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**Implementing
SA's free basic amount
of water policy**

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FREE BASIC AMOUNT OF WATER POLICY**
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1 Contents

The presentation is divided into the following sections:

- General policy development: 1994 to 2001 page 1
- Why the new policy was necessary page 2
- Overcoming the anticipated negative outcomes page 4
- Current implementation options page 8
- Business and the free basic amount of water policy page 9
- Ensuring the success of the policy in the long term page 11

2 General policy development: 1994 to 2001

Initially, in 1994, the new democratic government promoted the policy that all water services should be self-financing at a local and regional level, the only exception being that the cost of **constructing basic minimum services** with National Revenue would be considered in poor areas. **All users** were to pay for improved water services. To attain equity, conservation and financial sustainability, rising sliding scale tariffs were proposed. To achieve equity, a life-line or social tariff was proposed for the first 25 litres per capita per day, regardless of the level of service. This tariff was to cover the average operating and maintenance costs incurred by the water supplier but exclude all capital financing related costs and charges (DWAF 1994, pp 19 and 24). As late as February 1996 the **draft** National Water Supply Regulations, whilst supporting the concept of a social tariff, proposed that making the provision of any water free to customers be made illegal (DWAF 1996, p 3, reg 1.(d)).

Up to 80% of the cost of supplying water is fixed. Additional water consumption, up to the capacity of the existing scheme, adds little to the water service supplier's costs. Thus the average cost of supplying water is highly dependent on the average water consumption of each customer unit. As a result, to achieve financial sustainability and self-financing at the local level, the social tariff charged to poor customers, for a basic water supply in poor rural areas, was higher than the normal tariff charged to many urban customers with a conventional unregulated full-pressure house connection. In 1997 the Department of Water Affairs and Forestry acknowledged that this was contrary to the implied intentions of the 1994 water and sanitation policy white paper, and that some form of subsidisation was required in poor areas to achieve equity.

In the meantime, in May and October 1996, South Africa adopted its new Constitution. This constitution contains a *bill of rights* which guarantees everyone the right to *sufficient food and water*, subject to the state taking reasonable legislative and other measures, within its available

resources, to achieve the progressive realisation of each of these rights (GSA 1996, p 13, chapter 2 clause 27).

The *bill of rights* gives no indications about the terms and conditions under which services providers are obliged to guarantee customers the right to sufficient water, but the 1997 Water Services Act both clarifies and limits these rights, by indicating that only persons who prove that they are unable to pay for services are entitled to free basic water services (GSA 1997, p 12, clause 4(3)(c)). Clause 4 of this act allows water services providers to cut off a customer's water, provided the cut-off is in accordance with well-publicised local authority by-laws, if that customer doesn't register as indigent, or, even after registering, uses more than the basic amount, or, is obtaining water from a household connection in an area where a basic RDP level of supply is also available (Leitch 1999, p 12).

To assist local government perform its functions, the 1996 Constitution also requires that an equitable share of nationally raised revenue be allocated for the exclusive use of local government (GSA 1996, p 120, chapter 13 clause 214). As implemented, approximately 90% of the equitable share transfers are disbursed to local government through the "S" grant to cover the recurrent costs of providing an essential minimum package of basic services to indigent households. The first transfers were made in July 1998, with urban areas receiving R 51-60 per month per indigent household and rural areas only receiving an insignificant R 8-60 per indigent household. The urban bias still exists, but to a lesser degree, and it is planned to achieve full parity in the 2004/05 financial year.

In April 1998 the City of Durban restructured its domestic water charges so that all households using not more than 6 kilolitres in the month received their water free of charge. Shortly thereafter various organisations including the Rural Development Services Network, the South African National NGO Coalition and Cosatu started advocating that all South Africans should receive 50 litres of water per day free. Despite the policy set out in the Water Services Act, in June 2000, the Minister of Water Affairs and Forestry, Ronnie Kasrils, in his address to the National Assembly during the budget debate, praised the City of Durban for its introduction of a free basic amount of water to **all** households (DWAF 2000b). This plus the minister's address at the Stockholm Water Symposium in August 2000 (DWAF 2000c) paved the way for the ANC's local government elections 2000 manifesto, which promised to provide all households with a free basic amount of water, electricity and other municipal services, so as to help the poor (ANC 2000). The manifesto further stated that those who use more than the basic amounts will have to pay for the extra they use. Cabinet subsequently confirmed 6 000 litres per household per month as the approved free basic amount of water (DWAF 2001)

3 Why the new policy was necessary

This gradual but fundamental change in policy may surprise some of the delegates at this Water Africa Conference, so I want to take the next few minutes explaining why government came to realise that fundamental change was necessary.

Whilst the black share of income rose dramatically over the five years between 1991 and 1996, almost all of this increase occurred among the top 10% of black earners. In contrast, the poorest 40% of black households, at least 75% of whom live in the rural areas, actually suffered a fall in

income of around 21% (Whiteford & van Seventer 1999). That this trend continued in most areas over the following four years and showed no signs of abating was acknowledged by the Minister of Social Development, Dr Zola Skweyiya, in a press briefing in October 2000 (DSD 2000). As a result, the delivery of a free basic amount of municipal services has become an important initiative of the Government to alleviate growing poverty.

With respect to water schemes in poor areas, where water services providers implemented government's original 1994 policy of charging the tariff required to cover the average operating and maintenance costs, which was generally between R 4 and R 5 per kilolitre, water usage was found to be extremely low. Table 1 gives water usage figures from schemes evaluated by myself during 1998 and 1999. These low water usage figures mean that any health benefits that could be expected through improved water delivery from such schemes must be at serious risk. In addition, with such low usage rates the schemes will not survive in the long term without significant external financial subsidisation. Thus the alternatives to a radical revision of the 1994 policy are: continued hardship amongst the poor, the certainty of further cholera outbreaks, and underutilised assets. Society in general should, therefore, have a special interest in ensuring that all households do consume a basic amount of essential services, particularly water, and support government's new policy, until a better one is proposed and implemented.

Table 1: Water usage figures from evaluated schemes (DWAF 2000d, p 14)

Scheme name	Water tariff: Rand/kilolitre	Regular users: % of total population	Average usage for whole community	
			per household kilolitre/month	per person litre/day
Shared standpipe schemes: no water-borne sanitation				
Modderspruit	4-00	43	0,58	3,4
Khutsong	10-00	20	0,45	2,7
Masakala	5-00	unknown	0,20	1,2
Different areas of Koffiefontein: individual household connections, all stands have water borne sanitation				
Dithlaki	5-92	n/a	3,43	20,7
Diamanthooghte	5-92	n/a	3,96	24,0
Koffiefontein	3-79	n/a	19,05	115,5

At first reading, South Africa's proposal to provide all households with a free basic amount of municipal services rather than proposing a targeted subsidy for poor households seems inappropriate. However, when combined with a rising block tariff, or equivalent, as intended in the water sector, the proposal is a self-targeting subsidy, which chiefly benefits households using a low basic amount of water. In contrast, experience in urban Chile, Colombia and Panama, where institutional capacity is high, demonstrates that it is extremely difficult to design well-targeted subsidies (Gómez-Lobo & Contreras 2000, p 3 and Foster *et al* 2000, p 2). Once real efforts are made to ensure that the percentage of deserving households that are excluded is low, the percentage of relatively high income households that are included becomes high. Therefore, South

Africa's self-targeting subsidy, with its lower administrative cost and no means testing or assumptions, seems a sound alternative, which should be supported by all stakeholders.

4 Overcoming the anticipated negative outcomes

Although the government's free basic services policy has been generally welcomed in South Africa, this support does not necessarily mean all the outcomes will be positive or fair. It is thus important that all stakeholders work to ensure that intended positive outcomes are maximised and that negative ones are minimised.

Thus, I hope all the responsible local authorities have already engaged with the water services providers in their area, whether community, local government, parastatal or private, to ensure that services are not failing because the provider has been unable to collect revenue since government made its election promise or since the Minister of Water Affairs and Forestry set 1 July 2001 as the date for implementing the free water policy (DWAF 2001). Authorities also need to ensure that individual poor households are not having their services cut off when they have contained their consumption to the agreed basic amount. Without this urgent communication between WSAs and all WSPs, but especially non-formally contracted ones, free water can quickly become no water. In addition, District (Category C) Municipalities and Local (Category B) Municipalities must talk to each other and formally agree who is responsible for what.

