

Financing Strategies for Water Sectors in Africa

Overview Note

DRAFT (not for wider circulation)

Acknowledgments

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Introduction

This paper briefly analyzes the context in which financing strategies contribute to water sectors in Africa. Such analysis is, of course, also relevant outside Africa and in other sectors besides water. For instance, analysis of the transport sector is showing how the life cycle costs of new infrastructure are balanced by the availability of funds for the infrastructure. Elsewhere, in Eastern Europe and Central Asia, the OECD (see for example OECD (2006)) has introduced FEASIBLE, a modelling tool that is among the best tools for developing such financing strategies. Developed countries too have been developing financing strategies for their water infrastructure. Old infrastructure and the need to do major rehabilitations has driven such an effort in Ontario (Swain et al., 2005). The focus of these analyses has been on degradation of existing infrastructure and expenditure linked to rehabilitation of the same infrastructure.

Most efforts focus on estimating the cost of sector programs, linked to their objectives or targets. Cost estimates are compared to available resources, and where financing gaps arise, the policy options to reduce the gaps are analysed. To fill the financing gap, policy responses either seek to reduce costs, or increase finances. For instance, reducing the technology level of water service provision might bring down the cost of meeting sector targets to within the available resource envelope.

In Africa, water financing strategies differ in some way from those in other regions. The water sector in Africa is generally characterized by the absence of water supply infrastructure. This contrasts other regions where there may be assets, but assets that are functioning poorly. The focus in Africa is on asset creation. But this generalization does not apply everywhere. In urban areas, the goal of infrastructure investment in the water sector often focuses on expansion (and in many cases rehabilitation).

The capacities of financial systems and institutional mechanisms, as well as the general trend of sector reform, further differentiate Africa. In most African countries, the water sector is in the process of reforming, in many cases moving towards decentralized institutional structures. Decentralized agents are increasingly responsible for implementation (a role previously played by central agents), with regulation and policy development functions remaining with central agencies. At the central level, sector functions such as financing the sector, regulation and policy formulation in many African countries are increasingly the mandate of separate agencies.

Linked to institutional re-organization and wider reform processes are uncertainties around financing mechanisms. Historically, the water sector in many African countries has been funded by donors, with their own project implementation modalities. These implementation

modalities do not work well with decentralized institutional arrangements, and so increasingly, consolidated funding mechanisms are being developed: Uganda, for instance, uses a conditional district grant to fund capital works in the sector.

Given the uncertainties around existing financing mechanisms, there is need to analyze a range of financing options (and their resulting budget implications). These options will inform the design of new financing mechanisms as the sector develops.

In summary, financing strategies for the water sector in Africa must consider uncertainties around institutional and financial mechanisms used to develop and manage the sector. The focus is on service expansion, as well as maintenance and rehabilitation.

Components of a Financing Strategy

Estimating Sector Costs

Sector costs have different dimensions and need to be estimated at different levels. Critically, the institutional arrangements in the sector will affect the assignment of costs to different agents. In developing estimates of meeting sector targets, an understanding of institutional realities must therefore underpin the exercise.

New capital costs - Full investment plan type analyses give detailed sector capital cost estimates. Revising these however is difficult, given the cost of their development. Most financing strategies therefore use some sort of aggregate approach, relying fundamentally on the unit cost of service changes. These are somewhat tricky to develop well. Unit costs represent the incremental cost of bringing service to an individual or household. Ideally, the concept of marginal cost would be used, but it is often assumed that given that a stream of investments can be identified, an average cost per capita for the total program can be used instead. Different technology options will have different life cycles and so such average costs do not capture the need to mobilize different levels of effort to implement new capital investment. They do, however, provide a simple entry into the consideration of total capital costs linked to sector targets

