WATER SECTOR TRUST FUND

ISO 9001:2008 CERTIFIED

Service Delivery Model Toolkit for Sustainable Water Supply

SNV

KENYA MARKETS TRUST
Better Markets, Better Lives

ACKNOWLEDGEMENTS

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FOREWARD

Over the years, State and Non-State actors have invested heavily in water infrastructure in order to improve access to water services to communities living in rural areas of Kenya. The rural water sector has faced sustainability challenges due to the "non-commercial" nature of community schemes, with water being perceived as a social good rather than an economic good. The management of most community schemes has been short of being professional, with private sector engagement within the sector being low.

The service delivery toolkit brings together various public private community partnerships experiences aimed at improving the management of community water schemes. The toolkit presents 5 models namely: private operator model; lease operator model; professional management model; delegated management model; operation and maintenance service contract. These models allows water sector players to reflect on their applicability and encourage their adoption in contextualised situations, through an elaborate stakeholder engagement process and business case assessments.

The Water Sector Trust Fund (WSTF)'s mandate to finance improved access to water and sanitation services to underserved areas in Rural Kenya can only be sustainability realised when the management and governance of community schemes is streamlined to attract professional management, promote county government oversight, well designed and structured investments, attract private sector involvement and improve overall service delivery.

This toolkit provides an opportunity for the water sector to reflect on the Service Delivery Models that can transform the rural water sector, leverage on potential for private sector financing and progressively realise sustainable access to water for rural communities.

Ismail Fahmy M. Shaiye
Chief Executive Officer

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ABBREVIATIONS AND ACRONYMS

CG	County Government
CWP	Community Water Project
EIA	Environmental Impact Assessment
EoI	Expression of Interest
GOK	Government of Kenya
KMT	Kenya Markets Trust
KPI	Key Performance Indicators
Ksh	Kenya Shilling
MAP	Market Assistance Programme
M4P	Markets System Development Approach
M&E	Monitoring and Evaluation
MWI	Ministry of Water and Irrigation
NEMA	National Environmental Management Authority
O&M	Operation and Maintenance
PO	Private Operator
PPP	Public Private Partnership
PPcP	Public Private Community Partnership
PS	Private Sector
PSP	Private Sector Participation
SDM	Service Delivery Models
SNV	Netherlands Development Organisation
WASH	Water, Sanitation and Hygiene
WASREB	Water Services Regulatory Board
WRMA	Water Resources Management Authority
WSB	Water Service Board
WSP	Water Service Provider
WSTF	Water Sector Trust Fund
WUA	Water Users Association

1.0 Background

1.1 Rural Water Challenge in Kenya

Countries are making efforts to meet the Sustainable Development Goal (SDG) 6 which aims to ensure sustainable access to safe drinking water for all by 2030. According to the Water Services Regulatory Board (WASREB), water coverage in Kenya's rural areas is at 53%[1]. However, less than 16% of this population have access to piped water sources. Therefore, the rural water sector faces twin challenges: increasing coverage and accessibility to safe water supplies as well as improving functionality of these services.

Vision 2030 highlights the importance of water to Kenya's economy and strives to invest in improving water access and quality for all citizens. In 2012, Ksh.10.6 billion of potential revenue was lost due to technical and commercial inefficiencies by Water Service Providers (WSP). In the rural sub-sector, the management committee model has been the principal water service delivery model.

Almost $^1/_3$ of rural water systems are dysfunctional while the other $^2/_3$ start malfunctioning within 3-5 years of construction[2]. This is attributed to the voluntary management committees' inadequate capacity in managerial, technical and business orientation. Consequently, the poor walk long distances to access water from un-improved and un-safe water sources and risk suffering from water borne diseases. Those receiving water have to rely on poor service levels resulting in being underserved or unserved. Service improvements are often skewed to urban areas where population density and infrastructure allows service providers to get a greater return on investments. However, the national level of Non-Revenue Water (NRW) still remains high at 43%[3]. This means that operational efficiency still remains key in addressing sustainability.

1.2 Private Sector Participation

Commercialisation of water services is captured in the Government of Kenya (GOK) Policy Paper Sessional Paper No. 1 1999 on water resource management and development. The approach involves improving efficiency, service delivery and financial sustainability, through addressing aspects of governance, marketing, technical competence and financial management.

Water authorities in developing countries face the daunting challenge of meeting water service delivery obligations to remote rural, peri-urban and small town communities. Thus, even in countries with a decentralized water sector, there has been an increasing trend in the last few years for local communities to enter into arrangements with private operators for provision of small-scale water supply services. Today it is well recognized that these private operators may be better placed to provide water delivery services to remote communities because they are located closer

[1] Performance review of Kenya's Water Services Sector, Issue No.9, WASREB (2016)
[2] Water Point Mapping report, Kenya, SNV Kenya (2010)
[3] Impact Report Issue 9, WASREB (2014-15)

and are potentially more accountable to the users. Private local operators may also have the possibility to attract additional sources of finance, such as commercial finance.

Appropriate use of the Private Sector (PS) is seen as one way to introduce professional competence into the process of commercialising community managed water supplies. There is now substantial evidence to indicate that community management of water schemes, anchored in the notion that community ownership motivates better management, has failed to deliver the required services. While there are many reasons for this failure, the net result is that new approaches which aim to blend community ownership, demand for better services, PS involvement (both for financial and technical capacity), appropriate regulations, financing and state support, are now being explored. Market System Development is an approach that recognises that the poor people are part of a market system and can benefit when the market systems are aligned to their contexts and capabilities. The water sector is hence analysed as a market system, where the effectiveness of the core business of water supply and water demand is shaped by the rules (formal and informal) and associated supporting functions (governance, finance, infrastructure, information systems etc.). Netherlands Development Organisation (SNV) and Kenya Markets Trust (KMT) adopted the markets systems approach to improve the efficiency and effectiveness of the water services delivery in rural areas and small towns in Kenya. These approach referred to also as Making Markets-Work-for-the-Poor (M4P) introduced local PS players to provide management expertise, skill, technology and finance to address efficiency challenges using various water service delivery models.

