that there are very few community WSPs as cohesive and successful as Nhlungwane, and this institutional arrangement can thus not be broadly applied. Instead, district municipalities should allow for exceptions such as these and perhaps develop unique contracts with such communities in order to allow them to continue to operate their water schemes with cost efficiency that cannot be matched in any other way (but note legislative obstacles to this model – see Hazelton report Section 10.7 in Appendix 1).

The uTWP 2030 will be excluded, as there has been no implementation history to prove that its proposed budgets are realistic. Their planned cost per capita at R20/month is too high for other district municipalities to follow and it is beyond the level of Equitable Share funding. The proposed budgets for Nquthu and Nhlungwane are economical, but again, it is difficult to comment as they have not been implemented. Ngqushwa LM will also be excluded as it has no policy or institutional arrangement in place.

The common factor between the AquAmanzi, Vulindlela and Alfred Nzo DM institutional arrangements are the specialised, experienced, independent Support Service Agents contracted for supporting or managing the operation and maintenance of water supply schemes. These organisations have proved to have the expertise to manage both the budget and engineering challenges of rural water supply. This does not infer that privatisation is necessary, only that an independent SSA (public or private) with the necessary expertise appears to be an essential element for reliable and economical provision of water. An example of such an arrangement is found in Figure16 below:

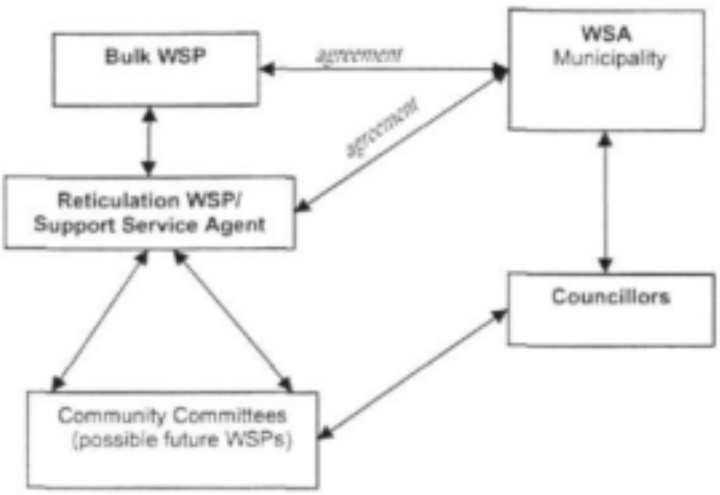


Figure 16: Recommended institutional arrangement

The district municipality is the water service authority and is responsible for policy, contracting the Support Service Agents and water service providers, budgets, and ensuring all parties are fulfilling their obligations.

The Support Service Agents ensure that daily operation and maintenance of the schemes happens, and are responsible for community liaison and capacitating, management of budgets, and regular reporting to the WSA and WSP.

The water service provider must ensure that the Support Service Agent is supplying a clean, reliable water supply as well as for accomplishing cost recovery, community social issues, reporting regularly o the WSA and SSA. The WSP and SSA may be the same party. If a community WSP is desired as in the Alfred Nzo DM, then the functions of the SSA and WSP will overlap as the community WSP is capacitated and legally registered. This latter example will mean a gradual phasing out of the SSA who may eventually only provide expert assistance for major maintenance.

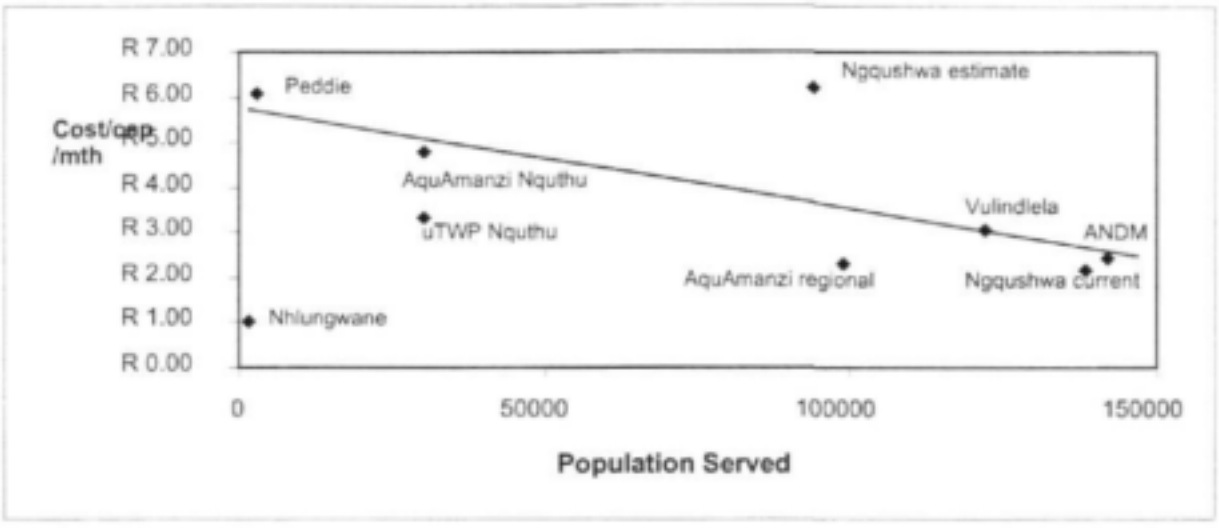
7.2 Cost per capita

A fairly comprehensive costing of water supply was detailed in each case study, giving a broad spectrum of the historical and predicted costs with the different institutional arrangements. From these various studies one can see a pattern developing in the cost per capita that can be used to budget for the supply of FBW to other rural areas.

Table 29: Comparison of the operation and support costs of water supply in the different case studies

	No. of People Served	Cost of Operations & Support/hh/month	Cost of Operations & Support/capita/month
uTWP Marginal Scenario	1 787 655	R113.00	R20.00
AquAmanzi (uTWP region)	98 912	R18.36	R2.30
Nquthu rural (historical)	30 444	R33.59	R4.80
Nquthu rural (uTWP proposed budget)	30 444	R26.50	R3.31
Nhlungwane	1 500	R7.00	R1.00
Alfred Nzo DM (Umzimvubu North)	142 007	R17.08	R2.44
Vulindlela	122 088	R18.45	R3.07
Ngqushwa LM	120 841	R9.75	R2.17
Amanz'abantu (Peddie in Ngqushwa)	2 815	R27.41	R6.09
Estimated Ngqushwa (From Table 24. Avg taken) (includes WSA costs)	94 155	R28.00	R6.19

From these case studies, the median cost per capita per month for operation and maintenance is R2.75. It should also be noted that when looking at the AquAmanzi, Nquthu, Alfred Nzo DM, Vulindlela and Peddie costs there is a correlation between the number of people served and the cost per capita, showing the significance of economies of scale. The Ngqushwa costs currently fit into the above mentioned correlation but the service provided is poor and will need significant improvement before it can be compared with these other costings. The costing exercise done for the Ngqushwa institutional arrangements results in a higher cost per capita and does not correlate with the other case studies. However, these projected costs for Ngqushwa have allowed for WSA costs which none of the other case studies (except the uTWP SP2030) have included. This cost could be significant in each case study as municipal overheads and staff salaries are generally high.