In rural areas, local government's developmental and services delivery responsibilities are best served by the WSA appointing community level WSPs to manage both stand-alone community water supply schemes and the distribution components of larger regional schemes. With equitable share payments being made directly to local authorities, there is a danger of customers being treated as the objects of hand-outs rather than as partners in development. Thus, public community partnerships (PCPs) may become rarer than they are today, as local authorities try to hold on to equitable share payments, rather than objectively looking at the long-term benefits of PCPs. Both the Water Services Act and the Municipal Systems Act recognise the potential benefits of PCPs. However, their legal frameworks make implementation of this option difficult, rather than facilitating it. Both acts, therefore, require urgent revision.

Table 2: Number of people with an inadequate water supply, by province (DWAF May 2000a)

Province	Number of people	Percentage of people in the province
Eastern Cape	4 399 842	66,95
Northern	3 293 112	64,07
KwaZulu-Natal	5 325 630	60,68
North West	1 643 303	46,97
Mpumalanga	1 221 238	41,81
Northern Cape	177 708	20,28
Free State	531 881	19,37
Western Cape	403 252	9,77
Gauteng	700 000	9,14
Total	17 695 966	41,82

Looking more broadly, the most classic objection to any free service policy is that unserved and poorly served households gain less from the subsidy than better served and often more prosperous households. From table 2 we see that this objection applies to about 40% of the South African population. However, it is estimated that the infrastructure installed for over 50% of those inadequately served has sufficient capacity and access points to deliver an adequate supply, but that the availability of water from the infrastructure or the reliability of the supply is still inadequate. The inadequacy exists because:

- users upstream are using excessive water that they are not paying for, or
- day-to-day operation and maintenance are poor, or
- some refurbishment is needed.

Thus, for 55 to 60% of the inadequately served, turnaround projects, focusing on capacity building, skills training and refurbishment, are required. For the remaining 40 to 45% many are in a crisis situation which requires immediate relief. Figure 1 suggests a way forward. It also takes into account the lower demand for sanitation and people’s dissatisfaction with the RDP level of service. If all are to be served with sustainable schemes within a reasonable time period, more appropriate designs than have been used to date will be required. It is anticipated that these designs will place a strong emphasis on optimising the use of groundwater. In low density areas, as typically found in the Eastern Cape and KwaZulu-Natal, the cost of flow-regulated yard tanks is similar to the cost of RDP level shared standpipes. In high density communities, as typically found in Northern Province, the regulated yard tanks will be more expensive than shared standpipes, but will still be cheaper per capita than schemes constructed in low density areas. Thus yard tanks are a viable option, provided funding is made available, with a per capita ceiling, for any appropriate scheme and level of service, rather than being made available for RDP level schemes only.

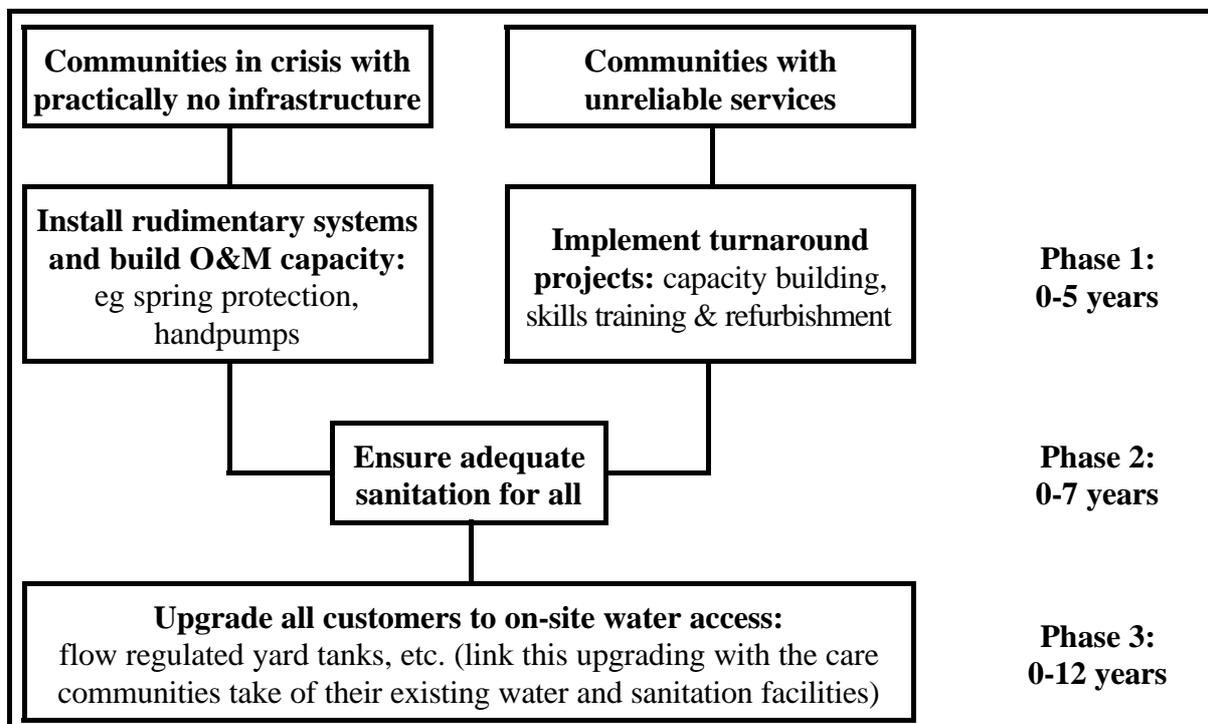


Figure 1: An effective strategy for water and sanitation for all - for ever (after Glover 2000)

The way forward set out in figure 1 is probably significantly different from what is being proposed by most local authorities in their current Water Services Development Plans. I therefore recommend a major review of these plans. Without adequate planning, target setting, monitoring and corrective action, all required by clauses 12 to 18 of the Water Services Act (GSA 1997), many will still be without adequate water services in twenty years' time. The statement by Ronnie Kasrils, the Minister of Water Affairs and Forestry, that within seven years all will have an adequate water supply (DWAF 2001b, p 2) will not make it happen, but with good planning and advocacy the government can be motivated towards honouring its pledge.

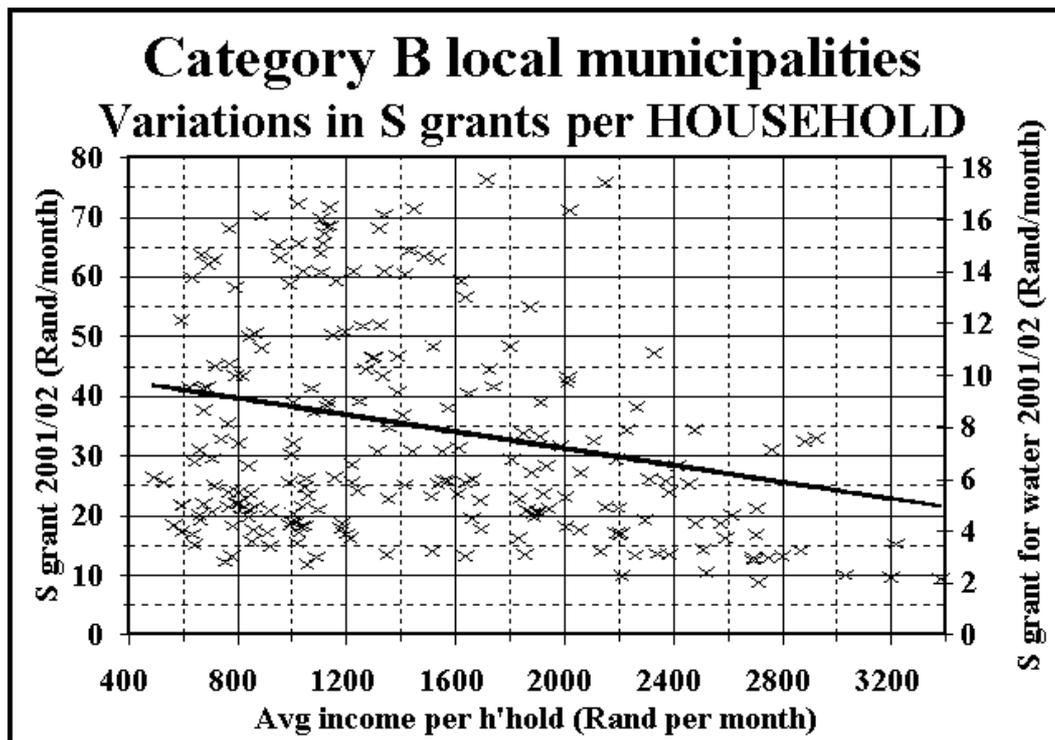


Figure 2: Category B local municipalities: Variations in 2001/02 equitable share S grants per household (DPLG 2001 and Demarcation Board 2000)

