REPUBLIC OF SOUTH AFRICA

Water Quality Management Series

Managing the Water Quality Effects of Settlements: -

THE CAPACITY GAP IN LOCAL GOVERNMENT

Department of Water Affairs and Forestry

OCTOBER 2001

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DOCUMENT INDEX

This document forms part of the Department of Water Affairs and Forestry's National Strategy for Managing the Water Quality Effects of Settlements. It represents one of the outputs of a project that was jointly funded by the Department of Water Affairs and Forestry and the Danish Government via their DANCED program.

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Managing the Water Quality Effects of Settlements.
The National Strategy, Edition 1. Policy Document U 1.1

Managing the Water Quality Effects of Settlements
Considerations for the Sustainable Management of Pollution from Settlements. Policy Document U 1.4

Managing the Water Quality Effects of Settlements
The National Strategy. Edition 2, Policy Document U 1.3

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PREFACE

Pollution from densely populated and poorly serviced settlements is perhaps one of South Africa's most *important*, but most *complex* water quality problems.

Important, because pollution in and from these settlements not only affects downstream users, but has its most significant impacts on the communities living in these settlements. Failing sanitation and waste removal systems create appalling living conditions in many settlements, and contribute to serious health problems in these communities. Pollution in and from these settlements is, therefore, not only a water quality issue, but has much wider implications for government's aims to provide a better life for all

Complex , because pollution in settlements is rooted in the socio-economic, political and institutional conditions in the settlement. The use, or misuse, of services together with the way in which the services are maintained by Local Authorities lies at the heart of the pollution problem in many settlements. This is further complicated by the legacy of South Africa's apartheid history. Solutions, therefore, lie in changing the way in which the services are supplied and used.

However, *sustainable* solutions to the problem lie not only in our ability to supply and use waste and sanitation services to best effect, but also in the longer-term capacity of local government to maintain these services. This is likely to be the biggest stumbling block to sustainable management of pollution from settlements. Local government in South Africa clearly has significant capacity problems, and misuse of services, for a variety of reasons, is endemic in many settlements across the country. More importantly, failing waste services contribute to poor living conditions, and hence to the misuse of the services. Non-payment for services also limits the capacity of the Local Authority to effectively maintain the services, which then leads to further failure of the services.

Strategies to manage pollution in settlements must take a broader view of both Local Authority capacity, and the socio-economic and political dynamics of the community in order to arrest this downward spiral. The Department of Water Affairs and Forestry, therefore, initiated a study of the links between pollution, community perceptions and local government capacity, to run in parallel with the Test Cases. A number of reports have been produced to support this study.

It is hoped that these reports provide compelling arguments to address this problem both by ensuring better planned and run services, but also by active intervention and assistance where there are clear and immediate threats to community health and the environment. This report forms part of this process.

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Chapter 1: Introduction

1.1 Background to the project

South Africa's Department of Water Affairs and Forestry (DWAF) has long recognised that pollution from densely populated, and often poorly serviced, settlements is one of the most serious threats to the quality of the country's water resources. DWAF, therefore, approached the Danish Co-operation for the Environment and Development (DANCED) to fund a study to *"Develop a Strategy to Manage the Water Quality Effects of Dense Settlements"*. This project began in June 1997, and has been undertaken in three Phases.

Phase 1 of the study focused on developing a *Draft National Strategy*. A **Bridging Phase** provided the opportunity to get comments on the Draft Strategy, to update it accordingly. At the end of the Bridging Phase, the first edition of the National Strategy was produced as a DWAF policy document.

CLICK HERE FOR NATIONAL STRATEGY

While these documents provided the basis for implementing the strategy, it was realised that a second phase of the project was necessary to effectively anchor the strategy in South Africa. **Phase 2**, therefore, includes activities to more widely disseminate the National Strategy, to train stakeholders to implement it, and to demonstrate its efficacy in nine Test Cases. Phase 2 also included a number of studies was aimed at creating a suitable executing and policy environment for the strategy at a national level. The experiences gained in this process have been used to produce the second edition of the National Strategy.

TEST CASE PAGE

1.2 Objectives of this report

Most local authorities in South Africa suffer significant capacity problems. The National Strategy refers to this problem as the "Capacity Gap". This is defined as the difference between the capacity required to operate and maintain services, and the capacity available within the local authority. This includes the local government's organisational capacity, technical capacity, procedural capacity, and networking capacity as well as their financial resources.