Note: uTWP SP2030 strategy budget not included as the costs are too high

Figure 17: Correlation between Cost per Capita and Population Served

7.3 Asset Replacement

Asset replacement is a vital component of Free Basic Water costs, and yet was not included in the budgets of the Water Service Authorities in this research. Without planning for these future costs, the water supply cannot be sustainable in the long term. Water Service Authorities must begin to budget for asset replacement, setting aside funds from their annual budgets.

But how much should be budgeted? While plastic pipes and concrete reservoirs do have a long life expectancy, other items such as valves, meters, pumps, engines and electrical controls are faster wearing. In today's value, an average scheme costs approximately R1 400 per capita to construct. If 20% of this has to be replaced/upgraded every ten years, that is R280 per capita to be spent every 10 years - this translates to R2.33 per capita per month.

As discussed in each section, the costs do not include asset replacement, and are thus not the *real* costs of water supply. Using the median of the costs in Figure 17 above (escalated to 2004/2005 value), and the estimated asset replacement cost calculated in section 8.3, an approximate total cost per capita per month for water supply can be calculated:

R3.51 (operations and support) + R2.33 (asset replacement) = **R5.84** Total cost /capita/month

This figure is for 2004/2005 and should be escalated annually at the inflation rate. It should also be noted that this figure does not include WSA costs. These costs will vary considerably in each district municipality. However, in this research it appears that these costs are often included under a different budget section.

7.4 Cost Recovery

Cost recovery is a problem that still needs to be dealt with. The Alfred Nzo DM has no cost recovery in rural areas, and this is predicted to become an increasing problem in the future as consumption increases with increasing numbers of yard connections. Yard connections are discouraged and household water consumption beyond the FBW quota is not being paid for. The municipality plans to devise a strategy in the future, but is at present focussed on expanding the rural water supply to cover all villages in the DM. Umgeni Water has a problem with cost recovery at Vulindlela, and has increasing arrears every month. The lesson here is the need to have different companies/organisations responsible for bulk supply and reticulation. The company responsible for the reticulation must have the motivation to recover costs every month as a part of their contractual obligations and financial sustainability. AquAmanzi used prepaid meters before FBW, but these were replaced with units dispensing a controlled FBW allocation at standpipes. This prevents those that cannot afford to pay for water from using more than their free allocation.

Cost recovery is a contentious issue in South Africa at present. After conflict over cut-offs due to non-payment, the Minister of Water Affairs Ronnie Kasrils announced that it was unconstitutional to cut people off from a lifeline supply. This has exacerbated the cost recovery issues, as people continue to receive water despite arrears. The other reality is that many people cannot afford the water tariffs, despite willingness-to-pay, and cannot be denied a basic human need due to economics. The vast majority of rural households getting water from standpipes do not use more than 6kl per month and therefore there will be no cost recovery, but with the increasing number of - and desire for - private connections, cost recovery will continue to be important.

No solutions to these problems emerged from this research, but it did highlight the need for more work to be done on this topic.

7.5 The Equitable Share

For poor rural areas the affordability of FBW is primarily determined by the Equitable Share allocations. These allocations will be compared with the costs in this study, and with the median cost calculated above. Most of the calculations and illustrations in this research used 2002-2004 figures. The costs will be escalated and applied to the most recent Equitable Share allocations for financial year 2004/2005. The money for water services is allocated to the Water Service Authorities. In order to calculate the approximate portion of the Equitable Share allocation that is intended to subsidize the costs of FBW, 23.3% of the total S-Grant and 40% of the total Free Basic Services portion for the DM and for the LMs within the DM jurisdiction is assumed to be available. Table 31 shows the approximate totals available in each case study area. It should be noted that the calculations for Amatole, uMgungundlovu and Amajuba were complicated by local municipalities within their jurisdiction being Water Service Authorities and thus the figures for these areas are less certain than for the other areas.

Table 30: Rands allocated for water services from the Equitable Share (Div of Revenue 2004)

	Total ES 2004/2005	Recommended allocation for water services
uThukela	R91,817,856	R13,936,333
uMzinyathi	R88,205,325	R15,886,880
Amajuba	R57,340,114	R11,163,596
uTWP (3 DMs combined)	R237,363,295	R40,986,809
Alfred Nzo	R174,477,587	R35,699,689
uMsunduzi	R69,468,999*	R13,673,977
Amatole	R266,336,111**	R58,973,476

* This amount is allocated to the local municipality. The LM is the WSA and thus receives the allocation for water services.

* This amount excludes all allocations to Buffalo City LM (WSA), as Amatole is not responsible for that area, and has no access to the funds

Using these ES allocations one can apply them to the current and projected costs discussed in this report for the different case studies and determine their affordability. In Table 32 below, the water service allocations are compared with the total populations within the jurisdiction of the applicable Water Service Authorities, in order to show what % of the population the current ES allocation can cover. It should be noted that the Census 2001 figures have been used, as these are the ones that were used by National Treasury for the 2004/2005 Division of Revenue. If the population figures used in the case studies were used, results would vary from those below. Once again, this highlights the importance of correct population figures.

Table 31: Affordability of water provision

	ES allocated for water	WSA Popln (Census 2001)	Cost/cap/ mnth**	% coverage possible @ actual costs	Recommended Cost/cap/ mnth	% cover possible @ recommended costs	% cover needed ***
uTWP	R40,986,809	1 581 480	R4.92 – R23.32	9 - 44%	R5.84	37%	43%
Alfred Nzo DM	R35,699,689	550 389	R5.08	106%	R5.84	93%	57%
Ngqushwa	R2,984,680	84 229	R4.77 – R10.19	29 - 62%	R5.84	51%	60%
Vulindlela (uMsunduzi)	R13,673,977	553 223	R5.80	36%	R5.84	36%	48%

* The portion of the Amatole allocation that would be for Ngqushwa, based on population figures.
**incl asset replacement; escalated to 2004/2005 value

*** for 2004/2005 taking into account indigence levels and population actually served

If the data in Table 31 is correct, the situation is positive only for Alfred Nzo. The percentage possible coverage for all the other WSAs, even at the recommended cost/capita, is low. However, it must be remembered that the ES is allocated on the basis of indigence levels and further, the FBS portion is allocated according to the number of people actually served. When this is taken into account, and the percentage coverage actually needed in the 2004/2005 is calculated, then the picture is considerably better, *but still not sufficient*. All the WSAs, bar Alfred Nzo at this stage, need to both allocate the full recommended percentages of their ES to water services and develop effective cost recovery, and cross-subsidisation strategies. However, as none of these municipalities have large urban centres to cross-subsidise high water provision costs, this table also highlights the importance of a cost-effective institutional arrangement.