The Service Delivery Models (SDMs) applied in the water sector context are simply institutional options to improve the operations of water supply projects. This toolkit illustrates 5 SDMs successfully piloted in the Western region of Kenya that used the PS to professionalise the management in community-managed piped water schemes. It is important to state that the models elaborated in this toolkit below do not provide a "one-solution-fits-all" to challenges faced in rural water nor does one model take precedence over another. The adoption of the models is largely dependent on the will and skill of the stakeholders.

1.3 Context of the Toolkit

This toolkit provides a useful guide to County Governments (CGs), WSP and Water Users Association (WUAs) and Self-Help Group (SHGs) that wish to embrace socially responsible commercialisation of water utilities within their jurisdictions. The toolkit provides sustainable solutions to small and medium sized water schemes with sufficient density to warrant a network solution, but not enough scale for integration into a centralized network management. In addition, the toolkit offers evidence based illustrations on where the SDMs have been piloted and the outcomes of the pilot projects.

The toolkit also acts as a guide to interested PS investors on the various characteristics to have in mind when identifying a water scheme to invest in and which model would work for each water project

1.4 Structure of the Toolkit

The SDM toolkit comprises of the following sections:

- Introduction to Service Delivery Models
- Overview of the SDMs
- Stakeholder Engagement
- Viability Assessments
- Procurement of Private Operator
- Monitoring and Evaluation

2.0 Introduction to Service Delivery Models

2.1 Overview

The 2010 Constitution of Kenya states that "*every person has the right to reasonable standards of sanitation…and…to clean and safe water in adequate quantities*," However, only 25 percent of the population is served by public water utilities. The remaining 75 percent get their drinking water from wells, rivers, streams, ponds, and sand dams mostly managed by voluntary WUAs. These often lack commercial approaches and effective management practices. In 2012, Netherlands Development Organisation-SNV and KMT under funding from the Market Assistance Programme (MAP) partnered to address the mal-functionality and inefficiency challenges in the drinking water market in Kenya. Through experiential research and water sector experience, the MAP programme designed an innovative participatory approach using the M4P framework as a transformative tool to address these challenges in rural and peri-urban Kenya.

During implementation, the MAP programme addressed the water market constraints by building knowledge and confidence to the Kenyan market actors in the role of private sector and creating an enabling environment for business opportunities. The 3 interventions are further detailed below:

1) ***Building knowledge, understanding and confidence of key market actors****:* At the basic level there was need to sensitize the community through public education campaigns on the value of quality water. Government institutions - National Government and County Government were built capacity on the roles to be taken by PS to improve service delivery. To some extent, community concerns about PS involvement in water supply was also addressed through community education programs. CGs were also taught on potential benefits to be accrued from PS partnerships.

2) ***Creating an Enabling Environment for PS participation*****:** Policy and advocacy support on engagement of the PS as managers both at National and County Government level was also conducted. Key policies and regulations to support PS engagement have since been established i.e. PPP Act (2013) and recently the Water Act (2016). These provide clear guidelines when engaging the PS.

3) ***Business strategy support to the private enterprises/firms****:* There was an immediate gap to develop the capacity of micro and small water service providers to effectively offer management services. It was through this facilitation that appropriate PS participation would trigger a shift towards reward performance, improved operational efficiency and increased access to quality water services.

Other factors that were considered included: -

- ***Regulatory Environment*** –The environment to embrace the model and support tariff adjustments for commercial viability
- ***Political Economy*** – The extent or level of government and community support for PS involvement
- ***Water Systems Diagnosis*** – The nature of the problem at hand — lack of investment funds, lack of expertise, lack of information on consumption of quality water, etc.

In the Kenyan rural sub-sector, MAP partnered with Lake Victoria North and Lake Victoria South Water Service Boards (WSBs) in the lake region, 5 micro-small and medium enterprises as Water Operators and WUAs through an innovative Public Private Community Partnerships (PPcPs). This resulted in improved outreach, reliability, quality and sustainability of water services delivery, benefitting more than 80,000 people.

Based on the programme learnings, below are the main steps to successfully implement the 5 SDMs for any small and medium water supply scheme.