Where a Local Authority does not have the capacity to manage its waste management services, due to problems with any one of these factors, services are not effectively maintained. When this occurs the systems fail, and pollution problems emerge. Many, but not all, of these are related to the Local Authority's financial status, and financial problems and have been recognised as a major contributor to water quality impacts. (See the report on the Financial Gap.)

This capacity gap affects both the way in which a local authority may implement the National Strategy, as well as the water quality impacts of their settlements. Local Authorities with a significant capacity gap are less likely to engage the recommendations arising from the Strategy due to financial limitations, and are more likely to curtail operation and maintenance of services.

The discussion presented in this document is focused on the capacity gap as it affects the water quality impacts from settlements, and explicitly takes a water quality management perspective[1]. This report:-

- Describes the nature and causes of this capacity gap (**Chapter 2**).
- Introduces options to close the gap (**Chapter 3**).
- Outlines a preliminary framework for closing the capacity gap in those local authorities that require external assistance to get out of the "debt trap" (**Chapter 4**).

[1] This report does not engage the wider issues of ensuring effective and sustainable local government, but rather addresses those components that have a bearing on water quality management.

Chapter 2: The O&M Capacity Gap

2.1 What is the capacity gap?

A Capacity Gap arises where the local authority does not have the capacity (mandate, legal, organisational, technical, financial, procedural or networking capacity) required for effective operation and maintenance of existing services. In this project the municipal services of interest are sullage drainage (from water supply), sanitation services, household refuse collection and street litter collection, and storm water drainage. Figure 1 shows that the capacity required to operate and maintain services tends to increase with level of service, the higher the levels of services, the greater the capacity required to effectively operate and maintain these services.

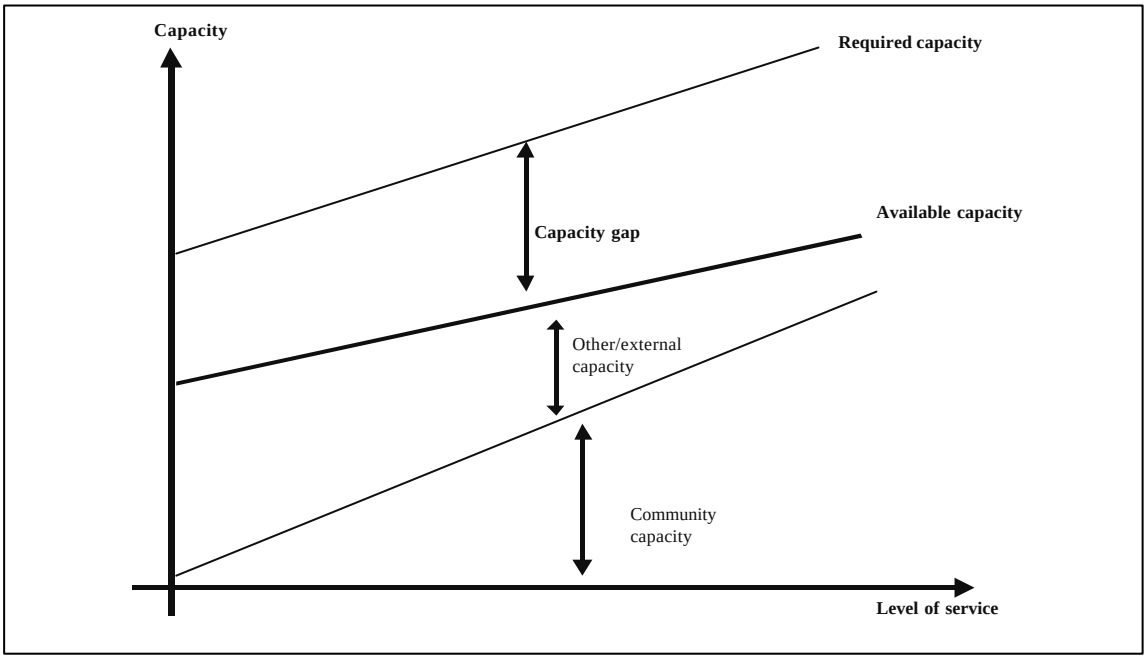


Figure 1: A Conceptual Illustration of the Capacity Gap
(Note: This is a diagrammatic representation of the relationship between the capacity gap and the level of services. The actual position of the lines shown change according to the social, institutional or physical conditions in the settlement, as will be highlighted in the next sections.)