As already mentioned, Equitable Share allocations for basic services are targeted at indigent households only. Therefore correct indigent population figures are crucial to determine affordability. It is also imperative that the census figures correlate with the figures used by WSAs. The ES indigence numbers were imputed from the 1996 Census and used from the first ES year, 1998/1999, until the 2003/2004 ES year. If a comparison is done between these indigence levels and the indigence levels used by the WSAs in this study, there are significant discrepancies. These discrepancies resulted in lower ES allocations than the WSAs appeared to require, placing strain on municipalities' already tight budgets. This could be a reason for the delay in the implementation of FBW in some of the case study areas. The 2004/2005 ES is based on the 2001 Census, however, the official imputed poor population figures from Census 2001 were not available at the time of the research. For the uTWP region, there were significant increases in the ES allocation that were not projected in Division of Revenue Act 2003. This could be attributed to increased indigence figures from the 2001 Census, which will improve the ability of the WSA to provide FBW in this region.

Free Basic Water in the rural areas of South Africa is difficult, but possible, and with good management could be sustainable in the long term as long as national government provides sufficient levels of Equitable Share revenue to municipalities. From the lessons learnt in this research, the key factors in successful implementation are; good planning;, the honest assessment of the WSA capacity and the consequential contracting of experts to fulfil the roles and responsibilities the WSAs cannot fill; political support for FBW policy; and accountability.

7.6 Recommendations

From the experience gained in the four case studies areas, it is clear that a thorough investigation of status of water schemes is the essential first step in the successful implementation of Free Basic Water in rural areas. The Water Service Authorities need to have a very clear understanding on how all the schemes are operating, where refurbishment is needed, and where new capital projects are required.

Once the current status has been established, the budgets and the implementation of institutional arrangements can be discussed. It needs to be ascertained what expertise is available within the DM, and where expert assistance will be needed in order to supply water across the entire DM. It is at this stage that roles and responsibilities should begin to be allocated.

A DM should undertake costing exercises for the different institutional arrangements, drawing of the experience of other DMs. The DM needs to determine what can be afforded, what extra income is needed, and where this money will be found. Included in this must be an allowance for asset replacement. From the costing, the required percentage allocation from the Equitable Share will be clear, and can be motivated for.

It is essential that political support and commitment is obtained at an early stage and nurtured throughout planning and implementation, as the Alfred Nzo DM and Vulindlela experience shows that political issues can threaten the success and sustainability of FBW implementation.

Key role players in Alfred Nzo FBW programme made useful suggestions from their experience thus far. These suggestions are summarised in the information box on the following page.

Alfred Nzo DM Deputy Director of Water and Sanitation, Mr Ernst Zellhuber:

- Success is reliant on the involvement of the private sector. It is very unlikely that the WSA has the expertise, nor the time to provide the intensive and diverse services needed for the successful implementation of FBW in rural areas. From the experience in the last 3 years, it has also proved highly cost effective to employ the SSAs. If a budget was calculated to compare the costs for an in-house operation, this would be clear.
- When deciding on a strategy for implementation, stick to the basics. It is difficult enough to get these basics working efficiently, without worrying about finer details. As the strategy begins to work, develop the details.
- Allocate a portion of the annual budget for an operations and maintenance fund. This money should be saved and allowed to grow for future replacement costs.
- Do not be afraid to delegate roles and responsibilities. The municipality cannot do everything. Find people who are experienced, and involve them at every level possible.
- Once a structure is in place, and key role players have been contracted, ensure regular monthly meetings in order to brainstorm, solve problems, encourage, and improve the system.
- Develop standard reporting systems for SSAs. Ensure detailed, useful reports that allow the municipality to extract relevant information for progress analysis.
- Involve Council in the process and decision making. Keep them up to date with progress, and financial statements. It is important that their trust and support is retained for the strategy to be successful in the long term.
- When designing schemes, it is cost effective to group villages together, as there is then only one WSP and committee to liaise with.
- Design your structure to make sure there is maximum local community involvement.
- Use pumps to regulate consumption at a village level. Supply only 6kl per household, and then rely on the local water committees to regulate and police the individual household consumption.

Jim Gibson of the Maluti Water SSA

- O& M is not a project, it is an enterprise. Planning should be done with this in mind, and the different cycles the system will go through must be allowed for.
- Get systems in place e.g. KPIs, milestones
- Ensure there is discipline
- Wages for community workers must be on linked to accountability for work done
- There must be accountability - between municipality, SSAs, local operators, committees, and communities
- Have the backing of the DM for the system implemented, and ensure it is not open to illogical changes at the whim of politicians

Anthony Lenehan of WASH Consultants SSA

- Contract out to SSAs. DM's rarely have the capacity to do all functions and keep up to date.
- The municipality must take a serious look at the cost of schemes, institutional costs etc, and see where there are unnecessary large funds being used. Efficiency is very important.
- Sort out the unknowns before you start
- Transparency: actively inform politicians and the public what is happening, and why. Privatisation is not liked, and people need to be kept up to date or else it won't work.
- Diesel systems are better. Eskom is not equipped to deal with rural systems. The quality and consistency of electricity is not good. With a diesel system you are not reliant on another service provider that you have no control over.
- Constant water supply is the most important key performance criterion.
- Balance the level of service with willingness to pay.
- Trickle feed yard systems are better than high pressure communal tapstands: running costs are cheaper, and regulation is easier.
- Find out what communities want
- Don't build new schemes without first servicing existing schemes.

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Appendix 1

Ngqushwa proposed models and costings

Model 1: Contracting out the role of water service provider

The organogram below illustrates a model which aims to minimise the functions of the Amatole District Municipality. The Amatole District Municipality could contract out all the water services functions to the Amatola Water Board and private sector organisations, retaining the reduced responsibilities of the Water Services Authority. The AMATOLE DM will thus be required to monitor the contracts, set up communication arrangements with communities and undertake high level planning.