And what about those who currently have an adequate water supply? We all know that, even in the medium term, a system will not be sustainable unless the water service provider's income is at least equal to its operating, maintenance and capital repayment costs. (If the scheme has been built with grant finance and as a result there are no capital repayment costs, for long-term sustainability there still needs to be some source of funds for asset replacement.) Government policy is that the free basic amount of water services is to be funded using a combination of local government's equitable share revenue and internal cross-subsidies from appropriately structured tariffs (DWAF 2001a). For the six metros, with a combined population of 12,6 million, a basic amount of municipal services can be provided in the medium term to all households living in areas with existing infrastructure by July 2002 (Hazelton 2001a), using the current equitable share payments combined with internal cross-subsidies.

However, there are 102 local authorities, with a population of 14,6 million, where the average 1996 household income was less than R 1 200 per month. The cross-subsidies that these local authorities can generate are insignificant. In addition, figure 2, which records the average

household income for each category B municipality against the 2001/02 equitable share S grant per household, indicates that the current equitable share allocations for the majority of these authorities is inadequate for implementing the new policy. For some customers living in these areas a free basic amount of water may mean no water because of this paucity of funding and the available funding not reaching its intended goal.

For a further 105 local authorities, with a population of 10, 9 million, the average household income was less than R 2 400 per month. Whilst these authorities, particularly those towards the top end of the group, should be able to generate significant cross-subsidies, it is still likely that those with equitable shares falling below the trend line in figure 2 will find it extremely difficult to provide a basic amount of free water to all. For customers living in these municipalities a free basic amount of water may mean a reduction in the quality of service because of insufficient funding. Such an outcome is contrary to the whole spirit of the Batho Pele white paper on *Transforming public service delivery* (DPSA 1997).

There are only 24 category B local authorities, a population of 2,3 million and with an average household income greater than R 2 400 per month. These should be able to apply the policy without a significant dependence on the equitable share in the medium term. However in the long term, careful monitoring will be required to evaluate how the free basic amount of services is affecting the ability of all local authorities to raise capital for replacing existing assets, upgrading the level of service, and extending services to new customers.

The present method of disbursing the equitable share sends the wrong message to local authorities since there is no financial incentive to provide even a rudimentary level of service to all customers. To maximise positive outcomes, disbursements to both WSAs and WSPs should be linked to performance. In addition, if category C district municipalities are to become the WSAs as planned, then the disbursements should be paid to them rather than to category B local municipalities.

Supplying any water completely free to customers has many negative outcomes. For example:

- it encourages an excessive degree of dependency;
- it breaks the important links between the service supplier and the customer which make it more difficult for the customer to obtain redress when the promised service is not delivered; and
- if not implemented with complete transparency, communities are misled into believing that water provision is cheap.

In addition, clause 27(1)(b) of the Constitution requires all households to have access to sufficient food and water. The free basic amount of municipal services policy does little to ensure access to sufficient food.

These negative outcomes can be overcome by government giving all who live in South Africa a modest, yet unconditional, income grant (van Parijs 2000 p 2) and then insisting that all customers pay some agreed percentage of the true cost of the basic amount of all municipal services (Hazelton 2001b). The introduction of a universal income grant would not do away with the need for local government to receive an equitable share of nationally raised revenue (Hazelton 2000).

5 Current implementation options

Regardless of their current equitable share allocation and their ability to raise other income to cover recurrent costs, all municipalities have a duty in terms of the constitution to make every effort to obtain grant funding to provide adequate, reliable, cost-effective water and sanitation services to all poor households in its area. A practical way forward is set out in figure 1 of this paper. This recommendation is made on the basis that government knows that it cannot allow its free basic amount of municipal services policy to fail and that it will therefore, where necessary and cost effective, increase the funds available for operating and maintaining such services.

The Department of Water Affairs and Forestry has issued guidelines on free basic water delivery to those who already have a supply (DWA 2001c). I will therefore not dwell on all the steps required for successful implementation of the policy. However I would like to emphasise a few points

- WSAs should build on existing institutions and negotiate the way forward with existing de facto WSPs. Rather than implementing each step in detail themselves, they should give each WSP the opportunity of providing as much of the necessary information as they can. They should also be given the opportunity, in conjunction with customers, to put forward ideas as to how they will provide services, using the limited subsidies that can be made available by their WSA. Sustainability is built by empowering decentralised institutions, not by over-regulating them, or, even worse, shutting them down.
- Category B local municipalities need to decide how much equitable share money they can make available to WSAs for forwarding to WSPs. (Figure 3 shows the resultant overall flow of money.) WSAs in turn need to get to know their WSPs as soon as possible and come to clear agreements as to how subsidies are to be paid. Subsidies need to be paid for services delivered to customers, with penalties applied for non-performance. Scarce funds should first be targeted at WSPs delivering a rudimentary or basic level of service in poor areas. A WSP supplying water in a poor area with handpumps should not be denied R 10 per month per customer unit so that another WSP can be paid additional funds for delivering a higher level of service to households that are just as poor. WSAs may also need to consider withholding part of the equitable share money so that it can operate a 'stokvel' for the management of maintenance funds for a number of WSPs. If this is done it must be carried out in a fully transparent manner. In poor municipalities it will be impossible to implement the latest policy, a free basic amount of water for all, especially in areas with an intermediate or high level of service. One possible way of making more money available for water in these areas is to let women decide what percentage of the equitable share is to be allocated to water. Perhaps about 65% should be allocated to water and none to electricity?
- WSPs must never allow customers to use water outside the terms of their supply agreement. The provision of a free basic amount of water will only be possible if there is effective cost recovery from those using more than the basic amount. It must be clearly understood that consumers must continue paying for water until general implementation of the free water policy in their area or until the customer has been registered as an

indigent with his/her WSP. If a customer uses more than the free basic amount of water and is not paying for the extra amount, the WSP's first action must be to help the customer to control his/her usage. Possible means include trickle-flow valves, flow-regulated tanks and electronic devices which regulate the maximum quantity of water used per day. However, if a customer cannot help to finance the control device him/herself and the WSP cannot do so either, timeous cut-offs need to be implemented. Remember a municipality may only incur short-term debt to bridge shortfalls within a given financial year (DoF 2000 Clause 22(2)). Even if not legally bound by government acts, all WSPs must comply with DWAF regulations and municipal by-laws. **Provided all spheres of government communicate effectively, total cut-offs as described above will never take place.** There will only be cut-offs if customers tampering with municipal property.