2.2 A financial interpretation of the O&M capacity gap

CLICK HERE FOR FINANCIAL GAP

The report on the financial component of the capacity gap in three South African towns presents a financial interpretation of the capacity gap, with particular emphasis on the requirements for financial modelling. This provides a useful perspective for discussing the capacity gap, as illustrated in Figure 2. In these terms the capacity gap represents the difference between the *total revenue available* for operation and maintenance and the *required expenditure* to ensure services are operated effectively by the local authority.

Available revenue includes the income from payment for services by the community, external subsidies to the local authority and cross-subsidisation within the local authority. In the long-term, the actual expenditure will generally be equivalent to this revenue, even though small cash-flow variations may occur. This represents the money that is actually spent on operating and maintaining the service, as well as paying off any capital loans where necessary.

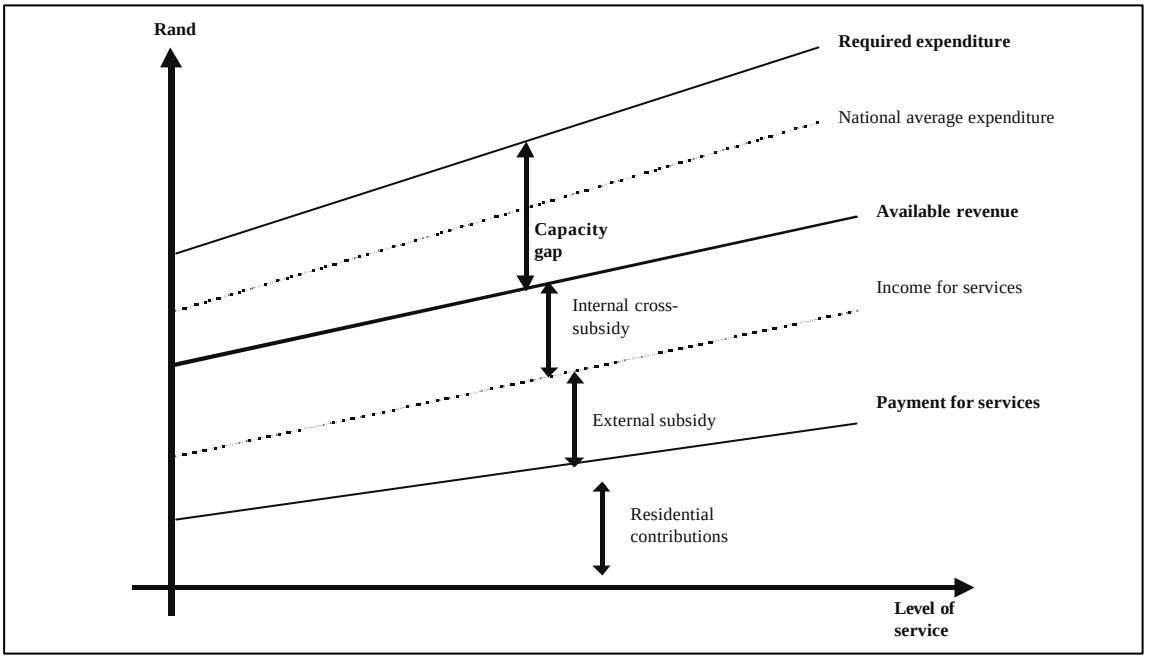


Figure 2: The Capacity Gap from a Financial Perspective

Required expenditure represents the cost of effectively operating the waste services (i.e. in such a way as to minimise the water quality impacts). This cost includes the basic technical and administration costs associated with operation and maintenance, as well as the cost of institutional development and social awareness to ensure efficient operation of the services. The depreciation of capital (associated with ageing of services) should be incorporated into the required expenditure, and where local authority loans had to be raised to develop services (i.e. capital grants were not available), their repayment (with interest) must also be included. Widespread financial and capacity constraints in local authorities imply that the national average expenditure on operation and maintenance is likely to be than the required expenditure.

Where a capacity gap exists, the local authority is under-spending on the operation and maintenance of services. This leads to deterioration and increasing failure of services and infrastructure, which in turn may result in water quality impacts. In general terms, the larger the capacity gap, the greater the risk of pollution in the settlement, and hence the greater the threat to the water resource. Poor water quality, and pollution in the settlement increase the negative social and economic consequences to the country and to the local authority, which in turn contributes to reduced spending on operation and maintenance. Some of these wider impacts of the capacity gap are outlined in the reports on the Costs of Pollution and in the report on the External Cost of pollution in two South African towns. These externalities associated with the capacity gap will tend to increase exponentially over time as the service deteriorates.