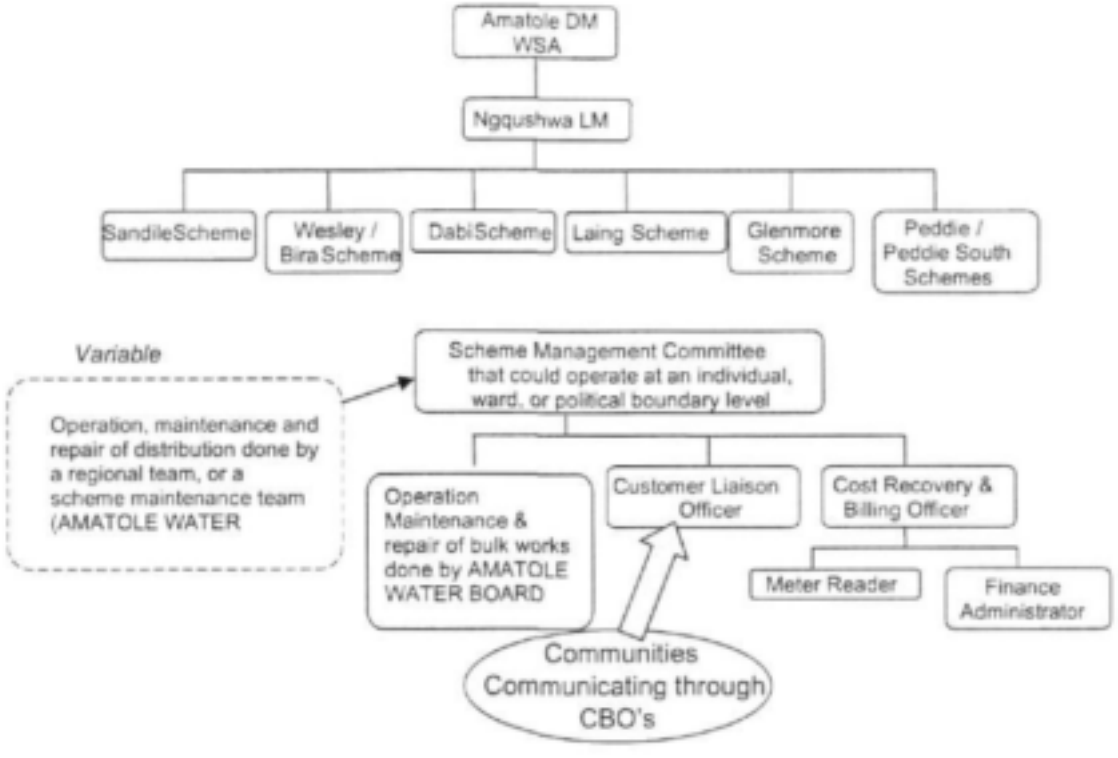

Figure 1: The Amatola Water Board and the private sector as water service providers

In the first scenario the Amatola Water Board will be the Water Services Provider for both the bulk and the reticulation supply to all the villages that are a part of their network. The schemes not connected to the Amatola Water Board could either be supported by the District Municipality, a Support Service Agent, or could be included into the Amatola Water Board WSP. Alternatively, the Water Board would only be the bulk water WSP and a Support Service Agent (private sector) would be the reticulation WSP.

Community based Organisations will be responsible for preventative maintenance and communication channels. This will be required for all the communities (i.e. those served by the water board and those stand alone schemes).

This model will mean that the AMATOLE DM has no direct service provider relationship with customers, but it maintains its statutory obligation to represent the interests of the people in its area of jurisdiction. This obligation exists for all municipal services, whether the service is actually being rendered or not.

It is referred to using the term *statutory communication channel*. This is a primary responsibility of the elected District Municipality councillors to act as the channel for communication.

Other variations of this model could be adopted:

- The area may be divided and two or a few WSPs used;
- The AMATOLE DM may contract out specific functions, such as billing and revenue collection, separately;
- The AMATOLE DM may choose to retain certain functions, perhaps WSP support or cost recovery

Advantages

- The District Municipality can contractually bind the Amatola Water Board and other Support Service Agents to meet certain Key Performance Indicators, to operate within a budget, and to police cost recovery, thus ensuring a high level of service to their district.

- If there was only one reticulation WSP, then they could establish a standard implementation strategy which ensures that all communities can have the same roles and responsibilities, procedure for reporting problems, level of support, tariff structure etc.

Disadvantages

- The successful provision of water to all communities is entirely dependant on the competence of the WSPs.
- Political and administrative obstacles could prevent the AMATOLE DM from being able to outsource the financial management of water provision.

Model 2: Maximising the role of the Ngqushwa Local Municipality

If the AMATOLE DM undertakes the full WSP role, including bulk (excluding the area of the Amatola Water Board) and retail services, it needs to be a high capacity organisation, employing a large number of people located throughout the district. The Amatole DM as the WSA will provide a regional support office in Peddie, or a main office in East London with a satellite office in Peddie to perform the roles and functions.

The Amatole DM would thus take responsibility for the following functions:-

- Operation, maintenance (preventative and reactive) and repair of all distribution networks (including villages served by the Amatola Water Board)
- Cost recovery and billing for all schemes
- Bulk water service provision to all communities not served by the Amatola Water Board
- Monitoring the service provision of the Amatola Water Board
- Monitoring of its own functioning as WSA and WSP

A contractual agreement would be established with the Amatola Water Board to continue to be the bulk water service provider for the six schemes.

All communities will need to have CBOs responsible for preventative maintenance and communication with the Amatole DM.

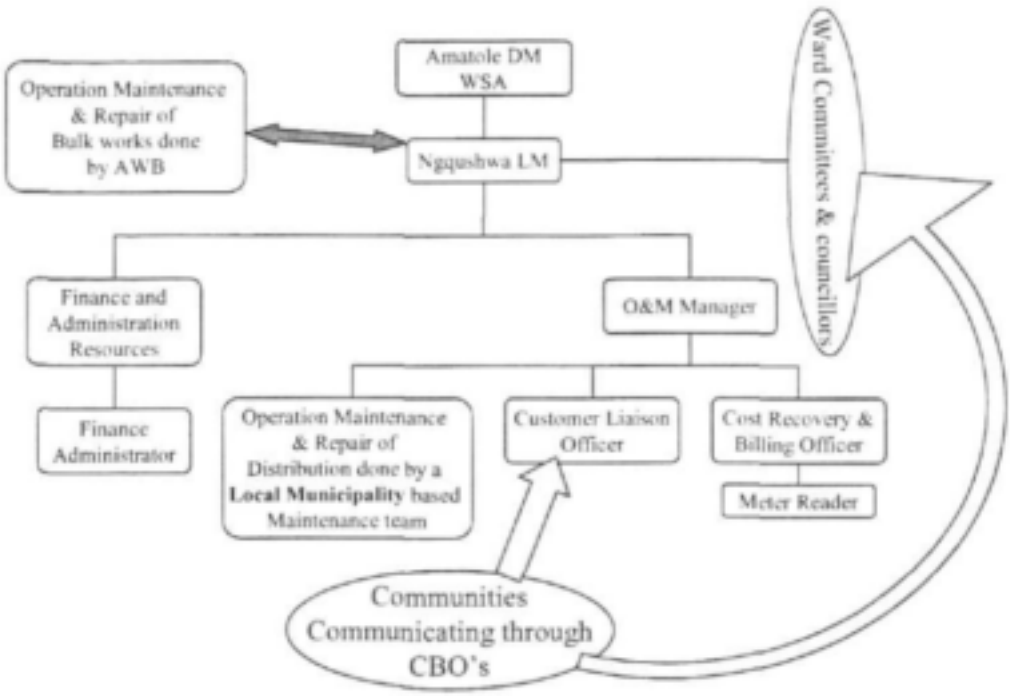

Figure 2: The District Municipality as both the WSA and a WSP

Advantages:

- There is opposition to privatisation of services - this model will build a large public sector organisation.
- This model for Ngquwasha Local Municipality will easily fit into a provincial model should the WSA wish to establish a provincial (i.e. at East London) support office

Disadvantages:

- It is unlikely that a DC can build sufficient capacity to be an effective service provider over a wide area with large numbers of unserved people in hundreds of settlements.
- There will be difficulties in keeping a close relationship with customers.
- This option could easily lead to 'top down' implementation.