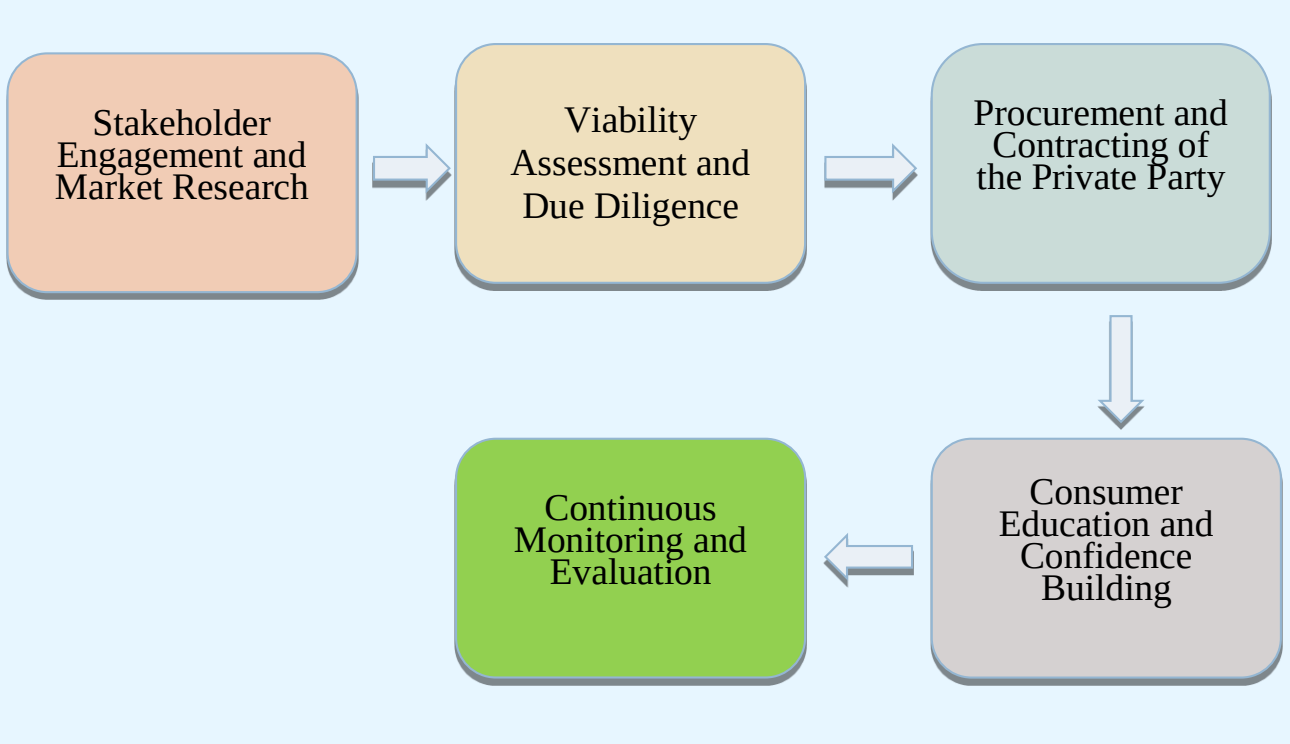


Figure 1: The SDM Process

2.2 Lease Operator Model

Lease Operator (LO) model is a management approach where an operator (lease holder) takes full responsibility in operating and maintaining existing infrastructure in a water project and provides minor investment for a contractual period of between 7-10 years while paying the asset owner an agreed lease fee. The CG maintains the overall responsibility for major investments and bears the investment risk but transfers the operational risks to the operator.

LO model is suitable where the community WUA (or CG on behalf of their WUA), wants to further improve service level standards to their consumers i.e. improving quality and quantity of water, hours of supply etc. in their already functional water project.

The LO contractual agreement is as follows.

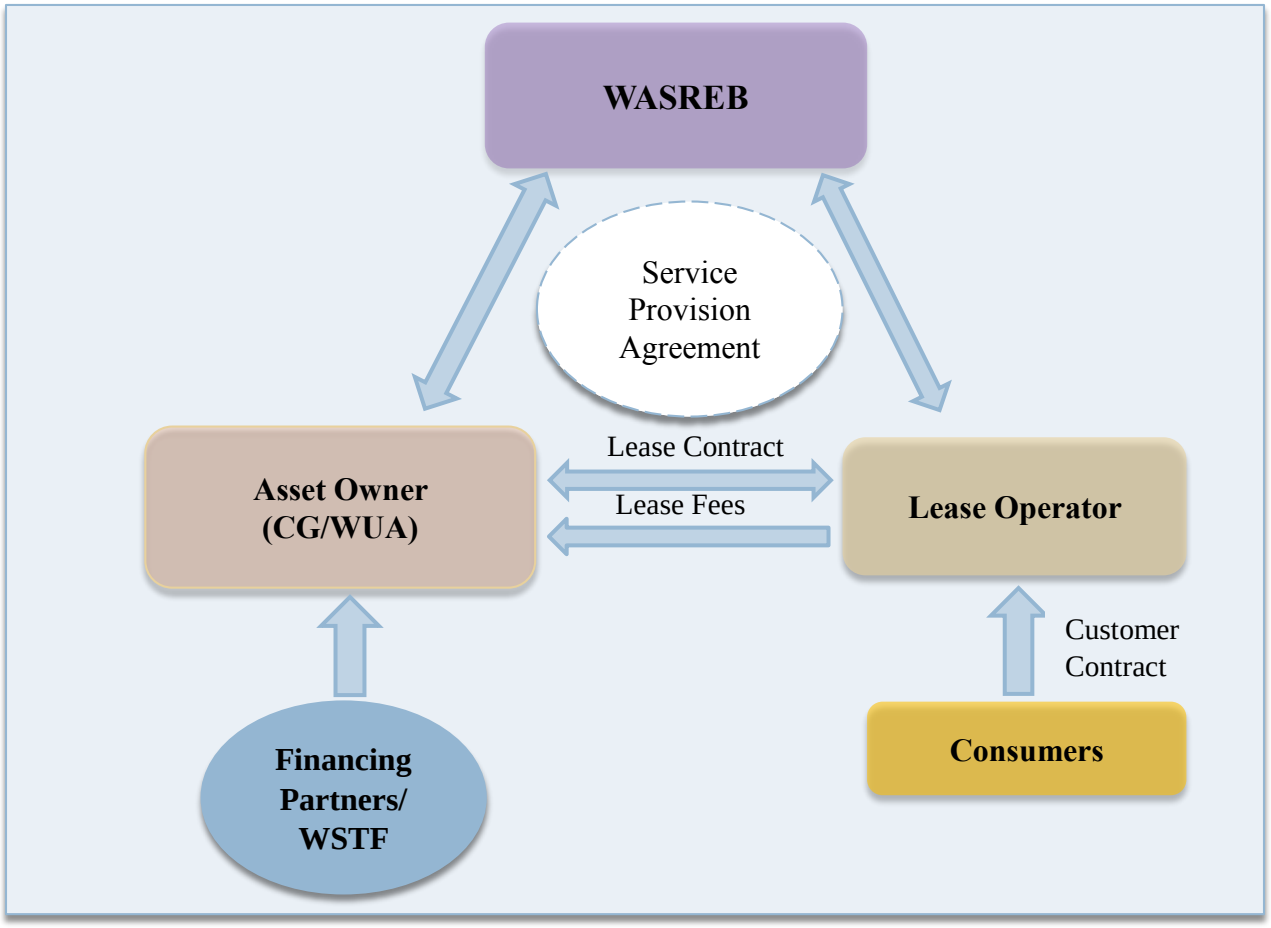


Figure 2: The LO Model

The revenue flow in a LO model is as follows:

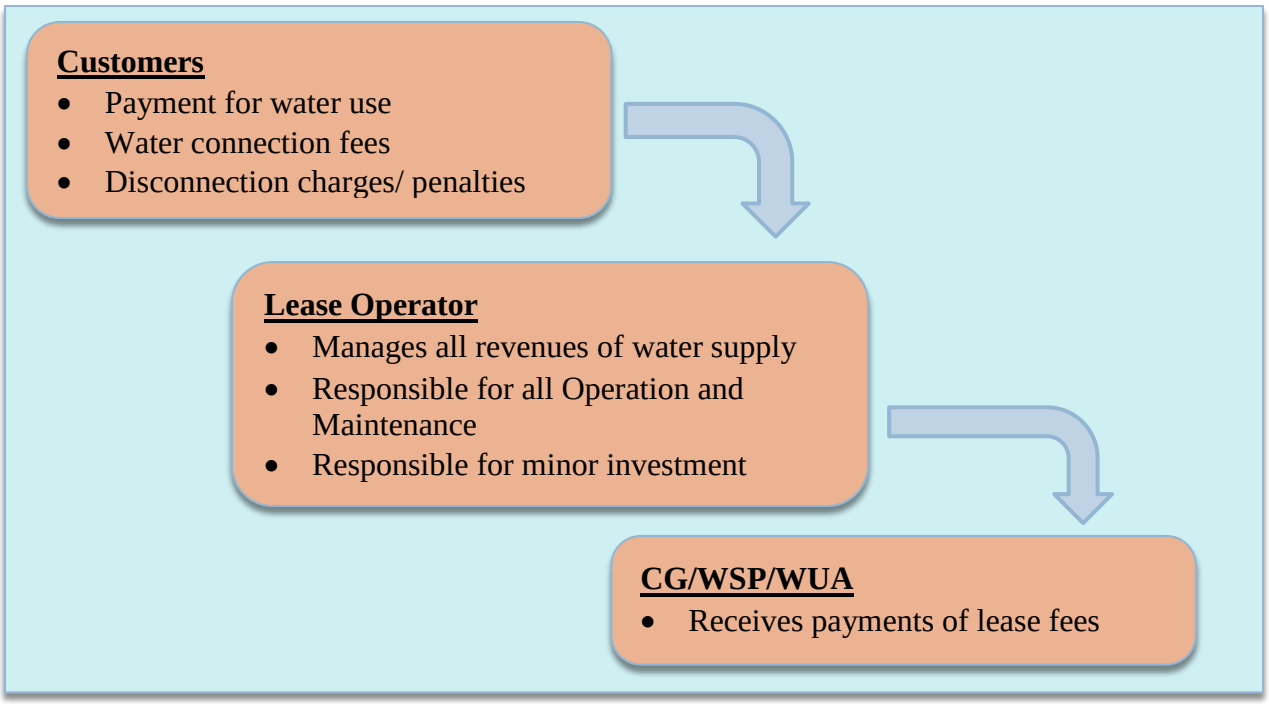


Figure 3: Revenue Flow in LO model

The steps to follow in an LO model are outlined below:

Figure 4: Steps in an LO model

2.3 Professional Manager Model

Professional Manager (PM) model is an approach where appointed community representatives i.e. WUA recruit competent professionals to undertake day to day operations of the water utilities and the WUA performs an oversight role and provides strategic guidance to staff under a clear governance system.

PM model is applicable where the Community/WUA is integral in the management of all aspects of water service delivery – not only operations and maintenance but also in cases of improvement of service such as extending networks, household connections etc.

The PM contractual agreement is as follows:

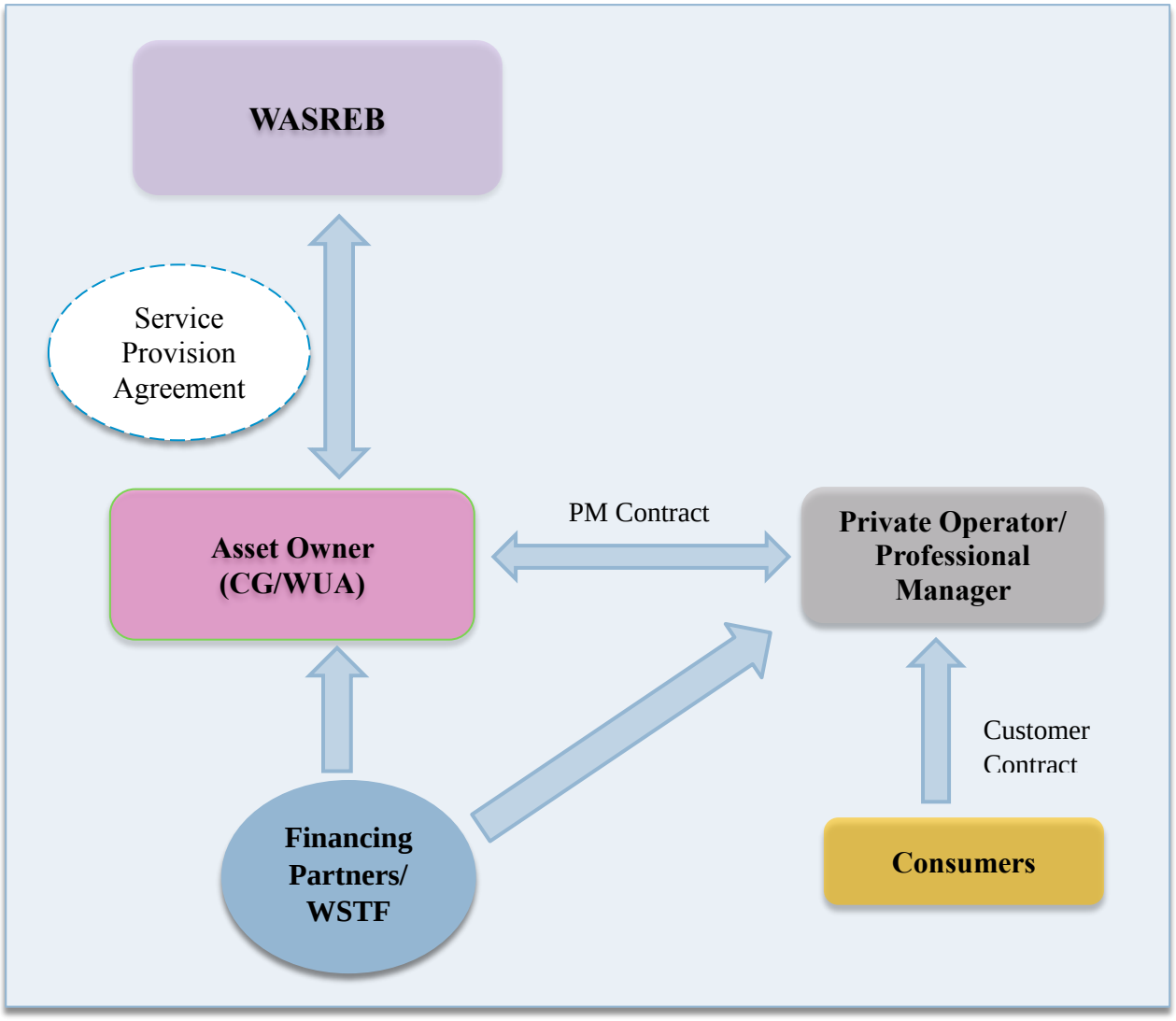


Figure 5: The PM Model

The revenue flow in a PM model is as follows:

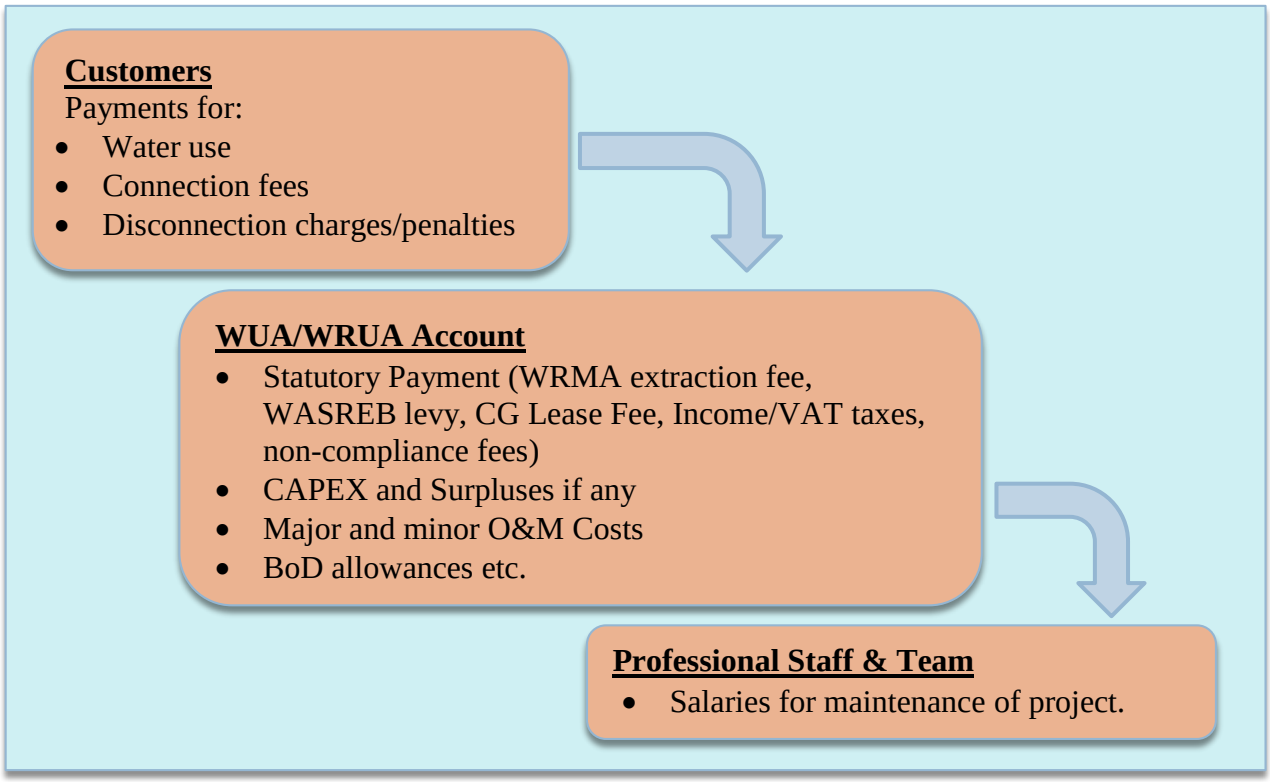


Figure 6: Revenue flow in a PM model

The steps to follow in a PM model are outlined below:

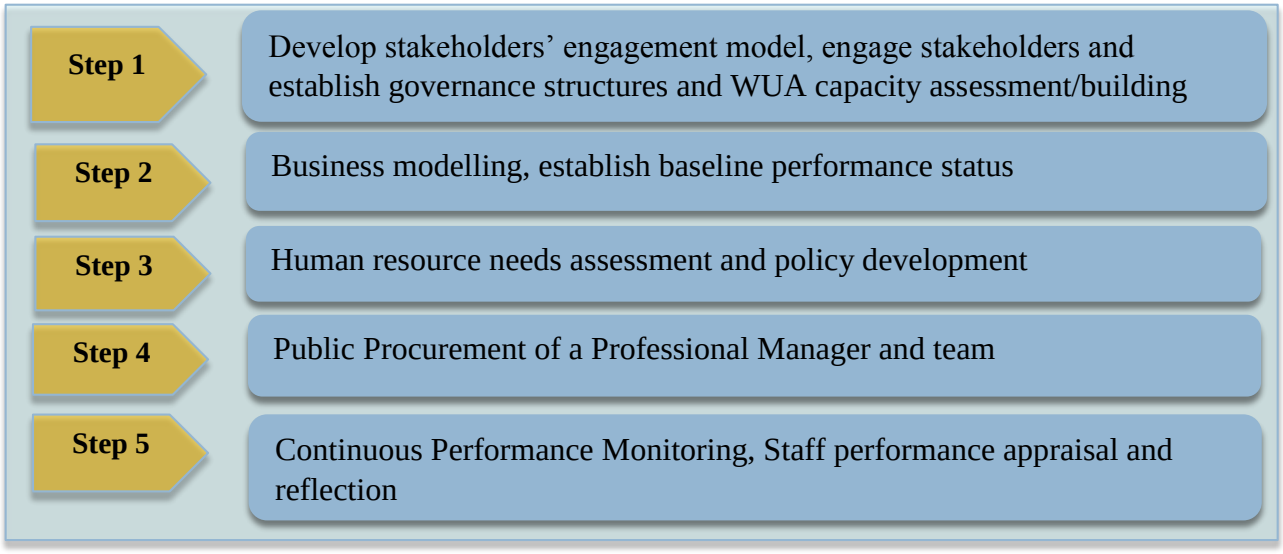


Figure 7: Steps in a PM model

2.4 Private Operator Model

Private Operator (PO) model is a management approach whereby a private party, in this case a legally registered enterprise, is contracted to provide all the technical and operational expertise required to successfully run a water supply system on a day to day basis for a period of 3-5 years.