Although the financial interpretation of the capacity gap simplifies its description, the capacity gap should not merely be translated into a financial problem. In many cases, providing additional financial resources will not in itself solve the problem, as issues around the local authority's technical , organisational or networking capacity lie at the heart of the under spending on operation and maintenance. In these cases providing external funding may in fact exacerbate the problem.

2.3 What is causing the O&M capacity gap?

As outlined above, the capacity gap is defined as the difference between the capacity available to the local authority, and the capacity required to operate the services. The following paragraphs outline those factors with influence the capacity available to the local authority, and those that influence the capacity required to ensure effective operation and maintenance of the services.

Available capacity
This relates to the capacity provided (or supported) by the community itself, the local authority and/or external sources for operation and maintenance of the services. Although the following discussion is largely framed in terms of finance (revenue), the other elements of capacity should also be considered.

Firstly, community contributions may be through payment for services or in-kind contributions (such as labour and materials provided under delegated management arrangements). Levels of payment (or in-kind contributions) are related to both the *willingness* of the community to pay for services, as well as their *ability* to pay for (or contribute to) payment for services. Willingness to pay (contribute) is influenced by a number of social, political and economic factors, as well as the community's perceptions about the adequacy and reliability of the service. This may be changed by awareness creation and customer services initiatives, but is a very complex and politicised issue in the South African context. The report on Non-payment highlights some of these issues in more detail.

The ability to pay is related to the affordability of the service given household income and other household costs. Internationally, it is accepted that households pay between 3% and 5% of gross income on water supply, sanitation and solid waste services. This implies that there is little that can be done to recover costs where unaffordable services have been provided. While there may be some degree of cross-subsidisation between residential customers within a local authority area, the ability to cross subsidise is limited in local authorities with fewer wealthy customers. Delegated management of services (i.e. the community manages some of their own services) may overcome some of these problems, by reducing the need for formal (usually more expensive) local government involvement. However, while delegated management reduces direct costs, it usually requires greater mentoring and support to create a sustainable partnership.

Secondly, internal cross-subsidisation from other sources of local authority revenue, such as industrial and commercial users, or from rates and taxes, provide additional capacity. However, government has taken a decision in principle to supply services to industrial and commercial users as close to cost as possible – so as to stimulate growth. The contributions to the available capacity from these sources is also related to the bigger municipalities with a larger industrial contributors, and more wealthy customers.

Thirdly, external support may be made available to a local authority, either as operating subsidies, such as the Equitable Share to provide services to the indigent, or as direct intervention in operating and maintaining the services (usually only when the local government's capacity has collapsed). However, this may only be based on the assumption that basic levels of service will be provided and may not be adequate to cover operating costs for high levels of service. The use of capital grants (or loans) by the local authority influences the expenditure and is not addressed as part of the operating subsidy. It should be noted that although local authorities may raise considerable revenue and receive external subsidies, these can be used for functions other than water and waste services.

Required Capacity
The capacity required to ensure effective operation and maintenance of the services is related to four general issues.

Firstly, the characteristics of the settlement and sensitivity of the receiving water resources may impose more stringent requirements in terms of the levels of services or the operation of these services. For example more densely populated settlements, or settlements on steep slopes may require higher levels of services to protect the water resource. (See the report on Planning services to avoid pollution). However, environmental conditions or the sensitivity of the receiving water resources do not automatically imply higher levels of service, but rather that affordable levels of service should be effectively operated and maintained

Secondly, the choice of service dictates the capital and operating requirements, in terms of costs, skills, technology, etc. Higher levels of service generally imply increased operating and capital requirements, due to greater costs associated with the infrastructure itself, administration requirements and the need for customer services and awareness. The major cause of the capacity gap in South Africa appears to relate to the provision of inappropriate and/or unaffordable services, largely due to political pressures for the highest levels of services. (See the report on Planning services to avoid pollution).

Thirdly, historical management of a service may affect the current operation and maintenance requirements, particularly where this management has been poor and the maintenance has been neglected. This imposes greater maintenance and/or rehabilitation requirements to achieve an acceptable degree of operation, by repairing and/or preventing service failures. This issue underlies the tendency of the capacity gap to increase exponentially over time.