Model 3: Maximising the use of Community Based Organisations

This model explores a partnership option between the District Municipality (DM) and the communities. The DM will rely on community based water service providers, typically water committees, to take on the WSP responsibilities. These community-based organisations that form the Water Services Providers will be contracted directly by the WSA and will have the obligation to undertake as much of the maintenance of the infrastructure as possible. The principle that should apply is that anything that can be done by the

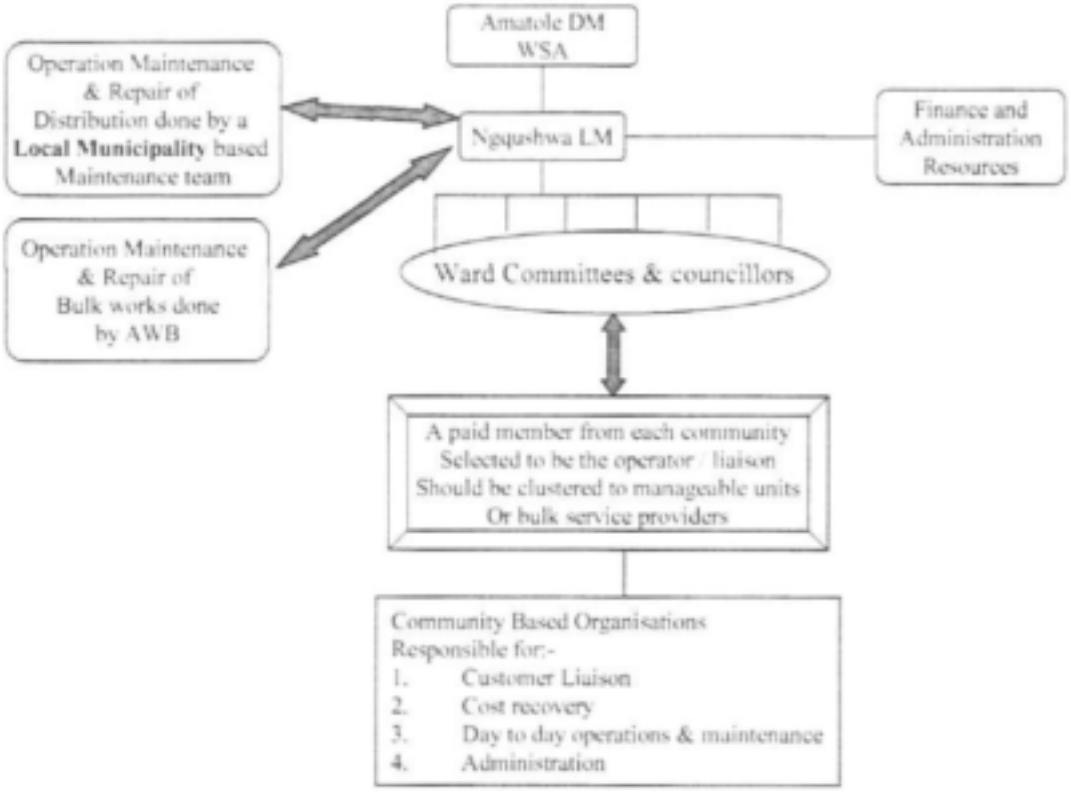

Figure 3: Community-based WSP model

community-based organisation should be done at that level as this will maximise quick response and cost effectiveness. The DM will will provide support services to the WSPs to ensure their effective functioning (especially on tasks that require higher expertise levels).

The DM will either retain the responsibility for bulk water supply, the implementation of new projects, support services and sanitation promotion, or they could choose to contract out to support service agents, and other organisations to perform some or all of these functions.

Advantages

- This arrangement brings the benefits of a demand responsive approach to providing water services.
- It provides for responsibilities to be delegated to settlement level as far as possible, promoting a 'bottom up' approach to development.
- It is cost effective as the water services providers can use informal arrangements.
- The option has a reasonably good track record in South Africa.
- Arrangement optimises the benefits brought by community based services providers and those brought by high capacity organisations.
- The DM does not have to build large capacity.
- It is a relatively low cost option.

Disadvantages

- The capacity of community-based organisations has to be built.
- There will be a large number of water services providers.
- The DM still has to build capacity to undertake the WSA, support, bulk services, sanitation promotion and programme implementation functions (unless these are contracted out – bar the WSA function)

Appendix 2

Implementation Methodology

	Key Performance Area	Tasks	Deliverables	Risk Areas
Information Gathering and Data Assessment Phase				
1	Formation of the Steering Committee and having regular meetings.	• Organise the first meetings and set up the environment for future meetings • Hold bi-monthly steering committee meetings (if possible)	• Minutes of meetings • Participation and involvement of all stakeholders	• Time constraints that effects key stakeholders participation in meetings • No quorum for decision making
2	Develop questionnaire on data and information needs or shortcomings	Draft the questionnaires identifying the scope of data requirements, on:- • Demographic and socio-economic information • Technical and O&M information • ISD information • Financial information • Set up the interviews	• Questionnaires ready for implementation • Key stakeholders agree to be interviewed and commit to assist with collection of information and time commitment	
3	Collect and collate existing information and documentation	• Contacting as many key stakeholders as possible and gaining access to the information and documentation available (including maps). • Desktop assessment of accuracy, completeness and comprehensiveness of existing information • Doing a gap analysis to get key information on areas that will effect the strategic decisions to be made. • Verification of data	• Access all available existing data (IDP's, Sector Plans, WSDP's, Business Plans) • Discussions with information sources (i.e. National, Provincial and Local Government departments, consultants, NGO's and CBO's etc) • Maps • Data spreadsheets • Identify field visits required to verify and get information that is not readily available	• Stakeholders or consultants not cooperating in making their information available. • Poor information available and accuracy problems
4	Interview key stakeholders and field visits to get information	• Identify which key stakeholders should be interviewed • Interview the stakeholders	• Report on the current state of the WSP capacity in the area	• Availability of stakeholders to be interviewed in timeframe • Cooperation lacking of stakeholders
5	Analysing and evaluating the interviews and data	• Analysing and assessing data and information • Revisiting data problem areas and verifying results • Presentation of a final data set used for strategic decisions	• Assessment on the desirable state of WSP capacity both now and in the future • Presentation of final data (with accuracy assessment) and assumptions • A more detailed "way forward" identified on data problem areas.	
6	Strategic development and producing a First	• Strategic meetings and discussions with DM and LM	• Giving regular updates on strategic developments	• All key stakeholders not participating in this milestone