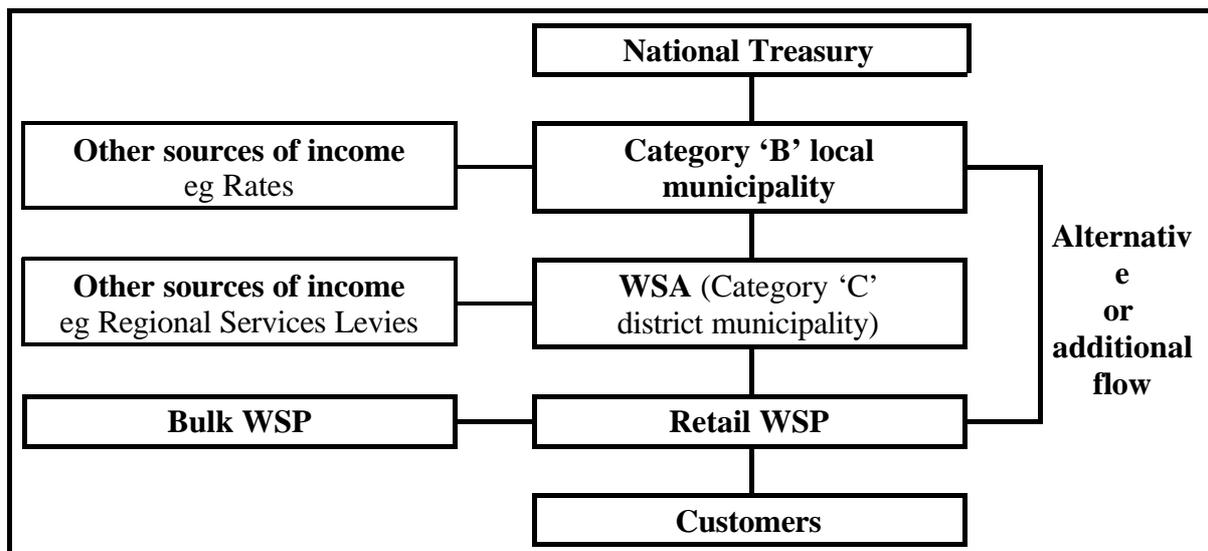


Figure 3: Overall flow of money for water supply services

Previously it was shown that many municipalities without the ability to use cross-subsidies will not be able to implement the free basic amount of water for all. Figure 4 below indicates that even targeted implementation will be extremely difficult without using more than 23% of the equitable share S grant for water.

6 Business and the free basic amount of water policy

Government accepts that the free water policy has increased the demand from citizens to have infrastructure in place to provide all with access to an adequate clean water supply. Thus the Minister of Water Affairs and Forestry recently announced that for the first time since 1997/98 over R 1 billion is available for the community water and sanitation programme (DWAF 2001b section 14). However government will be looking for better value for money than they have sometimes had in the past. Therefore, proposals which do not incorporate appropriate technology are likely to be rejected, and this, in turn, will cause delays.

Even where not demanded by the authorities, business has a responsibility to pay more attention to issues beyond technology that are important for sustainability. These include adopting a demand-response approach that is sensitive to the needs of women and youth, and ensuring that proposals include sufficient funds for capacity building and skills training focused on the operation

and maintenance of the proposed schemes. Speedy and sustainable delivery are not always compatible. Business may also need to assist local government to obtain funding for turnaround projects, similar to those depicted in figure 1.

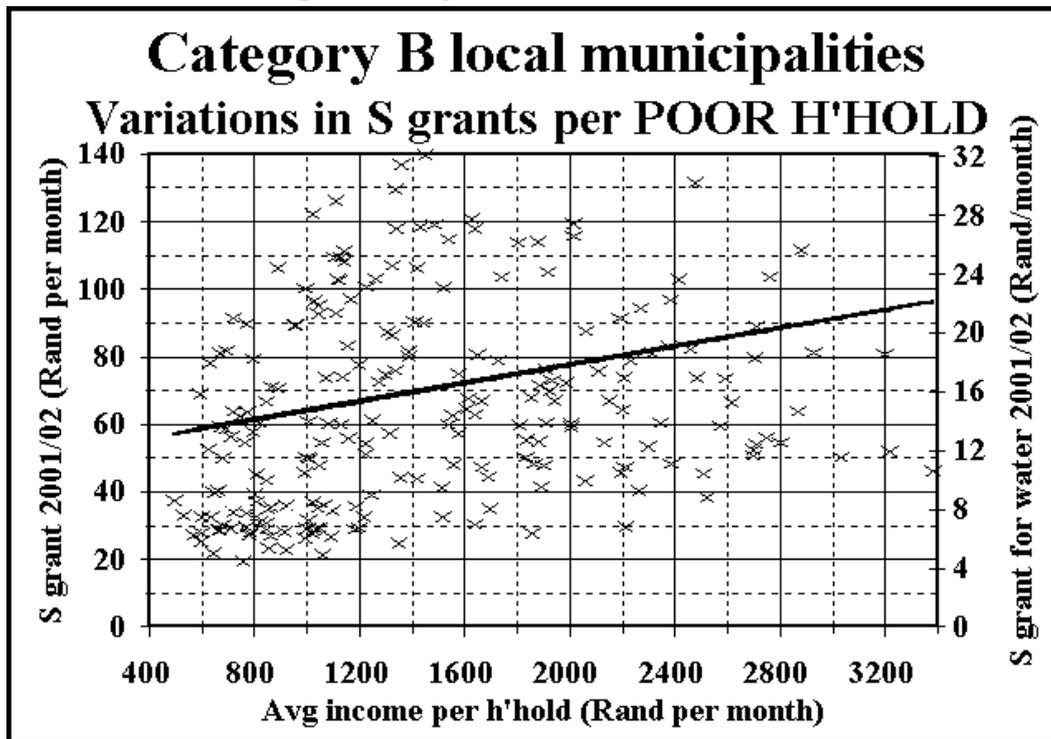


Figure 4: Category B local municipalities: Variations in 2001/02 equitable share S grants per poor household (DPLG 2001 and Demarcation Board 2000)

Although not directly connected to the free water policy, there are two other developments related to new infrastructure, which business needs to note.

- Spurred on by the cholera in KwaZulu-Natal, DWAF is preparing to speed up its sanitation programme in rural areas. As Minister Ronnie Kasrils has said, “as a nation, we must now concentrate on sanitation!” This is a new area for many of us, and if we wish to contribute effectively to this initiative, we have a lot of learning to do. (DWAF 2001b sections 3 and 4)
- DWAF works for the economy as a whole, not just for the domestic water sector. It is committed to playing its part in government’s integrated rural development strategy and to assisting emerging farmers. To this end R 20 million has been allowed in this year’s budget for the construction of new, or the rehabilitation of existing, irrigation schemes owned by Water User Associations (DWAF 2001b section 9). I expect this budget amount to increase in future years.

With respect to ongoing operation and maintenance there is a growing realisation worldwide, but especially in Africa, of the need for sector reform to achieve more reliable services, good cost control and institutions with the strength to access credit at favourable rates. The success or failure of the reform will be judged by how far it succeeds in including poor communities. Thus achieving higher efficiencies and applying good business practices are being energetically supported as long as they serve the poor and as long as civil society is centrally involved in determining the sustainable service options. There is also a growing realisation that the private

sector is likely to play a greater role in this process. However privatisation and long-term concessions are losing support, as is the emphasis on multinational companies, in favour of making full use of skills that are available from local firms, especially small ones (WUP 2001).

South African awareness mirrors this picture, even if we are unsure about the exact route we should take to implement reform to the satisfaction of all parties including organised labour and poorly organised civil society. Local government is the key responsible role player in terms of both the Constitution and the Water Services Act. Thus, assuming local government, both councillors and municipal staff, are critically evaluating broad public opinion and the soundness of the options open to them within a framework of developmental local government, then most WSAs negotiating to deliver water services in urban areas are likely to use in-house water departments or non-profit utility companies (PUCs) controlled by themselves and in rural areas they are likely to use public community partnerships (PCPs).

The private sector will mainly dovetail into these arrangements as support services agents (SSAs). The primary functions of SSAs should be institutional transformation and capacity building, and skills training at both the WSA and WSP level. In urban areas it is anticipated that SSAs will be contracted directly by individual WSPs. In rural areas it is anticipated that SSAs will be contracted by a WSA to manage transformation of that WSA, and the capacity building and skills training of several WSPs. Contracts should be for between 5 and 8 years to achieve sustainable transformation. Employing SSAs in this manner agrees with the institutional arrangements favoured for the water sector in Africa (see figure 5).