Finally, the operating efficiency of a service affects the capacity requirements. This has both institutional and social dimensions. Institutional inefficiencies due to technical, managerial, organisational problems increase the costs of operation and maintenance. Capacity building and improved operation at a local authority level may address this. Inappropriate use of services also increases the operating cost, through the need for increased maintenance of recurring (unnecessary) service failure. This may be addressed through user awareness and customer services initiatives, preferably by the local authority (or appointed service provider). These institutional and social issues also often relate directly to the levels of payment (contribution) for services, as they underlie the perceived adequacy and reliability of a service.

2.4 When does the capacity gap cause water quality problems?

The capacity gap exists whenever the available capacity of the local authority is not adequate to operate and maintain the existing services. This results in progressively greater failure of these services, with the consequent increased pollution within the settlement. However, while is usually has some impacts on community health, the severity of the water quality impacts depends upon the settlement density, types of service, the physical characteristics of the settlement and the sensitivity of the receiving water resources. These are discussed in more detail below.

The likelihood of a capacity gap causing water quality problems is largely related to the size and density of the town, as well as its location relative to sensitive water resources. In general, larger urban areas (cities and towns) are denser, and therefore have greater water quality impacts. Similarly, settlements located near to sensitive water resources (as defined by the water resource Class) would have greater water quality and environmental impacts. Settlements on steep slopes, or those where the groundwater is close to the surface may also have greater impacts on water quality. These other environmental conditions need to be addressed when considering the need for active intervention to close the capacity gap. These issues are addressed in more detail in the following chapter.

Chapter 3: Options for Closing the Capacity Gap

3.1 When should the gap be closed to protect the water resource?

From DWAF's (or the CMA's) perspective the capacity gap is only an issue when it is causing or is likely to cause a water quality problem, or where it impacts on the provision of water services. This Chapter discusses the issues of when DWAF should intervene to address the capacity gap and the types of intervention that are most appropriate.

The first question is whether DWAF should intervene (or support an intervention) to close the capacity gap, or whether this is entirely outside DWAF's mandate. It is recommended that DWAF only intervenes where there is a capacity gap due to historical capital investments in services that the local authority cannot afford to maintain, and this has a significant water quality effect on receiving water resources. As such, the "perverse incentive" to plan badly and hence get support from DWAF is removed. This type of intervention would not represent a general "bail-out" for local authorities, but only those that have existing problems, and which are not being exacerbated by current planning decisions.

Furthermore, this support should not be proposed as a subsidy for social development (such as the *Equitable Share*), because these support mechanisms already exist and it is more difficult to place constraints on the use of this type of subsidy by the local authority. Rather, any intervention should be proposed as an environmental support to mitigate the ecological, social or economic effects associated with a deteriorating water resource, possibly tied into existing mechanisms for logistical and efficiency reasons. In particular, DWAF (or the CMA) should not be involved in financial support, but rather guiding other financial interventions and providing support capacity.

In addition, as the capacity gap by itself does not always imply a water quality problem, a significant water quality impact (or threat) on the receiving water resources should be demonstrated. This requires an understanding of the local-regional socio-economic implications of not intervening. The relevant water quality managers need to make this assessment, based on a number of factors, including:

- The class of the water resource that the settlements are contaminating, particularly if these require a high level of protection;
- The exceedence of resource quality objectives (or management objectives) for the water resource, particularly for contaminants that are associated with settlements;
- Reported high levels of water borne health problems, particularly for people using the water directly for domestic or recreational purposes; and
- Regional economic consequences of water resource contamination, particularly irrigation of crops from pathogen contaminates supplies and bulk abstraction from eutrophic impoundments.

3.2 The polluter pays principle for low-income settlements

The polluter pays principle implies that the residents (through the local authority) should pay the costs associated with mitigating the water quality impacts and associated externalities from a settlement. However, there is a social and Constitutional requirement to provide basic services to the poor. As such, the operating costs of these basic services (and possibly the capital costs) may have to be paid from cross subsidies from the wealth sectors of society. This should preferably come from within the local authority. However, in local authorities with a higher proportion of poor households, external support may be required.. This basic service provides public health benefits, and in most cases should provide adequate environmental protection.

However, there may be situations that require an improved service for environmental protection, such as vulnerable water resources or sensitive users. This does not necessarily mean a different level of service, but rather improved operation and reliability of the service, which is far more important for water quality protection. In terms of the polluter pays principle, the community living in that environment should pay. However, poor people generally have little choice about where they live (unlike an industry or high-income household), and they generally cannot afford the higher operating costs. The issue of subsidised sanitation to the poor may have to be considered in these rare situations.