	Order Strategy from information	• First Order Strategy on WSP assessment done per LM area and combined into an overall District level • Different institutional arrangements for WSP presented with comparative costs • Have a workshop with the Steering Committee (**Note** this is a **milestone workshop** where full participation from all stakeholders is key)	• Presentation of First Order Strategy to the Steering Committee • Key discussion held with strategic decisions made • A more detailed "way forward" identified.	workshop • No clear way forward identified • This submission does not have suitable timeframes or budgets allocated to do an extended revised scope of work
Strategic analysis and Workshop Phase				
7	More detailed information gathered from decisions made	**Depending on the data captured already and decisions made to date, it may be necessary to do further data collection and/or interviews to prepare a more detailed and accurate strategy.**	• Capture of updated data into the institutional arrangements	
8	More comprehensive and detailed strategic analysis on the agreed alternative/s for WSP's	On decisions made we will focus (zone in on) and investigate in more detail the ISD, financial and technical (O&M) characteristics of the institutional arrangement/s selected to be able to present a more structured, feasible and accurate strategy.	• Presentation available for stakeholders to be involved in informed decision making processes • More detailed and accurate information	
9	Presentations on findings to the Steering committee and development of a communication / workshop strategy for "other stakeholders" i.e. the LM and ward councillors	• Presentation to the steering committee and project team • Strategy developed with project team as to way forward in communicating findings with "other stakeholders"	• Giving regular updates on strategic developments to the Project Team • Presentation of Draft water service provision Strategy document to the Steering Committee • Key discussions held with strategic decisions made	

12	Presentations on findings to LM's and DM's	• Presentations delivered to "other stakeholders, LM's etc as per strategy with project team.	• Strategic input form LM and DM stakeholders • Communication channels opening and key stakeholders becoming more aware and capacitated on water service provision issues	• Time to get to all "other stakeholders" • Understanding and finalisation of the division of powers and functions • Disagreement between LM and DM on the Water Service Provision options • Key stakeholders and decision makers not available for meetings and workshops
13	Production of a final report	• Drafting and presenting a final report	• Strategic input into WSDP, IDP and Water Sector Plans • Policies available on key water service provision items • Implementation plan for the DM to implement the project outcomes	
Implementation Phase (NOT part of this ToR)				
14	Drafting an Implementation plan for the ADM and the LM	• Assist the stakeholders to identify the requirements for an implementation plan:- ✓ Strategy ✓ Resources ✓ Funds ✓ Systems & Procedures ✓ Communication strategy	• Implementation plan and strategy workshopped and agreed with all stakeholders • Implementation plan forms part of IDPs and WSDPs and funds provided for	

Appendix 3

Nhlungwane Community Process

Nhlungwane community response to coming changes

1. Core research questions

i.) In a case where a community has a good track record in managing their own water supply, will local government retain and make use of the skills built up in the community?

ii.) If it is no longer required for people to pay for a basic water supply, will they be interested in, and prepared to pay for a higher level of water supply?

iii.) Where good community disciplines have been established in paying for a community service (water), can that practice be transferred to a new development objective after the advent of Free Basic Water?

2. Process

2.1 Introduction of research project to Water Committee

12 September 2003

Partners in Development have been working with the local Water Committee for a number of years, but had not attended their monthly meetings in 2003. At this meeting an update on the Water Project was given to the research team. Following this update, the research team questioned whether there was any progress with Free Basic Water in the area. The committee could remember no interaction with either the District Municipality or the u Thukela Water Partnership. The research team explained the new powers and functions with regards to water supply, and the role that uTWP planned to play both financially and technically. Once the committee understood and had asked questions that concerned them, the research team made the suggestion that the community does not stop their current system and simply let the government pay, but to keep up monthly levy and use it to pay for additional water, or a completely different development project.

The committee was requested to think about the proposal, and speak to friends and family. Permission was given for the research team to workshop the idea with the community so that an informed decision could be made.

2.2 Prelim interviews and mapping exercise

18-19 September 2003

The aims of the two day site visit were: to get to know the community; to explore current and future developments of this community; and to start facilitating the thinking around redirecting community contributions to other community development initiatives, after the introduction of free basic water.

Current sources of water

The community of Nhlungwane currently obtain water from the following sources:

Handpumps	Used mainly by those who do not pay for water. Those people who use tap water also use the borehole if they need extra water eg for livestock or watering the gardens.
Mpofana river	Used to be the main source of water for the Nhlungwane community, especially during dry seasons. This source is still used if the umgonqozo (borehole) is broken. It is also used for a community garden.
Stream	Used mainly for livestock watering. During dry seasons there is often too little water available in this stream, and sometimes there is no water at all. During these times community men dig below the river bed to get to water.
Rain water	Rain is limited to the wet season. Rainwater harvesting is only possible for those with appropriate roof designs.
Tap water	In order to get access to this source the community members or families have to pay and initial joining fee of R150.00 and the monthly tariff of R7.00 per household. Tap water is the cleanest source in this community.

Main uses of water

The tap water users are allowed 3 water containers (25 litres) per day per family. According to the interviews, water is used mainly for cooking, drinking, bathing, watering the garden and for livestock watering. The tap water provided is enough to meet the needs of the household, but there is generally not enough water for the livestock or for watering the gardens. If there could be more water people would be able to cater for gardens, block making, livestock, and students could wash their school uniforms each day.

People were not aware that it was possible to increase the amount of water that they use daily. This became clear when they explained that there was arable land that is not ploughed due to insufficient water. They also expressed the need to install a pump in another borehole that was drilled by Mr Rudi Schroeder, who advised that if there should be a need to increase water supply then they could make use of that borehole. Mr Schroeder used to work with this community and initiated the idea of the water project to provide the water needed for the gardens. This was the start of the process for the Nhlungwane Water Project some ten years ago.

Community Activities

These include one community garden and a few family gardens.

Ekwethembeni Community Garden

This community garden started ten years ago, when a person from the community gave a piece of land for communal ploughing. The project has a membership of 46 families. Members farm to supply their families and to sell surplus to the community. Their produce includes beetroot, spinach, onions, tomatoes, cabbages, carrot and mielies. The Department of Agriculture supported them with fencing and an engine

and pump which supplies irrigation water. A R10.00/ contribution by each member is used to run the project. The garden is successful, although theft by baboons is a problem.

Family gardens

A few households have small gardens where they plant vegetables. Most of these are only ploughed and planted in summer. Some households save their daily ration of tap water to water their plants, while others use water from the handpumps. Umsasane (a type of a thorn tree) and wire is used to fence the family gardens. There was a concern that there is a shortage of umsasane in Nhlungwane. This results in people not ploughing their fields.

Other community projects

People of Nhlungwane keep cattle, goats and sheep as family wealth and not for selling. They are used to pay penalties or for cultural purposes.

A block project started by the late Mr Bethuel did not succeed, allegedly because of the shortage of water and sand.

Interviews

Number of people interviewed

Sixty-three people were interviewed including youth, adults, females, males, leadership etc. Most of the interviews conducted were in groups with very few one-on-one interviews, as people were gathered together at different places.

The breakdown of people interviewed is as follows:

	Male	Female
Adults	15	25
Youth	17	6

About 25 people participated in a community mapping exercise. Most of the participants were females, however the sun was very hot and the men turned out to be the most active during the exercise. A few women observed from the shade of a tree while others got involved during the discussion.