Rehabilitation costs - Given the finite life of water supply assets, the cost of capital replacement needs also to be considered. There are two possible approaches for this. Firstly a simple straight line depreciation method can be used. This will allocate a fixed portion of the replacement value of the asset to each year in the analysis. It is a simple method used often in accounting practice and so generally is familiar. Alternatively, where full asset management plans exist, capital replacement plans will indicate actual costs associated with replacing capital. Water systems in particular, given the assembly of assets with different life

expectancies will benefit from such an approach. In such a case, spending on strategic rehabilitation will be seen as extending the design life of the asset, and so affecting the costs associated with capital replacement. By replacing key components overall system life can be extended. Such life cycle approaches do not generally get used in asset management and planning in Africa and so for the purposes here, a simple depreciation method is suggested. More complex methods however would have significant benefits to the overall approach to asset management in the sector and this is one direction that infrastructure planning in Africa should explore.

Operations and Maintenance costs - A third cost type, linked to service provision, is the cost of directly operating and maintaining the systems. These costs can normally be developed from the volumes of water produced or the capacity of the system. Whilst, as suggested above, spending on maintenance will have effects on asset life, the exact feedback relationship is not generally well understood. For simplicity therefore, financing strategies initially should focus on costs linked to adequately maintaining and operating the system only. Estimating these costs must also be done carefully (for a comprehensive example see PEM Consult (2006) – funded by WSP-Af). The current level of spending on O&M functions may not reflect requirement levels as operators may be under spending on maintenance (essentially swapping maintenance spending now for capital expenditure requirements later) and eroding the asset base. It is therefore recommended that when developing estimates of O&M requirements, first principles be used to assess a typical and sufficient operational plan which would imply a particular expenditure stream. Where the modality of operations will affect total cost, this can be considered a different type of system. For instance, community managed systems will often provide the management function on a volunteer basis (through the management committee) and in such cases less expenditure on O&M would be required.

Sector management and development costs - The final cost type that needs consideration in the context of the financing strategy is the most difficult to estimate simply. The cost of managing and developing the sector needs to be explicitly accounted for. At a project level, often estimates consider the cost of project development or supervision, but rarely do national cost estimates consider the appropriate level of finance for management of a well-functioning sector program. The first task in estimating sector management costs is to detail the key sector management functions. These will likely include a policy development function, regulatory and rule setting functions and monitoring and evaluation type functions. Capacity building can also be included; however, care should be taken to ensure that this cost is not double counted, both at a national level and at the project level. In the case where a detailed national program does not already exist, unit cost type approaches might be most appropriate. A costing exercise (for the sanitation sub sector) in Uganda for instance (Buhl-Nielson et al. (2006) – funded by WSP-Af) indicated that a very detailed assessment of costs gave similar estimates to the costs developed more roughly as part of their Sector

Investment Model (PEM, 2004) development. Care should be taken to assess costs on the basis of the institutional model which defines the sector. For instance, the cost of monitoring might be wholly different where the primary responsibility for data collection lies at a decentralized district level as compared to a centralized regulatory agent.

The Availability of Finance

Generally, there are three sorts of finance which are available to the water sector in Africa; government resources delivered through normal budgetary mechanisms; special projects funded by donors; and revenues linked directly to the provision of service. Assessing the mechanisms and levels of such finance is normally confounded by poor information.

Fungible budget finances - Depending upon the structure of the country's budget system there may be considerable funding which comes to the sector via intergovernmental allocations. These funds may originate from government taxation but may also be donor funds which have been pooled at the national level or the sector level. Uganda is an example where considerable sector finance flows through such fiscal mechanisms. Where such transfers exist, government accounting systems may not clearly capture all the funds going specifically to the water sector. Current work in Kenya (Williamson, 2006) is trying to address such mismatches between the functional usage of funds and the economic classification used in the budget. Many African countries are characterized by such issues. For instance, the Ministry of Water may allocate a percentage of the total recurrent budget in Kenya to fuel and chemicals. This representation does not assist the assignment of budget to different activities in the sector. In other contexts, like Ethiopia, block transfers are theoretically to fund water alongside other sectors' expenditure. In the absence of a good public expenditure tracking system, the actual use of such funds is difficult to assess from existing records and specialized public expenditure tracking surveys are often required. Resource flows studies, such as those in (e.g. WSP-Af (2004), Mehta and Ondari (2004)), provide rough analyses of public finance going to the sector based on assessments of the budget as presented and other related documents.