In the case of existing unaffordable services to low-income communities, the polluter pays issue becomes more problematic. Either the water quality impacts must be accepted or the situation must be reversed through external interventions. In these cases while there is an argument to provide the very poor with at least subsidies to help recover the costs of services, it is likely that all households will have to at least contribute to the costs of the services. However, in these cases it is particularly important to focus subsidies only on the very poor. This goes against the polluter pays principle in the short-term, but this type of external intervention is likely to be necessary where a significant numbers of poor households have higher levels of services. However, this type of intervention should not be applicable to new infrastructure, which implies the need to explore innovative ways of insuring that local authorities do not implement unaffordable services. The report on the Costs of pollution provides some indication of the national extent of this problem.

3.3 National norms & standards for municipal services

National Government has the responsibility to develop policy for implementation by local and provincial government. Constitutionally, there is a separation of powers between the three spheres of government and there is general acceptance of the independence of local authorities in terms of infrastructure provision. The report on the Legal issues around pollution from settlements provides more of a background to these issues. However, there may be scope in Section 146 of the Constitution for developing *national norms and standards, frameworks and/or policies*, which provide uniformity across the country as a whole for functional areas that fall under Schedule 4. In terms of the *National Strategy* and the four waste streams, municipal planning, water and sanitation services, and storm water management systems are incorporated in Schedule 4B of the Constitution.

The argument for national norms & standards and/or legislation, to indicate appropriate service levels under different socio-economic conditions, may be made according to Section 146(2)(c), in terms of promotion of "equal access to government services" and "protection of the environment". The case studies on the financial and economic costs of high levels of service indicate that financial and institutional collapse of local authorities is likely if unaffordable services are provided. (see the reports on the Financial component of the capacity gap, and the External costs of pollution in two towns) Furthermore, if these services are not appropriately operated and maintained (due to this financial and institutional collapse, the environmental (and public health) consequences are exacerbated, which incurs a potential economic burden (due to environmental health impacts) and a financial burden (due to bale-out of local government) on the country.

National norms and standards, not only for minimum levels of services, but also for "maximum levels of services" may therefore be required to ensure that local authorities do not fall into the debt and capacity gap trap. However, the risks of a local authority falling into this gap tend to be highly site specific and are related to the ratio of wealthy to poor households, the industrialization in the town, and the capacity of the local authority officials. In addition, appropriate maximum levels of services also depend on other settlement and environmental characteristics such as slopes, depth to the groundwater, and the extent of the non-payment problem. As such, national norms and standards will be difficult to formulate, and in many cases to justify, to local government.

3.4 How should the gap be closed?

The following options could be considered to close the gap in a particular local authority, depending upon local conditions:

- Replacement of service infrastructure (possibly through capital grants) to reduce the operating costs, in order to meet the ability and willingness to pay of a particular community.
- Social marketing, awareness creation and education programmes to increase acceptability and appropriate use of systems, thereby reducing operating costs and improving payment rates.
- Institutional capacity building to develop a customer services approach and improve the efficiency of service provision, thereby reducing capital and operating costs.
- Community (financial or in-kind) contributions to the management of a service.
- Operating subsidies to increase the financial capacity of the local authority and thereby directly close the capacity gap.

It is important to recognise that providing financial resources represents only one (not necessarily sufficient) option for closing the capacity gap. In practice, a combination of these approaches may be appropriate, to address the water quality problem in the short-term, as well as ensure that this is sustainable in the longer term. Other government departments, and particularly the Department of Provincial and Local Government (DPLG), have ongoing programmes to address institutional capacity, influence the selection of appropriate services, and provide grant funding for local authorities.

The key issue for this project is what should DWAF do, in the short to medium term, when a significant water quality problem arises from settlements, as a result of an existing capacity gap. The trite response is to raise awareness, increase payment levels and build local authority capacity. However, this is unlikely to meet with much success, particularly in bcal authorities with a high proportion of poor households on high levels of services. A more appropriate response may, therefore, be to propose conditional bridging finance (in cooperation with other relevant departments), to ensure that water resources are protected and the gap is closed within a specified time period.