Interview with the local political Councillor, Mr Kubheka

The aims of this interview were to find out about the following:

- the process of the transfer of water management to the uMzinyathi District Municipality and the community involvement in this transformation;
- any programmes planned for the Nhlungwane community in the near future; and
- involvement of the Nhlungwane youth in developing their area.

Councillor Kubheka claimed to know nothing about the operation of the Nhlungwane Water Project, or the transfer of water management to the uMzinyathi DM. During the interview he was informed about the process. It emerged that the reason for his non participation was because he lives in the neighbouring area of Mkhuphula that did not get piped water because of resistance to pay when the project was initiated. Because of the lack of water in his area, the councillor does not like to be involved in, or show support for, the Nhlungwane Water Project.

Councillor Kubheka also told of a local government project to supply solar power electricity. The household has to pay the installation fee which is R100, and then pay R18.00 per month. There is only one household that is using solar electricity so far.

He talked about several projects that are expected to commence soon: poultry farming, sewing and community gardens.

He expressed concern that people do not attend meetings, and that it is difficult to communicate with the community other than through meetings. He does not know what they can do to overcome this problem. According to Mr Kubheka the youth do not get involved as they lack understanding of the importance of development activities.

Youth involvement in development issues

From the interviews with youth, it became clear that they do not participate in any development activities in their community. When asked the reason why, they gave different answers: no one invites them to meetings so they think that they are not needed; they only get invited when there are disciplinary hearings taken by leadership against one of the youth; they think that it is not applicable for them to participate in development activities.

Sports activities at Nhlungwane include soccer (for both boys and girls), netball and Imbube music. Boys' soccer lacks sponsors therefore they do not compete with teams from other wards, while girls' soccer was recently involved in competitions that were organised by uMsinga Local Municipality.

Conclusion

From the interviews it was clear that there is a serious shortage of water for livestock watering. Other potential uses for additional water include family gardens, block making, and poultry farming. Should they have an Eskom electricity supply they can do things like welding, and panel beating (the solar panels offered by local government, are not powerful enough for industrial uses).

Another important issue that was discovered was the lack of cooperation between the Nhlungwane community and their local councillor. For example the councillor complained that people do not come to meetings, while the chairperson of the water committee complained that the councillor refused to sign a letter to the Mvula Trust (requesting help to fence the pump house) because the councillor felt it may jeopardise his negotiations for the supply of water to Mkhuphula ward. The relationship between the local councillor and the community will influence whatever plans are made for this community.

A knowledge-and-skill-assessment was not done on the two days visit, but was included into the first workshop to help the community understand their best possibilities for development.

The vocabulary and attitudes that were expressed in the interviews showed a tendency for dependence on government and other funding. People are waiting for outsiders to come and do things for them. This is an interesting observation, considering that this project was chosen for research precisely because they have done better than most in looking after their own water supply.

2.3 Workshop 1

9 October 2003

This workshop was the first in a series that aimed at helping the community of Nhlungwane to consider their options, and plan for the future. We made it clear from the start that we were not bringing money to the community, or jobs, or a development project, but rather we wanted to help the community realise the potential that they have to help themselves.

With this goal in mind, the first workshop was focussed on identifying all the activities in the community that were linked to income generation and/or sustainable livelihoods. An extensive set of pictures was used depicting different tasks, and the participants divided these according to **gender roles and responsibilities**.

Once this was done, the large group split into smaller groups, and they ranked all these tasks by priority. In this **ranking procedure** they were asked to decide what were the most important activities in the community, and which of these needed "developing". Much debate ensued but each group eventually ranked all their picture cards.

The groups were then given two mielie kernels each and asked to **vote** for their first and second priority for development. From each group a spokesperson was chosen to present their first and second priorities, and motivate their choice. After these motivations, the top scoring cards in each group were placed in the centre of the room and each person was given only one mielie kernel. Each person then voted again for their priority issue.

The results were unexpected. From the initial site visit and interviews it was predicted that livestock watering and vegetable gardening would rank high on the list of priorities. However, these did not receive any votes. The livestock watering did not even make it into the second round of voting.

The second priority, getting only a few votes was the need for a block making project. The need was expressed for a local supplier, as blocks had to be bought elsewhere and delivered at significant cost.

The first priority, and one that had not been mentioned prior to this workshop, was sanitation. This option won the vast majority of the votes. It was expressed that there were hardly any latrines in the community and that it was a continuous source of embarrassment and inconvenience. People had to walk a considerable distance to conceal themselves in bushes and dongas for their daily ablutions. When asked why people had not build latrines if it was so important, the reply was that the ground was too rocky and hard to dig. The women did not have the time or energy to dig, and the men and young folk were reluctant.

The Induna made a request that we find funding for the community to get latrines, but it was explained that that was not the purpose of our research. An offer was made and accepted for an educational site visit to improve the community's understanding of the requirements for building a latrine.

After the voting, there was some further discussion, during which livestock watering, community gardens, family gardens, and block making were mentioned again as issues that needed attention within the community.

eering away from the project goal, it was deemed necessary to inform the community of their options and help them to pla

2.4 Sanitation field trip

3 November 2003
From the outcome of the first workshop it was clear that sanitation was a very important issue in the o's urine diversion toilet. Urine diversioncommunity. Although this was st n a way forward.

Mr Richard Holden of the Mvula Trust was contacted for advice due to his experience in community driven sanitation in the Msinga area. He directed us to Mrs Vetrinah Madondo who is currently working with Mr Holden, and is from the Msinga area. An educational site visit was organised, and 15 people from the Nhlungwane community were taken to be shown Mrs Madond is seen to be an appropriate technology for this area, as it is extremely rocky, and difficult to dig in. The people of Nhungwane had expressed that the reason for their being no latrines in the area was due to the lack of time and energy required to dig a pit. We aimed to show them an alternative that did not require a pit, and could also be afforded without external funding.

The trip was very successful, and sparked many questions and discussions.

2.5 Workshop 2

4 November 2003

The day following the field trip, a meeting was held to discuss the trip with other community members, and to cost a latrine. The meeting was led by the Induna who reported back on the trip, and answered any questions. Following this, he workshopped all the materials needed and the costs thereof.

The costing was a shock to most, and resulted in the Induna requesting funding from us. We explained yet again that the community needed to make a plan that did not rely on government subsidies, or other donor funding. In order to justify this, and to put the expenditure into perspective, it was explained that a latrine should be viewed as part of the house, and thus building a latrine is simply building a small room – the only extra expense being the toilet seat. This concept did not appear to be grasped, and the workshop ended with a request that those present discuss the options with their friends and family, and try to come to a conclusion as to how/if they would like to proceed.

2.6 Workshop 3

20 November 2003

The aim of this workshop was to help the committee and the community to come to a decision on whether or not to keep the community levy for another shared goal, after the introduction of the free basic water. In order to achieve this, the community had to explore the options that came out from the previous workshops. No decision was made in this workshop as it was poorly attended, and because the committee felt that it was important that the whole community (including those who work in town and only come home during holidays) be part of the decision making.