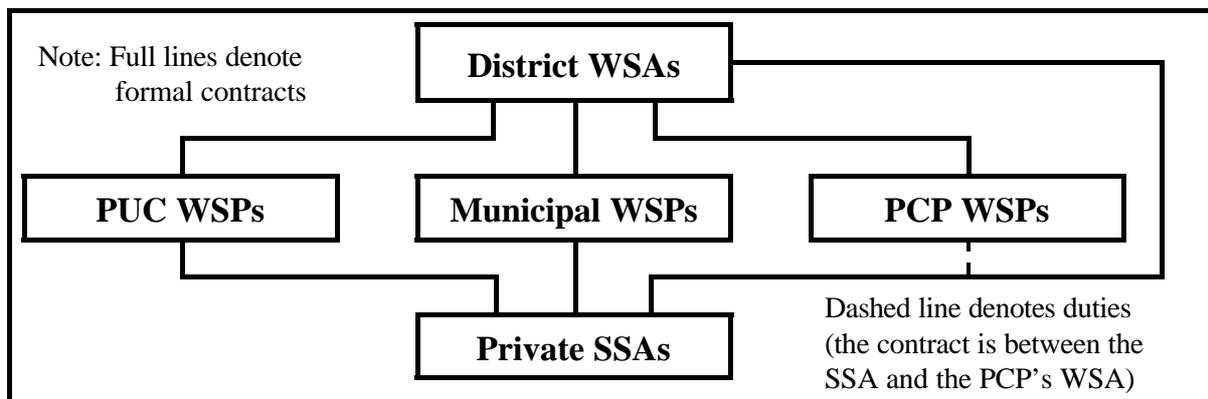


Figure 5: Institutional arrangements favoured in Africa (WUP 2001)

7 Ensuring the success of the policy in the long term

Previous sections have dealt with most of the central issues required to ensure the successful implementation of the free basic amount of water policy. However two questions are still outstanding.

- The first is the question of adequate transparent funding for WSPs for ongoing operation and maintenance, disbursed in a manner which gives them the right incentives to supply all with a quality service with on-site access.
- The second is the need for ongoing monitoring to check implementation progress and the impact of the implementation on the sector.

Funding

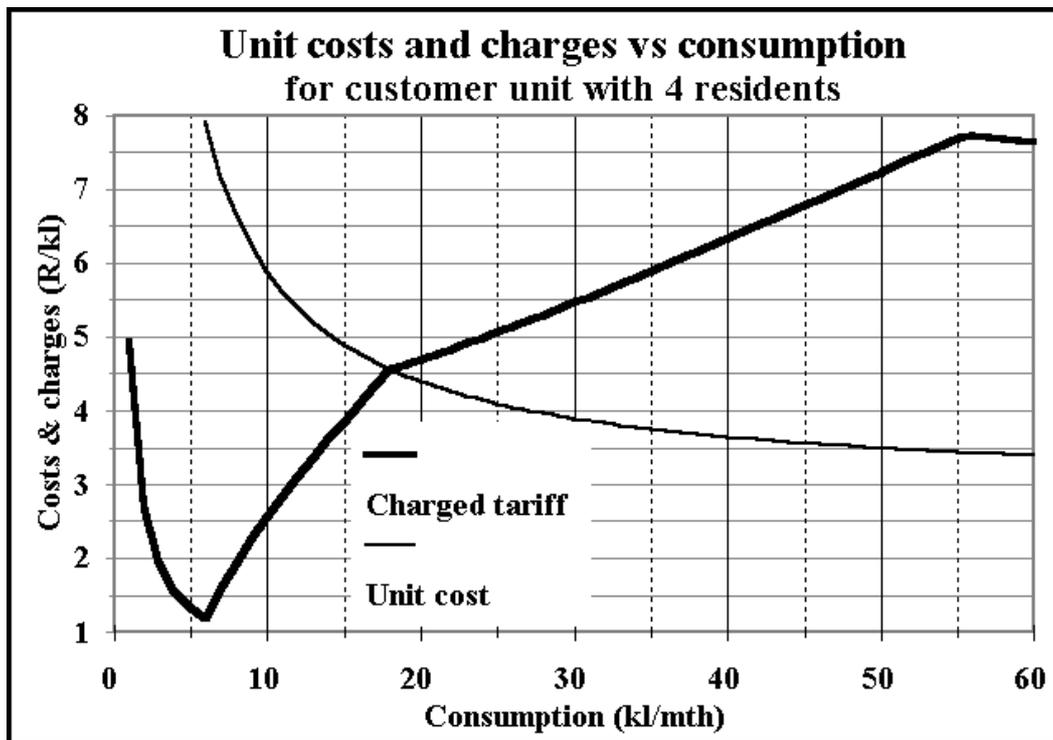


Figure 6: Unit costs and charges vs consumption for a customer unit with 4 full time residents

With respect to funding, let us start with the customers and assume that the WSP will operate its business transparently, as per the sixth principle of Batho Pele (DPSA 1997, p 8). To this end it should declare its costs up front, and let customers know the true subsidy or surcharge being billed. **For a WSP with fixed costs of R 30 per month per customer unit and variable costs of R 2,90 per kilolitre**, the resultant unit costs per kilolitre at different consumptions per month would be as set out in the thinner line of figure 6. (A customer unit comprises all the households covered by one bill, eg the occupants of the main house plus any backyard rooms.) Then for a typical customer unit of 4 persons (see figure 8), resultant charges, tied to the rebates and surcharges as set out in table 3, would be as set out in the thicker line of figure 6. The figure

Table 3: WSA/WSP agreed customer rebates and surcharges

Maximum rebate:	85,00 %
Maximum surcharge:	125,00 %
Lifeline tariff ends at:	50,00 /(cap.day)
Neutral tariff begins at:	150,00 /(cap.day)
Surcharge tariff begins at:	150,00 /(cap.day)
Maximum surcharge reached at:	462,50 /(cap.day)

shows a maximum rebate of 85% rather than 100%, since it is hoped that South Africa will soon introduce a modest universal basic income grant.

Figure 6, and other calculations in this paper, are based on a maximum rebate for the first 50 litres per person per day (ie not 25 litres per person per day). The 50 litres is arrived from the Cabinet-approved 6 kilolitres per household per month divided by the Census '96 average of 4 persons per household (Stats SA 1999, p 67) (see figure 7). Moreover, 50 litres per person per day corresponds to the popular demand (eg RDSN 1999), which makes sense in the light of the 1994 water and sanitation white paper statement (DWAF 1994, p 15) that 25 litres per person per day *is not considered to be adequate for a full, healthy and productive life*.

Lastly, when a customer's water usage just exceeds the maximum rebate amount, there is no sudden jump in his/her bill, as happens in Durban. Instead, as per the free basic amount of water

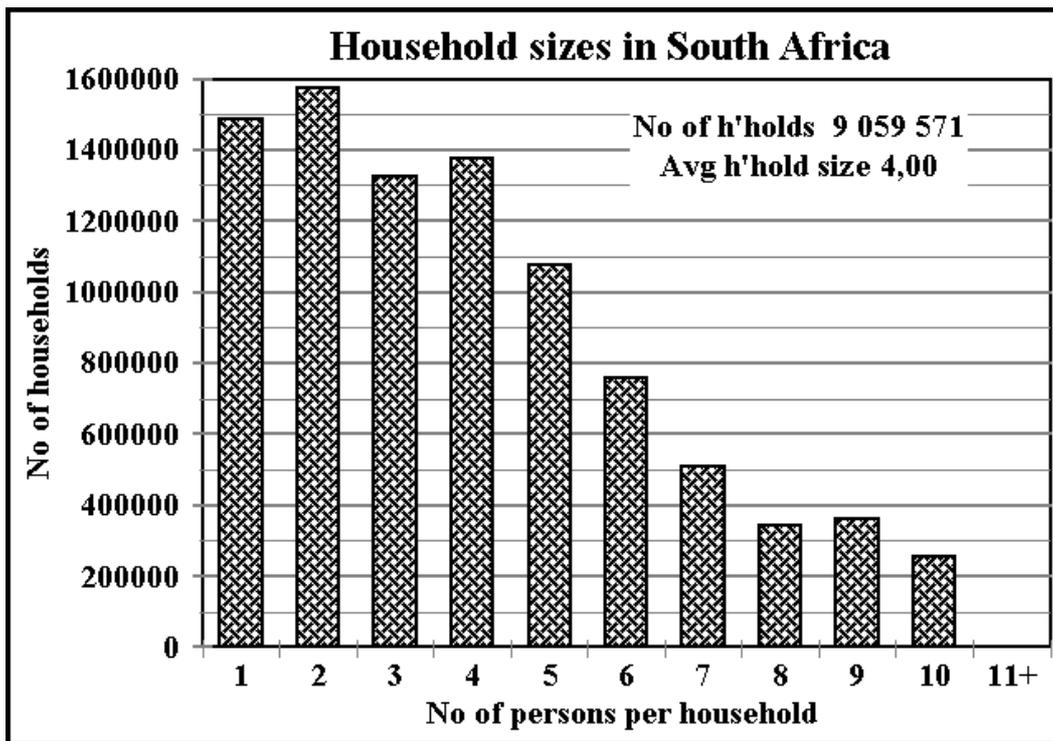


Figure 7: Household sizes in South Africa (Stats SA 1996 p 67)

policy just introduced by Johannesburg Metro, the customer's bill increases smoothly. With the rebate system illustrated, the tariff is increased speedily until the customer is receiving no subsidy at 18 kilolitres per month.