This type of intervention must be conditional, in order to ensure that it is used to mitigate the water quality problems in the local authority. The following principles may apply:

- Any financial assistance should be for a limited term and once-off to a particular local authority.
- Interventions should focus on identified and prioritised low-income settlements within the local authority area that are contributing to the water quality problem.
- Any finance should be ring-fenced to be used for interventions the priority low-income settlements, to prevent use for other purposes.
- Financial intervention should be linked to fiscal responsibility, institutional capacity development and social marketing through a customer services approach.
- The role of the target communities must be emphasised, particularly in exploring delegation of management arrangements and appropriate use of services.
- No further implementation of unaffordable services should be allowed, particularly through the development and adherence to the various components of the Integrated Development Plan (IDP).
- Interventions should be linked to performance criteria for both the service provision and the water quality of the impacted water resources.

Alternative options could be to explore the options of subsidising waste management services to poor households. National government has already committed itself to this form of assistance and is in the process of developing policies for the provision of “Free Basic Water” to the poor.

3.5 What mechanisms should be considered?

The preceding discussion has indicated that in certain situations where unaffordable services in a local authority area are causing significant water quality problems, interim conditional financial support, together with institutional development and social marketing, may be necessary for water quality management purposes. As outlined, this should be in the form of an "environmental subsidy" rather than a "social subsidy", in order to earmark it particularly for situations causing deteriorating water quality. There are two main mechanisms for funding this type of intervention, namely parliamentary appropriations or local water user charges, as discussed below.

Parliamentary appropriations
The first alternative is for DWAF to identify local authorities requiring intervention (as described above). DWAF may then issue a directive under Section 19 of the National Water Act, which also gives DWAF the power to perform the required actions (and possibly recover the costs). However, it is not appropriate for DWAF to operate and maintain local authority services and this should be avoided. Neither is DWAF likely to obtain adequate resources to provide a national support programme, this approach is therefore limited to settlements with server regional water quality problems.

However, provincial government can step in where services are not being adequately operated and maintained. This implies that any financial intervention should be channelled through DPLG, using the existing relationships with provincial government and local authorities, albeit at the request of and/or in consultation with DWAF. This would allow synergies between the financial intervention and existing institutional development initiatives to be exploited. The mechanisms for cooperation between DWAF and DPLG would need to be developed, possibly including the development of guidelines for DPLG. This approach may be aligned with DPLG's recently proposed local authority intervention programme, and is recommended for logistical and alignment reasons. These interventions may be more appropriate for situations community health issues, rather that water quality concerns, drive the need for intervention.

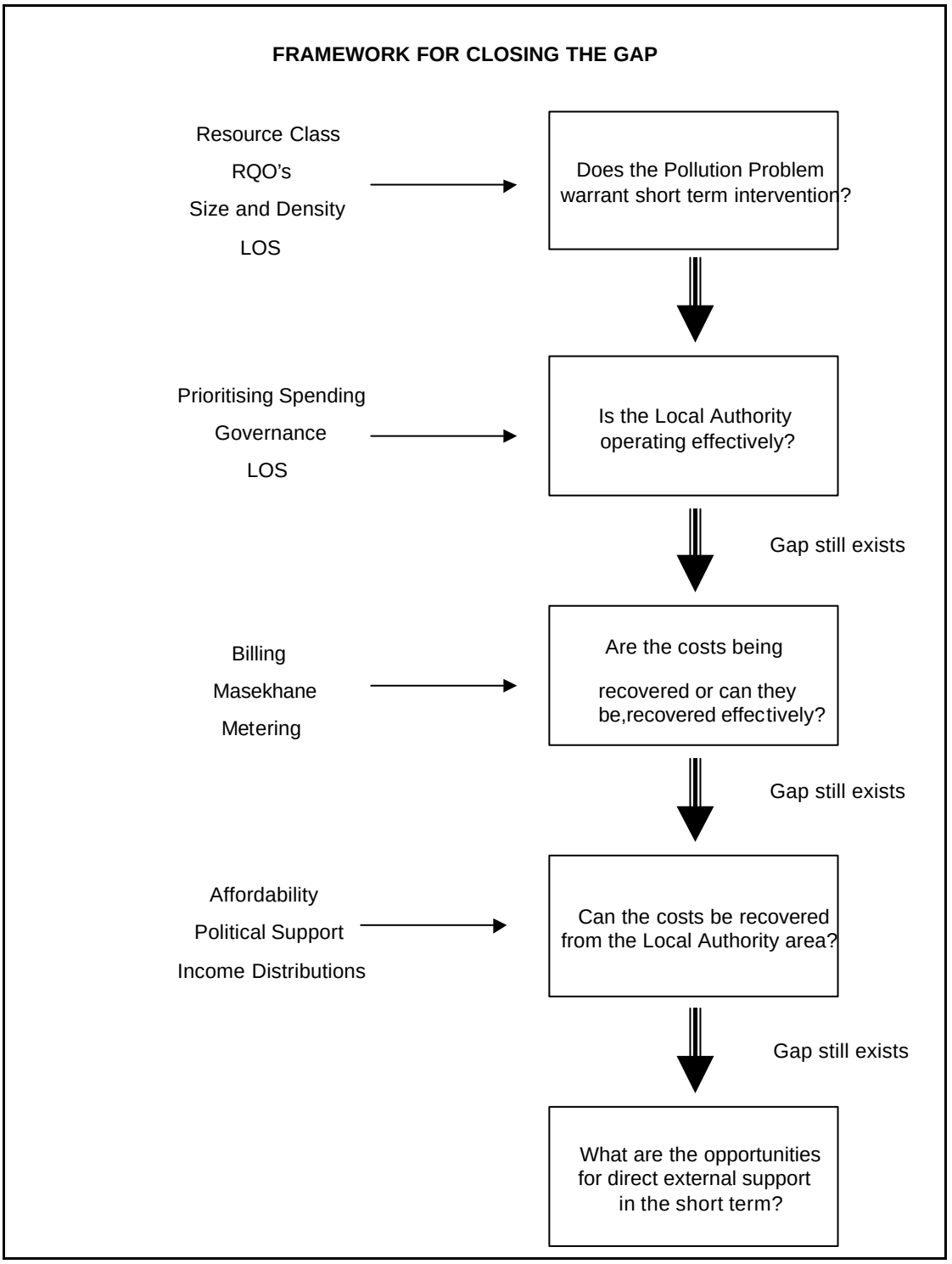
Water user charges
With the establishment of the *Pricing strategy for raw water use* under the National Water Act, the opportunity exists for Catchment Management Agencies (CMA or DWAF) to collect user charges to cover the costs of water resources management. These charges may be on users storing and abstracting water, or alternatively on the discharge of effluent containing waste. Water use charges may therefore provide an opportunity for the CMA or DWAF to intervene financially to help close bridge the capacity gap in cases where it is causing serve water quality problems. Once again, it is not appropriate for CMAs to operate and maintain municipal services, but they could provide financial support to close the gap where the local authority has some capacity, possibly supported institutionally by DPLG or provincial government.