Donor and government project finances - In most African water sectors due to both poor fiduciary controls and the lumpiness of investment requirements in the sector, donor project structures still figure largely. Such projects may have completely different implementation modalities, as compared to national systems and these most likely will not be consistent across the different projects. Further, such funding tends to be quite erratic and focussed on specific geographic areas in a country. In fact this is a major reason driving the advocacy for sector wide approaches (SWAs). Assessment of donor funds may be possible by examination of the budget directly (given the need to have the Ministry of Finance involved in the agreement) but the details of what the money is doing and where it is going may be more difficult to capture. Surveys of donor activities may result in a considerable amount of

information however, and normally the coordination mechanism in the country will provide a good peer review mechanism for this data. Off-budget donors, like non-governmental organizations are more difficult to find data on. Total spending if reported at all to a national umbrella organization will be aggregated across sectors and may not show geographic distribution. In the case of Uganda, there is a national body which coordinates NGO activities in the sector, and perhaps uniquely, provides information on the finances of those NGOs acting in the country's water sector.

Service delivery linked finances - The final source of funds is linked to services delivered to the population. It consists of tariffs collected for water used as well as special charges such as penalties or for connection. Assessment of these revenues again is linked to the availability of performance information in the sector. Where larger utilities may have reasonable management information systems that donors and major sector agencies would have access to, decentralized providers will often have poor records and nowhere to report them to. For example, a hand pump serving a village might collect some contribution on a monthly basis from area residents, however, the level of collections, their frequency and 'non-payment' are very difficult to capture. In such cases, perhaps it is possible to assess the level of 'cost-recovery' based the functionality of assets, though this is only a rough method as sustainability will be linked to factors outside of cost recovery as well. Care must be taken to avoid simply equating revenues to O&M costs based on policy requirements. This is a key comparison to make in the analysis of financial balances.

Assessing the Financial Balance

The assessment of sector financial balances is the key aspect of the financing strategy. Assessment of sector costs can be developed through the development of a sector program. The accounting for funds in the sector can be attained through number of different mechanisms; public expenditure reviews, tariff studies, resource flows studies, public expenditure tracking surveys, etc. The financial balance in the sector is the first indication of viability and plausibility of sector targets and it is worth highlighting the need to examine these balances very closely.

Ultimately, of interest to a number of stakeholders is the question 'is there enough money in the sector to meet the MDGs or other sector targets?' This question is somewhat easy to answer. The follow up question, whether the funds are being used in such a manner so as to achieve the goals, will in fact be the telling one. The entry point in a financial strategy then is the coarse question at a national level, whether there is sufficient funding to meet goals. For the texture of the strategy to be developed, this balance must be decomposed.

A matrix of financial balances must be examined along the dimensions of aggregation and type of cost. Figure 1 provides a representation of this matrix.