Tables 4 and 5 give additional information on resultant bills, tariffs and rebates and surcharges. Note that rebates and surcharges have been calculated for the water used per person rather than per customer unit. This is regarded as being more equitable since, even without taking into account situations where more than one stand is sharing one access point, customer unit sizes do vary greatly. See figure 8, derived from figure 7, which gives an estimate of the variations in customer size.

Table 4: Bills and tariffs for different customer unit sizes and water consumptions

Customer unit size	2 people		4 people		7 people		11 people	
Consumption k /mth	Bill R	R/k	Bill R	R/k	Bill R	R/k	Bill R	R/k
3	5-81	1,94	-	-	-	-	-	-
6	27-26	4,54	7-11	1,19	-	-	-	-
10	62-93	6,29	25-57	2,56	8-85	0,89	-	-
15	102-90	6,86	57-88	3,86	24-41	1,63	11-03	0,74
25	211-83	8,47	126-42	5,06	75-53	3,02	37-82	1,51
40	328-50	8,21	253-07	6,33	169-64	4,24	110-27	2,76
60	459-00	7,65	459-00	7,65	314-74	5,25	229-96	3,83

Table 5: Typical invoices

No of full time users		2	4	7	11
Meter reading:	05/08/2001	4367	7845	615	1639
	05/07/2001	4361	7815	575	1614
Consumption	k	6	30	40	25
No of days between meter readings		31	31	31	31
Fixed cost	Rand	30-00	30-00	30-00	30-00
Variable cost @ R2,90/k	Rand	17-40	87-00	116-00	72-50
Total cost	Rand	47-40	117-00	146-00	102-50
(Rebate)/Surcharge	%	(45,24)	36,77	13,73	(65,18)
(Rebate)/Surcharge	Rand	(21-44)	43-03	20-05	(66-81)
Total this invoice excl VAT	Rand	25-96	160-03	166-05	35-69
VAT @ 14%	Rand	3-63	22-40	23-25	5-00
Interest	Rand	0-00	0-74	0-00	0-00
Total this invoice incl VAT	Rand	29-59	183-17	189-30	40-69
Payable on or before: 7 September 2001					
Previous balance	Rand	30-95	212-49	172-78	38-70
Payment received on (say) 17 July 2001	Rand	30-95	160-00	172-78	40-00
Amount overdue:	Rand	0-00	54-49	0-00	0-00
Please pay immediately if not already paid					
Amount due:	Rand	29-59	237-66	189-30	39-39

The next query is: how are WSPs, and especially ones with a high percentage of poor customers, to remain financially viable? This could be through a targeted subsidy paid from National Treasury directly to WSAs. The first requirement for adequate funding is for national government to know delivery costs for different levels of service. To do this requires successful WSPs to send their WSA details of these costs, broken down into fixed costs and costs which are proportional to the quantity of water delivered. Figure 9 gives some tentative figures. The lower sets of figures

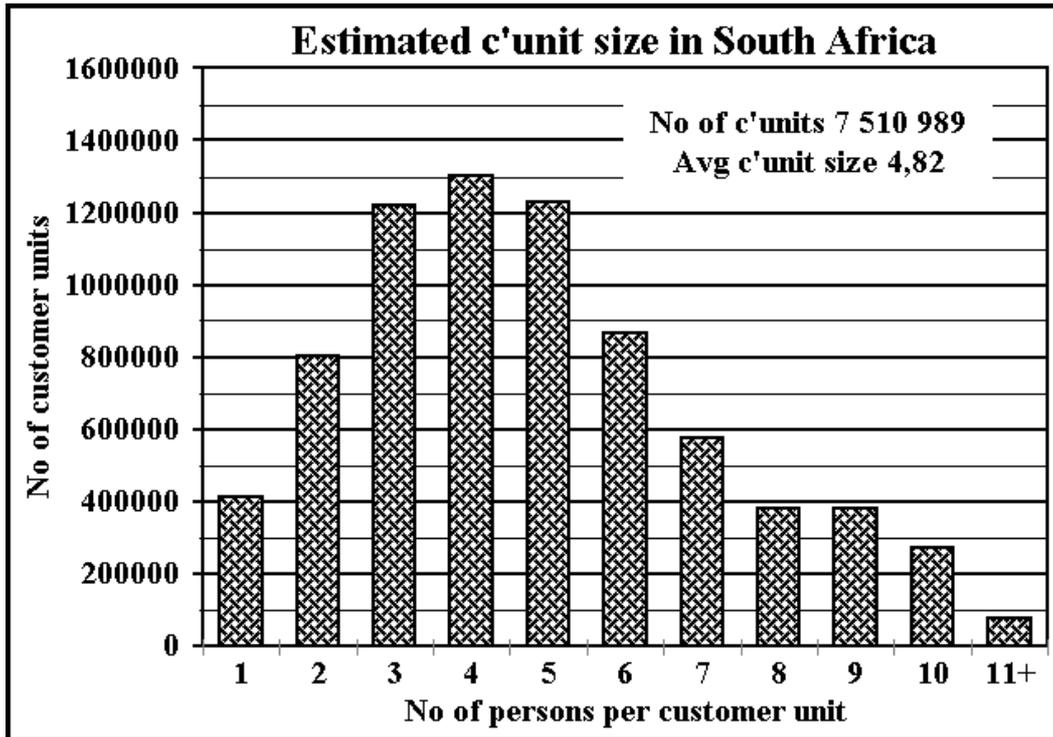


Figure 8: Estimated customer unit size in South Africa (derived from figure 7)

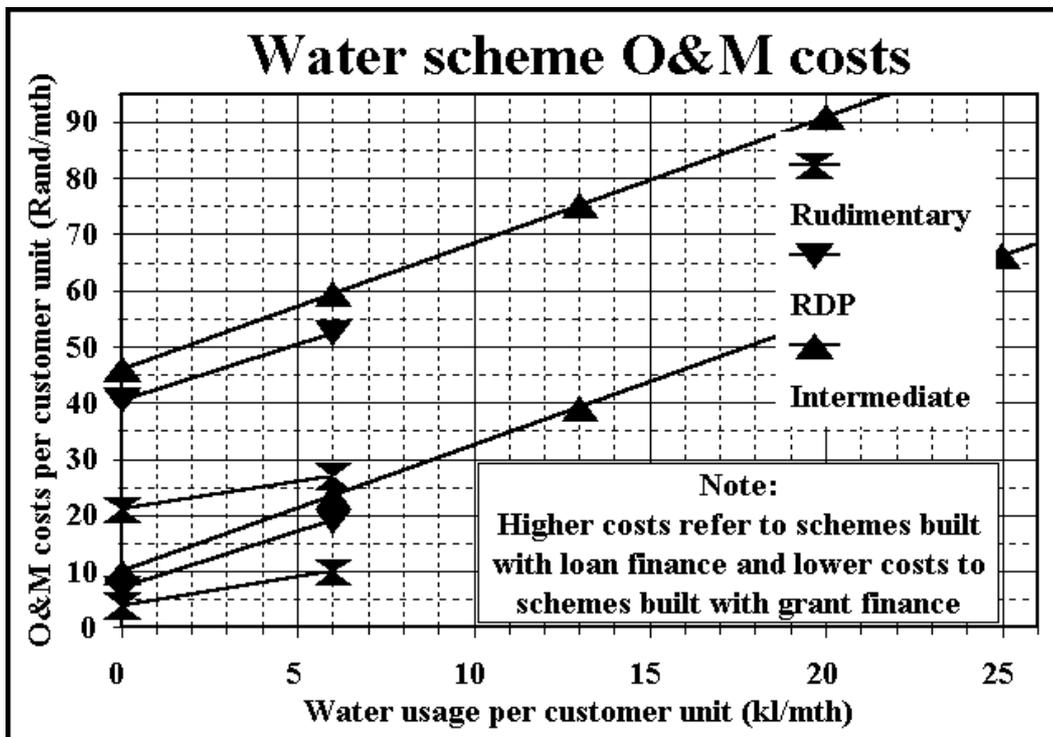


Figure 9: Tentative O&M costs for efficiently designed and managed water schemes

are for schemes constructed with grant finance and the higher sets are for schemes built with loan finance. Both sets of figures exclude any allowance for depreciation.