Block making

The block making project would be aimed at providing blocks for the community while providing an income for those involved. The target market is Nhlungwane and neighbouring communities. The members would be expected to contribute the capital, or fundraise if possible to initiate the project. There is someone who makes and sells blocks already, but the community wants to provide competition in order to bring the prices down. A block making machine, cement, sand, water, a store room and labour were identified as the things they need to have, in order to start the project.

Livestock watering

At present there is insufficient water for livestock in the dry season. The Nhlungwane stream runs dry in winter, and the livestock have to go a long distance to the Mpofana River. The participants estimated the daily consumption of 25l/cow/day and 7l/goat or sheep/ day (note: the Department of Agriculture recommend the figure 40litre/large stock unit/day for planning purposes). The project charges 20c per 25liters. This amounts to R6/month/cow and R2/goat/month. This is relatively expensive for the community. Also, not everyone in the community has livestock, so the issue of who benefits if the community levy was used to buy extra water for livestock drinking raised a debate. Some people felt that everyone should contribute towards getting more water, since animals like donkeys plough for everyone. Others believe that the matter should concern only those who keep livestock.

Community Gardens

The participants in this workshop felt that there is a need for a second community garden, since the current one is far from the settlement area. The current garden is irrigated by water from the Mpofana River, which is pumped up by an engine to the garden. However, the distance and lack of an access road makes it difficult to sell the harvest, because members have to carry the loads of vegetable on their heads. The need for fresh vegetables is high and the current garden is not meeting this need. There is a feeling that a garden within the settlement area could provide the extra produce needed.

The options chosen as the most important are community projects that cannot benefit everyone directly. For example everyone may gain access to blocks from the block making project, but not everyone would be a member of the project. The only way others would benefit is through buying from the project. It therefore follows that only members should have to pay the costs to run the project. This was explained to those at the workshop, and understood as a valid point. It was suggested by the research team that those interested in block making and the community gardens form a planning group. The research team offered to help with some planning exercises and business skills.

Sanitation is seen as a shared goal that everyone would directly benefit from. The problem is that the costs for training and the start up capital are high. It was decided that the committee and the community should decide whether they should invest some of their savings into this project. However it was agreed that it was not feasible for the R7 water levy to be used for sanitation.

Water coupons

The absence of any clearly defined, practical, shared community goal let td to the development of the concept of the water coupon.

The proposed water coupons are A6 size cards showing pictures representing 96 x 25litre containers (i.e. at total of 2.4kl per card). The householders name is printed near the top of the card, and the administrator's signature is found in the bottom right of the card to authenticate it.

householder's card. Once all units on the card are crossed off, the ration is finished, and the card cannot be used again.

An example of a pre-paid water coupon drafted for Nhlungwane

One of these cards would be issued per household per month as their FBW allocation. As mentioned above once this free card is used up, the water allocation is fully utilised. However, the system would allow householders to purchase extra cards each month if required. The cards would be sold by the administrator for approximately R10.00 (the price would determined by the rate charged by the uMzinyathi District Municipality). This would allow each family to choose their own need, whether it be clothes washing, food gardening, block making, cattle watering etc. This would not be limited to householders, but could be a means for businesses to purchase water for their projects. This was seen as a solution to the development priorities mentioned in workshops that were argued to be valid, but not beneficial to everyone.

The R10.00 per 2.4kl would either be paid to the water service provider, or the money would be used by the Water Committee to pay for the extra pumping and wage costs that would result from the increased consumption.

The water coupons were suggested by the research team due to it being a simple, robust system with no electronic, mechanical or hydraulic parts that could break. The coupons would fit into their current system with very little adjustment.

The idea of water coupons was introduced at workshop 3, and was welcomed by those who came to the workshop. However, there was a concern that people who volunteer to oversee the stand pipes do not do their work properly as they are not paid for it (it is understood that the tap minders to not actually attend the taps when they are open). It is believed that water gets lost as a result of this, as people get more than the amount that was agreed upon. The possibility of paying the 41 people who are caretakers on each stand pipe was to be discussed in a community meeting in December 2003 (but note that if the payment of tap minders is to be necessary, the modest remuneration of R50 per minder per month would cost more than R2 000 per month, more than the entire current operating budget).

Since no decisions were taken at this workshop, the committee suggested that these matters were to be discussed further in the community annual general meeting in December.

The research team and the community leaders present were positive about the implementation of the adjusted system in the new year.

2.7 Introduction of prepaid coupon concept at Nhlungwane AGM

The research team was not present at this meeting, but a report of the outcome was given by the Induna.

Despite the positive response that was received during the workshop period, the decision taken at the AGM was to not introduce the water coupons, or make any plans for the introduction of Free Basic Water. It was reported that a few influential members of the community who live and work in Johannesburg, opposed the plan. The reasoning given by these people was that the community should retain management within the community and not let the government take over operations and maintenance. They voiced distrust in the government and predicted that FBW will not last long. They fear that if they hand over to the government that the government will not fulfil their obligations, and will leave the community in a worse off position.

The Induna was not happy with the decision and had a second meeting with some of those who vetoed the changes. At the Induna's request, the research team attended this meeting to explain what is being proposed, and also what the uTWP policy and implementation plan is. The meeting was successful and the Induna was able to reconcile with these people so that the community can plan for the implementation of FBW. The community want to have a meeting with the DM and uTWP to present their plan to the District Municipality in order to continue to manage the daily operations and maintenance of the scheme. The research team have approached the relevant persons to set up this meeting, and are awaiting a response.

3 Conclusions

The options for re-directing the R7.00 levy are not simple:

Sanitation is definitely the highest priority in the community, and one that affects every household. However, the cost of sanitation could not be met by the R7.00 levy. The community may decide to use some of their R40 000 savings to initiate a sanitation project, but the construction and materials costs would have to be borne by the householders.

A block-making project was also a popular choice, yet when the option was analysed people realised that they did not want to contribute monthly to a project that would benefit some, and not others. This same lack of uniform benefit to the whole community was realised for livestock watering and for a community garden. Ultimately the community could not come to agreement.

The water coupon was hoped to be the 'fair' solution to everyone's different development priorities. The community was positive about the option, and have decided to discuss it further. The obstacle with this system is, however, the need for daily monitoring of consumption. It is believed that people will not be prepared to manage the system without receiving payment for their time. Payment of each tap minder would result in a significant extra running cost that would not fit within the uTWP budget and is thus unlikely to be approved.

Other related WRC reports available:

Modelling of rectangular sedimentation tanks.

TN Lemmer; CGdK du Toit

When undertaking projects in rural areas very little consideration is given to the view and concerns of the affected community. A strategy for public participation and involvement in rural water supply and sanitation projects will ensure the thorough understanding of the project by the local community, a user-friendly design of the infrastructure due to input from the end-users, i.e. the community itself, provide a platform for community consensus and give the social development consultant a better understanding of the community skills levels and hence the production of a better training document for the operation and maintenance phase resulting in a sustainable project.
This study also aims to analyse the various scientific techniques used in public participation, analyse the impact of each technique and develop a strategy to enhance public participation and public involvement in rural water supply and sanitation projects.

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