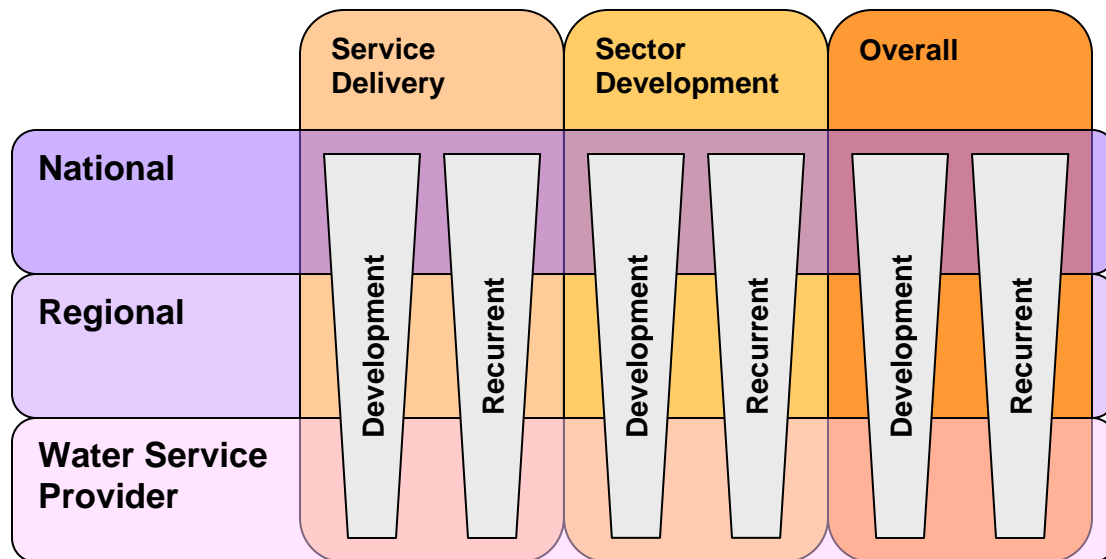


Figure 1: Matrix of depicting different dimensions of financing gaps to be examined

The dimension of aggregation ultimately starts at the individual provider level and ends with a national aggregate analysis of financial balance. Whereas one provider might not have enough finance to meet its goals, aggregating all the providers to the national level might actually balance deficits and surpluses to indicate that the sector is viable. As such, it is interesting to look at sub-national levels of detail to provide a frame for examining public finance mechanisms available to address systematic disadvantages. The level of disaggregation will be determined by the level of detail in available information. Given that this is a major constraint in nearly all African countries; it is not plausible to develop a national strategy by adding up all the provider level strategies.

Analysing financial balances at a regional level however is more possible. Key operational and institutional variances can be captured. In Ethiopia this would mean using the Regions as a basis for aggregation, in Mozambique the Provinces and in Kenya the Water Service Board jurisdictions. Further detail within such regional constructs is still necessary. Given consistent operational characteristics within water service provider types, this can be a second level of disaggregation from the national level. Fundamentally the water service provider type will vary in urban and rural areas and this combined with the policy interest in equity between the two types of regions make the urban/rural dichotomy worth preserving in the financing strategy. Presenting financing balances along such lines allows for an examination of inequity within regions and water provider types (which often service specific types of populations).

The second dimension of the financing balance investigation is along the line of types of expenditure. As much of the available finance is public, and given that this tends to split into a recurrent stream and a capital development stream this distinction is worth preserving

when examining financial balances. The question asked becomes not just is there sufficient finance for the sector, but rather is there sufficient capital financing to develop the assets needed to meet sector targets. Further, expenditure requirements can be divided into those required to increase or preserve existing service delivery or that spending needed to manage the sector. Sufficiency then can also be along this sub-dimension. For instance, there may be plenty of public allocation for national regulation but very little financing available (due perhaps to poor tariff collection) for operating the existing systems. At an aggregate level, 'recurrent' expenditures may balance, but obviously the actual character of the financial balances will lead to unsustainable sectors.

Practical Considerations

Development of financing strategies in Africa, and financing strategies more generally, requires that the process be led by the government agency responsible for overall progress in the sector and achievement of the relevant sector targets. Given the significant data and analytic requirements there are large risks that such analysis gets developed without clear linkages to the overall country planning and sector management functions.

In many African contexts data required for such analysis will be a considerable constraint. Such data constraints however should not prevent the development of an interim or preliminary financing strategy. Given best estimates available a rough analysis can be developed. This rough analysis can be contextualized using a sensitivity analysis around different data types. For instance, in a particular context, there may be insufficient data to arrive at a well defined unit cost of serving an additional rural household. A best judgement estimate may be used, and then variations around that tested, to estimate the overall effect of bad information on the quality of the financial strategy.