The costs in figure 9 need to be checked against actual figures, but they can be used by the Treasury in the short term with little risk, as they are expected to be on the low side. It is proposed that WSAs pass on a sum of money to WSPs:

- dependent on the guideline rebates and surcharges to be given by WSPs to customers (85% for the first 50 litres per person per day for examples given in this paper),
- based on the ceiling variable costs given in figure 9,
- based on each full time resident using 1,5 kilolitres of water per month from rudimentary and RDP level schemes, but reduced proportionally for each day a unit is not functioning satisfactorily, and
- based on actual consumptions for intermediate and higher levels of service, with subsidies being reduced for consumptions above 200 litres per person per day.
- plus a fixed cost per customer unit, based on an amount between the minimum and maximum cost given in figure 9, dependent on the proportions of grant and loan capital used to build the scheme.

In the long term decisions will have to be made as to how depreciation and WSPs with no loan finance are handled. In the short term it is recommended that WSPs receive no depreciation allowance. However, as soon as the subsidy arrangements are seen to be working in a satisfactory manner, a depreciation allowance should be considered. From the beginning loans should be considered for bringing customer units up to an intermediate level of service. Without such loan finance, the need for high connection fees would discriminate heavily against the poor. Hopefully the norm for an intermediate level of service will soon be a household flow-regulated tank, with the water supply being regulated with an 'equity flow' valve installed at the take-off point (DWAF 2000e pp 18, 19, 22 and 23). However 'equity flow' valves still need to be tried out on pilot projects, and many WSPs and customers need to be made more aware of the advantages of flow-regulated tanks (Hazelton and Kondlo 1998 pp 5.1 to 5.12).

The five factors listed above will result in negative subsidies for high usage customers. It is recommended that if the proportion of high consumption customers is great enough to result in a negative subsidy or a positive subsidy of less than 5% of a WSP's budgeted costs no subsidy should change hands. Note also that the different level of subsidies recommended for different levels of service will encourage WSPs to invest in new services up to the intermediate level, but will discourage WSPs from installing full pressure house connections, except where the general demand for water is high. The subsidies have been structured in this way to optimise the social benefits at a reasonable cost.

Table 6 confirms that the social benefits of on-site access can be provided at little extra cost through the use of flow-regulated tanks.

Table 6: Total O&M costs for different levels of service (Adapted from DWAF 2000e p 29)

Level of service	Consumption per month		
	6 k	12 k	24 k
FP prepaid household connection	R 81	R 98	R 134
FP conventional household connection	R 75	R 92	R 128
MP flow regulated roof tank	R 62	R 75	R 102*
LP flow regulated yard tank	R 57	R 70	R 97*
RDP level shared standpipe	R 53	n/a	n/a

* a non standard tank size may be required

Figure 6 showed typical unit costs and customer charges from a high level of service scheme, with the tariffs reflecting what is required for good cross-subsidisation between low and high volume users. Figure 10 shows the same scheme but with WSA subsidies, based on the five factors listed previously, added. **The subsidy is calculated using a fixed cost of R 19 per month per customer unit and variable costs of R 2,25 per kilolitre**, with subsidies and paybacks as set out in table 7. The fixed cost has been reduced to R 19 per customer unit from the maximum allowed R 46 in figure 9 as the WSP has very low capital repayment commitments because its old infrastructure has already been paid for and its new infrastructure has largely been paid for by grant finance. Note that figure 10 shows that for low customer consumptions the WSP is still making a loss. This is because the maximum subsidy is based on an intermediate level of service and a utility will therefore only make a surplus if it has sufficient high consumption

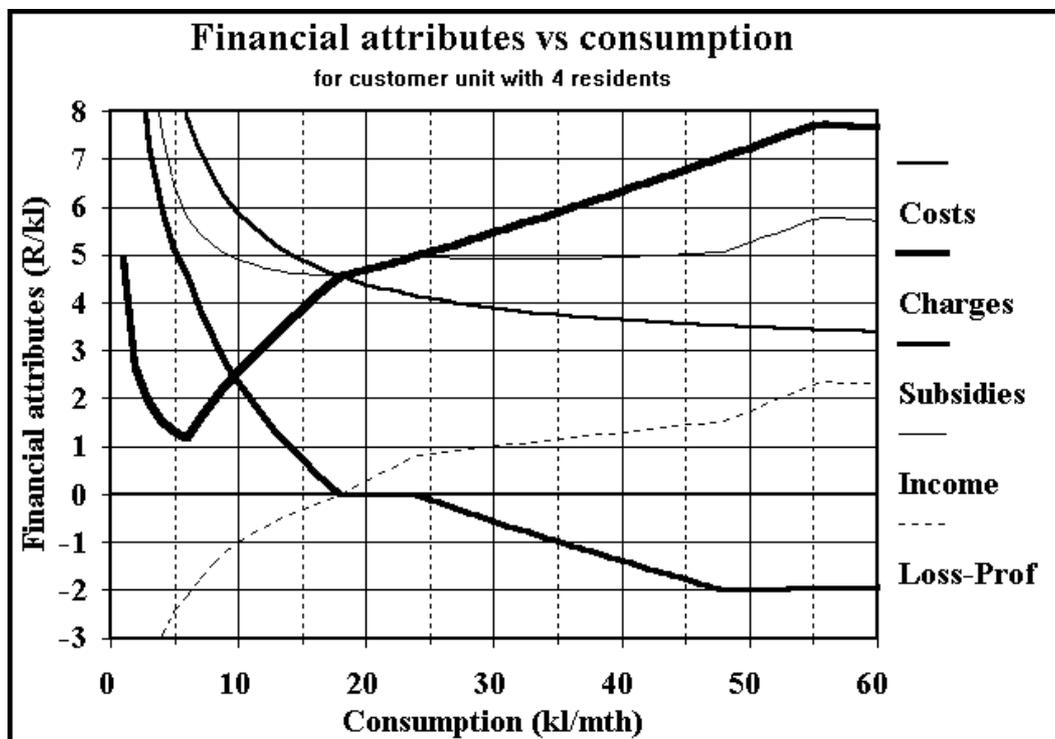


Figure 10: Financial attributes vs consumption for a customer unit with 4 full time residents

customers. The subsidy has been designed intentionally this way to discourage over-investment in low income areas.

Table 7: Treasury/SALGA agreed WSP subsidies and paybacks

Maximum subsidy:	85,00 %
Maximum payback:	75,00 %
Lifeline subsidy ends at:	50,00 /(cap.day)
Neutral subsidy begins at:	150,00 /(cap.day)
Subsidy payback begins at:	200,00 /(cap.day)
Maximum payback reached at:	400,00 /(cap.day)

To get a better understanding of how the recommended subsidy system works, study tables 8 to 10, which are worked examples using the consumption distributions from the three examples on page 6 of DWAF 2001c.