There is an issue around the setting of water use charges to cover the costs of water resource management (particularly for the benefit of that user). Water use charges are not explicitly designed as a cross-subsidy mechanism, and in fact may not constitute a tax, duty or levy, so there may be significant resistance from water users. However, it may be argued that water quality problems from a settlement have an impact on downstream users, and they benefit from the intervention. This is particularly relevant when the previous discussion around the polluter pays principle for low-income communities is considered. Furthermore, awareness creation and institutional coordination and development are explicitly the function of CMAs, so water use charges may be used to ensure that a limited term intervention may result in sustainable operation and maintenance of services. In practice, catchment charges are likely to be available for this institutional and community support, but not for capital-intensive physical interventions in infrastructure development or operation.

Chapter 4: Recommendations

4.1 A framework for closing the gap

The preceding Chapters have described the capacity gap and have proposed various options and considerations for intervention to close the gap in settlements where it is contributing to water quality problems. The following preliminary framework may be derived from on these discussions.



This framework provides a logical process of addressing the possible causes of the capacity gap from the perspective of water quality management, based on the following considerations.

- It begins by identifying the significance of the water quality impact associated with the capacity gap, linked to the size and density of the settlement, the level and functioning of services and the sensitivity of the receiving water resources.

- Where a water quality problem exists due to the capacity gap, the first issue is to address whether the local authority is allocating its resources (and capacity) appropriately to ensure effective operation and maintenance of these services.

- Where the available resources and capacity cannot close the gap, the effectiveness of the institutional capacity to collect revenue and to provide adequate services must be improved.

- Where the capacity gap cannot be closed through effective and efficient local authority institutional functioning, the inadequate community contributions and/or misuse of services must be addressed.

- Only where institutional and social interventions (and capacity building) is not adequate to close the gap, should direct external financial support be considered to close the capacity gap and thereby the causes of pollution.

This framework indicates direct financial support to the local authority only once all other avenues have been explored. However, resources (human and financial) may be required to address the local government and community capacity limitations that may affect the prior steps.

Lastly, the issue of sustainability of any intervention must be considered, from the financial, institutional and social perspectives. This implies that a plan must be in place to ensure that the capacity gap is controlled, even after the interventions are completed.