Such analysis can be combined with overall sector information and monitoring systems (SIMS) diagnostics to inform reforms in national level SIMS. In reforming sector information systems, often a wishlist of information is developed. WSP-AP's Sector Wide Investment and Financing Tool (SWIFT), and other similar models, provide a structured framework into which data must fit in addition to providing a direct purpose for data collection. Data requirements for SWIFT provide insight as to wider SIMS data requirements (at least with regard to sector financial planning).

The development of a national financing strategy, due to some of the issues presented above requires an iterative and consultative process. The first iteration is likely only to raise awareness with results that arise from it being treated with at least some scepticism. Continued engagement in the development of such products however will increase the quality of analysis and ultimately support better planning in the country. Uganda and its Joint

Sector Review process is probably the best example of this evolutionary movement toward quality in sector planning information and in sector planning.

Emerging experience does however suggest a rough methodology for engagement. This is presented in figure 2. Box 1 presents experiences from developing a financing strategy in Mozambique.

Box 1: Developing a Financing Strategy in Mozambique

The Water and Sanitation Program – Africa has been supporting the National Directorate for Water (DNA) in Mozambique to develop a rural water supply financing strategy. The rural water sector in Mozambique has been historically funded by fragmented donor driven projects, with varying project rules, institutional frameworks and financing modalities. In attempting to achieve the MDGs, the country has developed an MDG roadmap for the rural water sector and is currently trying to move towards a sector wide approach (SWAp). The Roadmap is a comprehensive document which contains complete estimates of the costs linked to improving water services. The rural water supply financing strategy is being developed to assist a better understanding of the financing modalities determining the viability of the Roadmap.

A consultant has been engaged to develop a baseline financial analysis of sector. This analysis is being reviewed by the internal government agents responsible for planning and rural water at DNA. The document will then form the basis of discussions around movements towards a SWAp in the country, Demand has been expressed from a number of donors to expand the analysis to include urban infrastructure

In moving to finalize the analysis, and strategy contained within, the GoM is arranging for review of the analysis. This will be through a government/donor roundtable on the analysis. As the process is linked to the development of a SWAp in the country, the financing strategy in Mozambique is likely to impact the financial reform of the water sector into the future.

Review of data availability – A series of reports and focussed studies will be the foundation of a first analysis of current sufficiency of sector finance. A review of this body of information will help to understand the sector structure and also to underpin a quantitative discussion around data and linked financial balances in the sector. Often this information base will be insufficient to perform even a rough analysis of financial balances. The review will point to different data which can be collected either on a one time basis or as part of wider data collection efforts.

Rapid data collection – Based on the review of available data, easy-to-collect data should be collected as part of a focussed study. This should not be at a level of detail that would make

reforms in wider sector information systems appear irrelevant, rather focus should be on filling immediate data gaps as best possible.

Baseline financial analysis – The data that is available is used to assess sector financial viability. The level of accuracy is not sufficient to project for budget purposes but the graphic presentation of indicative financing gaps in various parts of the water sector can catalyze a more involved debate. The baseline analysis plays an important role in re-assessing institutional and financial modalities and in fact sector targets. Often, and mentioned earlier, these are set without rigorous assessment of their viability or workability. The baseline assessment also acts to focus discussions in the sector around policies that can be utilized to close any financing gaps

Policy options analysis – Based on consultations around the baseline analysis different policy options suggested should be analysed in detail. The focus of this analysis is to provide well specified options to a decision making forum. The policy options must also consider reforms to the institutional structure of the sector (e.g. movements towards SWAps), changes to financing mechanisms (e.g. pooled challenge funds, fiscal transfer mechanisms, etc) and revisions to overall operating modalities (e.g. tariff changes, aggregation of small providers to attain economies of scale, etc).