Table 8: Calculation of WSP subsidy and surplus: high level of service: high income area

Avg water consumed/c'unit in block	k /mth	5	14	21	36	53	Totals
Customer units in each block	%	25	30	20	20	5	100
Total water consumed by each block	%	6	22	22	37	14	100
No of customer units in each block		2 500	3 000	2 000	2 000	500	10 000
Cost to WSP of supplying water	Rand/mth	111 250	211 800	181 800	268 800	91 850	865 500
Charges to customer units	Rand/mth	16 688	151 790	199 980	430 080	199 008	997 546
(Deficit)/surplus	Rand/mth	(94 563)	(60 010)	18 180	161 280	107 158	132 046
Internally funded surplus	%						15,25
Calculated subsidy/(payback)	Rand/mth	64 281	42 925	0	(75 000)	(51 844)	(19 638)
Calculated subsidy/(payback)	%						(2,27)

Note: The calculated subsidy is negative, therefore no subsidy will change hands and the WSP should make a 15,25% surplus provided all customers pay their bills

Table 9: Calculation of WSP subsidy and surplus: high level of service: medium income area

Avg water consumed/c'unit in block	k /mth	5	14	21	36	53	Totals
Customer units in each block	%	35	32	18	13	2	100
Total water consumed by each block	%	11	28	24	30	7	100
No of customer units in each block		3 500	3 200	1 800	1 300	200	10 000
Cost to WSP of supplying water	Rand/mth	155 750	225 920	163 620	174 720	36 740	756 750
Charges to customer units	Rand/mth	23 363	161 909	179 982	279 552	79 603	724 409
Internal (deficit)/surplus	Rand/mth	(132 388)	(64 011)	16 362	104 832	42 863	(32 341)
Internal (deficit)/surplus	%						(4,27)
External subsidy/(payback)	Rand/mth	89 994	45 787	0	(48 750)	(20 738)	66 293
External subsidy/(payback)	%						8,76
Final (deficit)/surplus	Rand/mth	(42 394)	(18 224)	16 362	56 082	22 126	33 952
Final (deficit)/surplus	%						4,49

Note: With the subsidy of 8,76% of total budgeted costs this WSP should be able to make a small surplus of 4,49% provided all customers pay their bills

Table 10: Calculation of WSP subsidy and deficit: high level of service: medium to low income area

Avg water consumed/c'unit in block	k /mth	5	14	21	36	53	Totals
Customer units in each block	%	45	31	14	8	2	100
Total water consumed by each block	%	17	32	22	21	8	100
No of customer units in each block		4 500	3 100	1 400	800	200	10 000
Cost to WSP of supplying water	Rand/mth	200 250	218 860	127 260	107 520	36 740	690 630
Charges to customer units	Rand/mth	30 038	156 139	139 986	172 032	79 603	578 509
Internal (deficit)/surplus	Rand/mth	(170 213)	(62 010)	12 726	64 512	42 863	(112 122)
Internal (deficit)/surplus	%						(16,23)
External subsidy/(payback)	Rand/mth	115 706	44 356	0	(30 000)	(20 738)	109 325
External subsidy/(payback)	%						15,83
Final (deficit)/surplus	Rand/mth	(54 506)	(17 655)	12 726	34 512	22 126	(2 797)
Final (deficit)/surplus	%						(0,40)

Note: This WSP is over capitalised. Each customer unit has the highest level of service, namely an unregulated full pressure yard or house connection, although 45% of them are using less than 6k /mth. As a result, despite a subsidy of 15,83% of total budgeted costs, and despite controlling O&M costs efficiently, this WSP is likely to make a small loss, even if **all** customers pay their bills. WSPs serving medium to low income areas should learn from this example and investigate the use of flow regulated yard and roof tanks for most customers when they are planning to provide each stand with an individual on-site connection.

The details given previously will allow WSAs to agree on what subsidies are to be paid to WSPs. Water schemes currently being managed by DWAF should obtain their subsidies in the same way, with each DWAF scheme being counted as a separate WSP. WSAs will have to administer the disbursements and are also responsible for continuing financial and technical monitoring. Poor areas will also need WSAs to represent their special interests on catchment management agencies (GSA 1998 chapter 7). As WSPs requiring greater subsidies will probably require greater monitoring, the WSA's fee could be a fixed percentage of the disbursements, say 15%. The first worked example, given in Table 8, suggests that obtaining money for poor WSPs through national cross-subsidisation from rich WSPs would not be broadly viable. Thus ongoing National Treasury payouts to WSAs should be the sum of subsidies paid to WSPs, plus 15%. These payments do not allow for capacity building programmes. Such programmes should, therefore, be paid for from a separate institutional capacity building and skills training fund.

The recommendations set out above seek to represent the minimum requirements, in January 2000 Rand, for funding the free basic amount of water for all, in a manner that allows WSPs to remain financially strong enough to obtain loan finance when it is need. Table 11 reflects the ongoing costs of implementing the policy in the long term when all customer units have on-site access.

With the subsidy arrangements, the financial well-being of WSPs will still generally depend on the quality of its service to customers. Additional performance incentives could be implemented by WSAs penalising WSPs for failing to collect revenue from customers. The penalty could be equal to the WSP's under-recovery percentage or to the difference between the WSP's actual and billed income, whichever is the lesser. Nevertheless, such a penalty is not recommended since, after auditing, a WSA's primary task should be to support WSPs contracted to them, rather than to penalise them. Similarly, for example, WSAs should not be allowed to impose penalties for a

WSP's poor management of unaccounted-for water and poor operation of water treatment plants. Rather DWAF, as the regulator, should be the implementor, if such penalties are to be imposed. In addition, it would also be inappropriate for WSAs to impose these last penalties because they will mainly be involved with the WSPs they are subsidising, rather than with WSPs generally.

Table 11: Ongoing costs of a free basic amount of water for all, assuming all customer units have on-site access

Item	Total	102 poorest	105 avg inc	24 richest	6 metros	Total
Number of customer units - thousands	7 511	2 544	2 162	463	2 343	7 511
Number of persons - thousands	36 238	13 821	10 073	2 081	10 263	36 238
Costs - Rands thousands	Monthly					Yearly
Fixed cost @ R 46/(month.customer unit)	345 505	117 004	99 453	21 291	107 758	4 146 066
Variable cost @ R 2-25/k	124 003	47 294	34 469	7 122	35 118	1 488 035
Total cost assuming no grant finance	469 508	164 297	133 922	28 413	142 876	5 634 100
Reduction because of assumed grant finance	142 840	83 938	53 510	1 527	3 865	1 714 081
Total cost after allowance for grant finance	326 668	80 360	80 412	26 886	139 011	3 920 019
Estimated internal cross-subsidisation	204 756	4 018	36 185	25 541	139 011	2 457 068
Subsidy for WSPs from National Treasury	121 913	76 342	44 226	1 344	0	1 462 951
Allowance for WSAs from National Treasury	18 287	11 451	6 634	202	0	219 443
Total subsidy from National Treasury	140 199	87 793	50 860	1 546	0	1 682 394
Notes:						
1 Demographics from SA Census '96						
2 Population figures exclude the 4 345 289 persons living in institutions and hostels						
3 All costs refer to January 2000						

Monitoring

Since the earlier policy of making a basic amount of water available free for very poor households was only introduced 5 years ago and was not widely implemented by local government, the new policy is breaking completely new ground for practically all WSPs. In addition, South Africa cannot refer to foreign experience since a nationwide free basic amount of water policy does not exist anywhere. It is therefore essential that implementation of the new policy is well monitored to evaluate its impact in both the short and long term. The objectives of such monitoring would include:

- What effect is the policy having on the pace at which services are being extended and upgraded?
- Who is benefiting most from the policy: the urban or the rural areas; the rich or the poor?
- How is it affecting municipal water demand patterns and the total demand?
- How is it affecting the financial stability of WSPs and their ability to source loan finance for upgrading and refurbishment?
- How is it affecting the quality of service?

- What are the costs of policy implementation?
- Which implementation strategies have worked best?
- What weaknesses have been highlighted by the monitoring and evaluation process?
- What corrective action is required?

Objectives include examining the trends in the above indicators. Therefore, reasonably accurate benchmark figures are required for each WSP and de facto WSP.

Monthly WSP self-monitoring, especially by the weaker ones needing to access subsidies, and quarterly follow-up auditing by WSAs, should form the basis of the monitoring (Hazelton and Harris 1999). In addition, DWAF should support this work by extending the national information system to include ongoing WSP O&M, financial, and services delivery data. The value of a good up-to-date information system should not be underestimated. This data should then be evaluated yearly, by the Department of Provincial and Local Government, on a macro- and a sample micro-basis against the objectives set out above.

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