Adoption of the financing strategy – Based on a consultative review of the policy options the sector should adopt a strategy for moving itself forward. The strategy is the particular policy option deemed to be most likely to assist the sector to meet its goals. Much like more general sector strategies require endorsement at the highest level and then tend to inform subsequent legislation, the financing strategy should enter debate at a similar level. Critically, the financing strategy is an output of a process rather than an analysis. The revision of the strategy must be linked to regular information collection exercises, ideally as a part of a larger SIMS.

Linking the strategy to operational documents – the strategy needs then periodic revision and must be linked to key sector operational documents. Most notably this will include linkages to the annual budget process and medium term expenditure framework. The analysis provides indicative expenditure ceilings by type of expenditure and level of institutions and geographic location. This can be used to guide budget allocations, ensuring that the annual spending in the sector is in line with the sector's agreed to long term strategic vision with respect to financing.

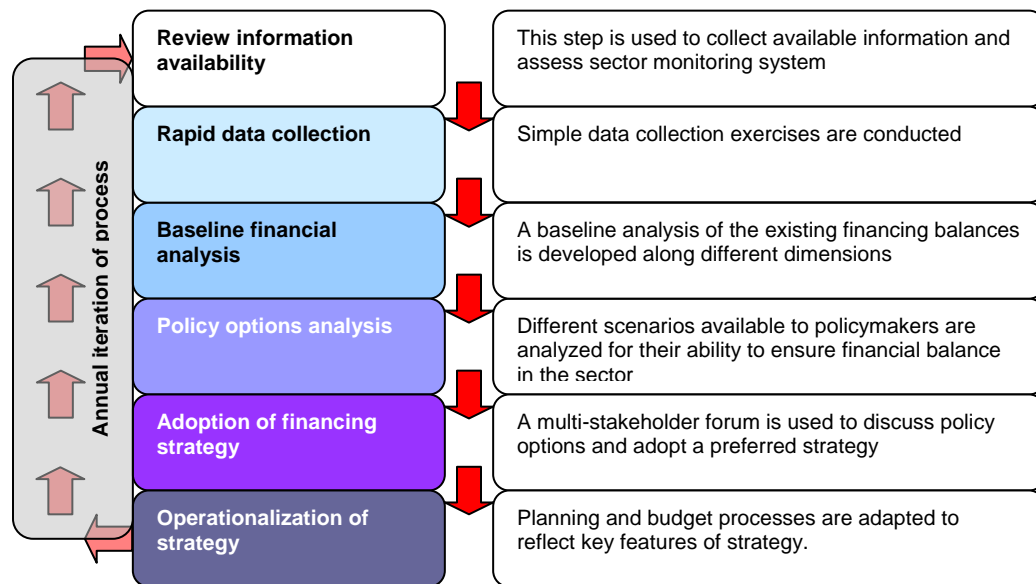


Figure 2: Steps in developing a financing strategy

Conclusions

This short note introduces the concept of financing strategies for the water sectors in Africa. Financing strategies are increasingly relevant in water sector planning given long term targets linked to the Millennium Development Goals and other country level targets. They assist in developing indicative costs of meeting sector targets and comparing those costs to the likely finance availability. The analysis of resultant financing balances and strategic options available to reduce either overly large surpluses or deficits then is the foundation to the financing strategy.

Critically in the context of Africa, financing strategies must consider shifting institutional and financial structures in the water sector. Also, given poor information, attempts to develop financing strategies should also feed into wider efforts to develop sector monitoring systems. Particularly the development of financing strategies requires that the financial monitoring indicators be collected. Often this sort of analysis will be unfamiliar in the particular sector context, which may be engaged in more fundamental issues around tracking of results and presentation of the budget than in strategic planning. Water sector financing strategies in Africa, therefore, require a considerable amount of iterative discussion and consultations with sector stakeholders.

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