PO model is suitable where the Community/WUA with good governance structures is the Asset Developer and is in need of significant injection of professional management capacity to effectively and efficiently deliver water services. The PO (private enterprise) is licensed by the CG and/or WASREB, to provide efficient water services to the community while maintaining set out service level standards i.e. quality, quantity, reliability, cost and hours of supply etc.

The PO contractual agreement is as follows:

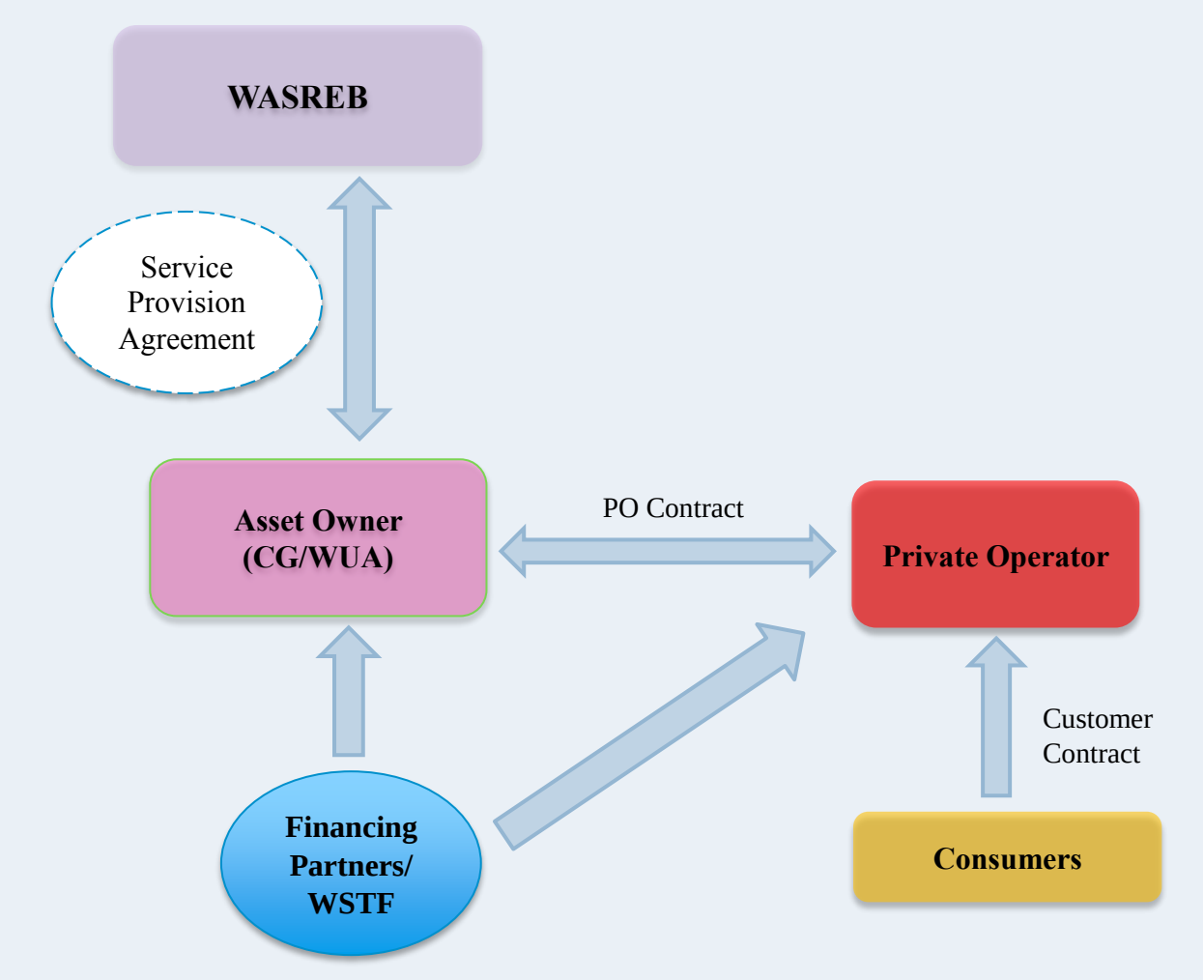


Figure 8: The PO Model

The revenue flow in a PO model is as follows:

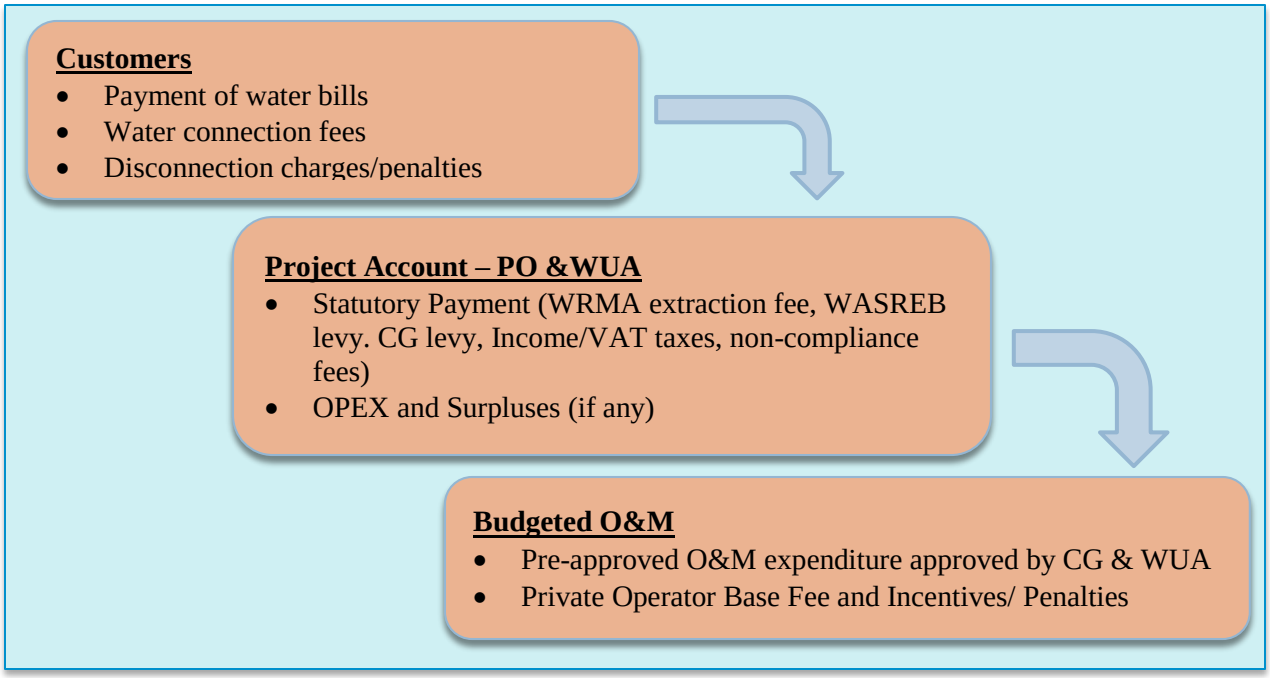


Figure 9: Revenue flow in a PO model

The steps to follow in a PO model are as outlined below:

Figure 10: Steps in a PO model

2.5 Delegated Management Model

Delegated management model (DMM) is a management approach whereby a WSP assigns to a small operator a number of its water service delivery functions (operations, maintenance and revenue collection). The model is guided where a larger WSP exists but is not able to efficiently and effectively serve all its constituents within its mandated area of supply.

A DMM is suitable in urban informal settlements and rural areas that do not receive reliable and safe water supply from the existing WSP. The responsible WSP provides bulk water supply and appoints a **private entrepreneur** as the **Master Operator (MO)** to operate and manage part of the WSP's network. In turn the master operator will sell to households or kiosk vendors with set out responsibilities of consumer billing, revenue collection and minor maintenance. The aim of the DMM is to ensure delivery of affordable water services to low income household areas using entrepreneurs.

The DMM contractual agreement is as follows:

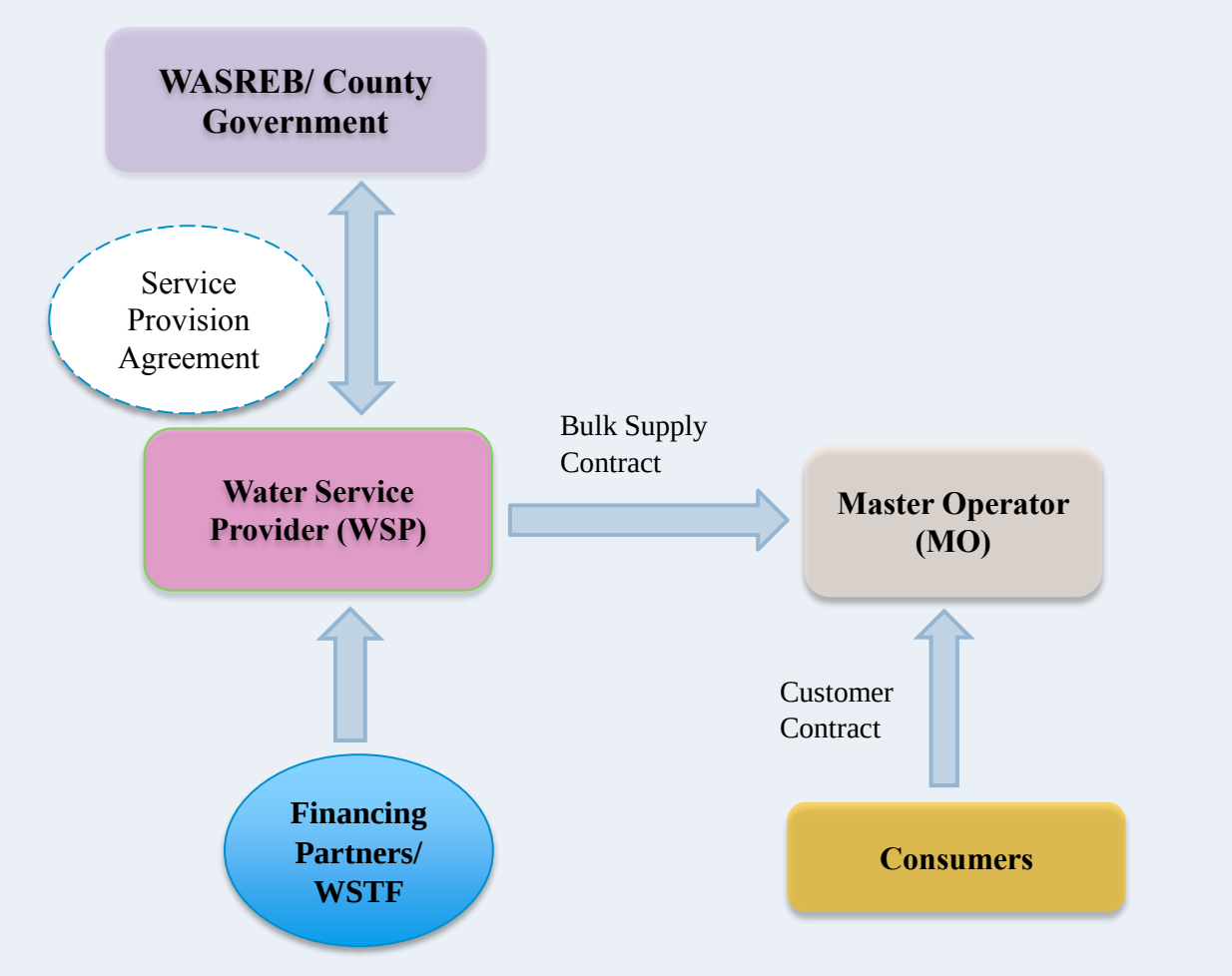


Figure 11: The DMM Contractual Agreement

The revenue flow in a DMM is as follows:

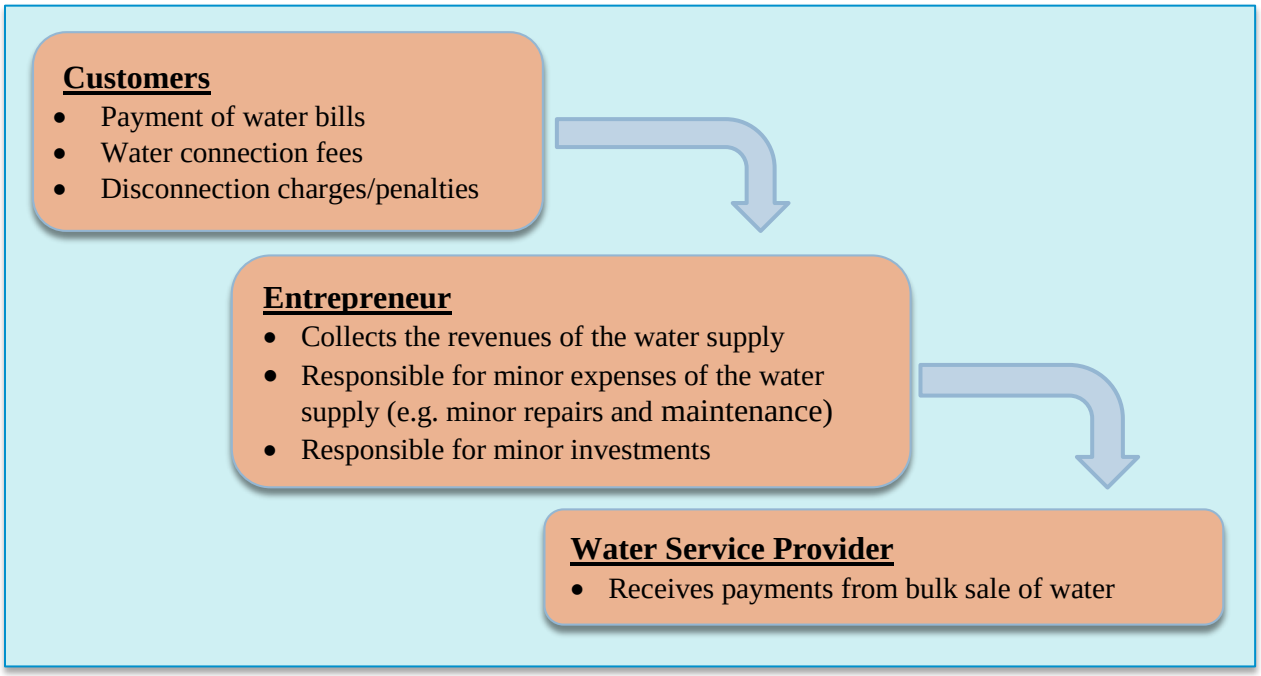


Figure 12: Revenue flow in a DMM

The steps to follow in a DMM are as outlined below:

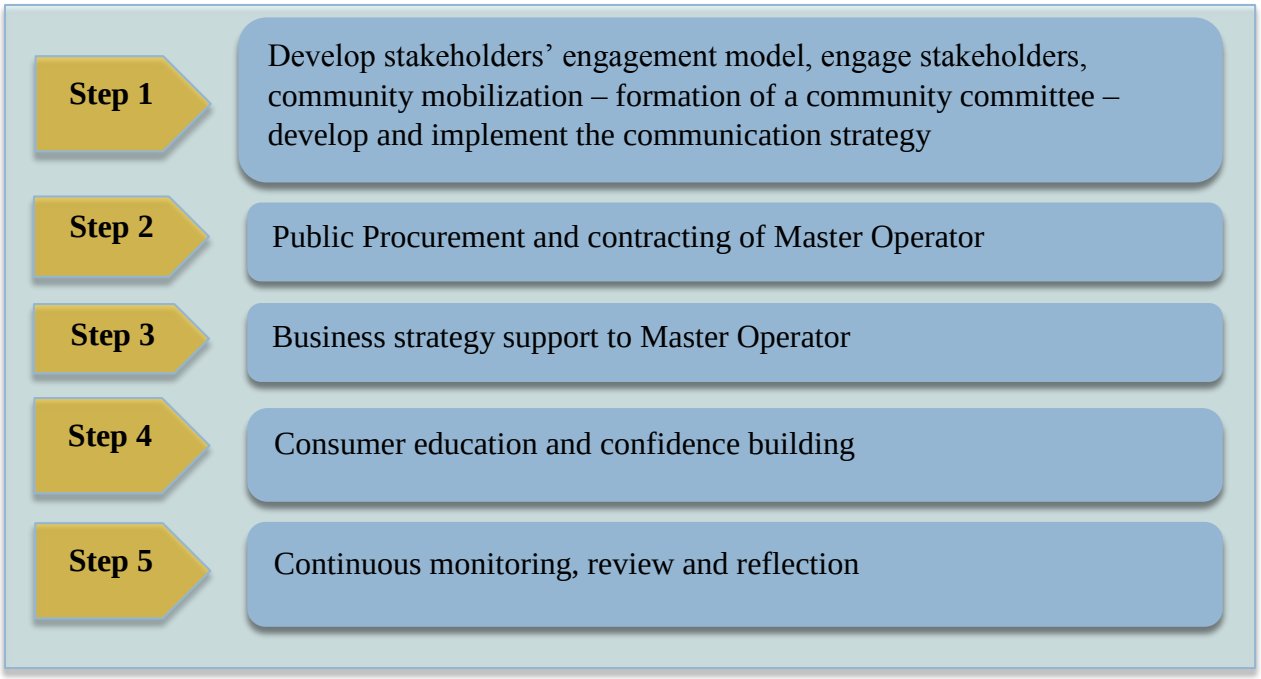


Figure 13: Steps in a DMM

2.6 Operation and Maintenance Service Contract

An Operation and Maintenance (O&M) Service Contract is a model whereby the CG/WSP/WUA contracts a private enterprise to provide operation and maintenance support (preventive, corrective and reactive maintenance) of water assets on their behalf, often on an annual basis.

The O&M Service Contract model is a suitable model for repairs and maintenance of hand-pumps, solar/electric/diesel pumped boreholes and associated technologies. The range of O&M services provided by the private enterprise may also include supply of spare parts for maintenance and repair works, billing, information technology (IT) support and targeted technical assistance to water schemes/points. O&M Service Contract provides for the remuneration of the private enterprise in form of a service fee, that is often based on:

a) a lump sum costing of services provided within the period in question or
b) a two-part fee comprising of a fixed cost for asset monitoring/contract management and a variable part for costs incurred in actual service provision. Usually, a quarterly, semi-annual or annual payment frequency to the O&M service provider is adopted.

The O&M contractual model is as follows:

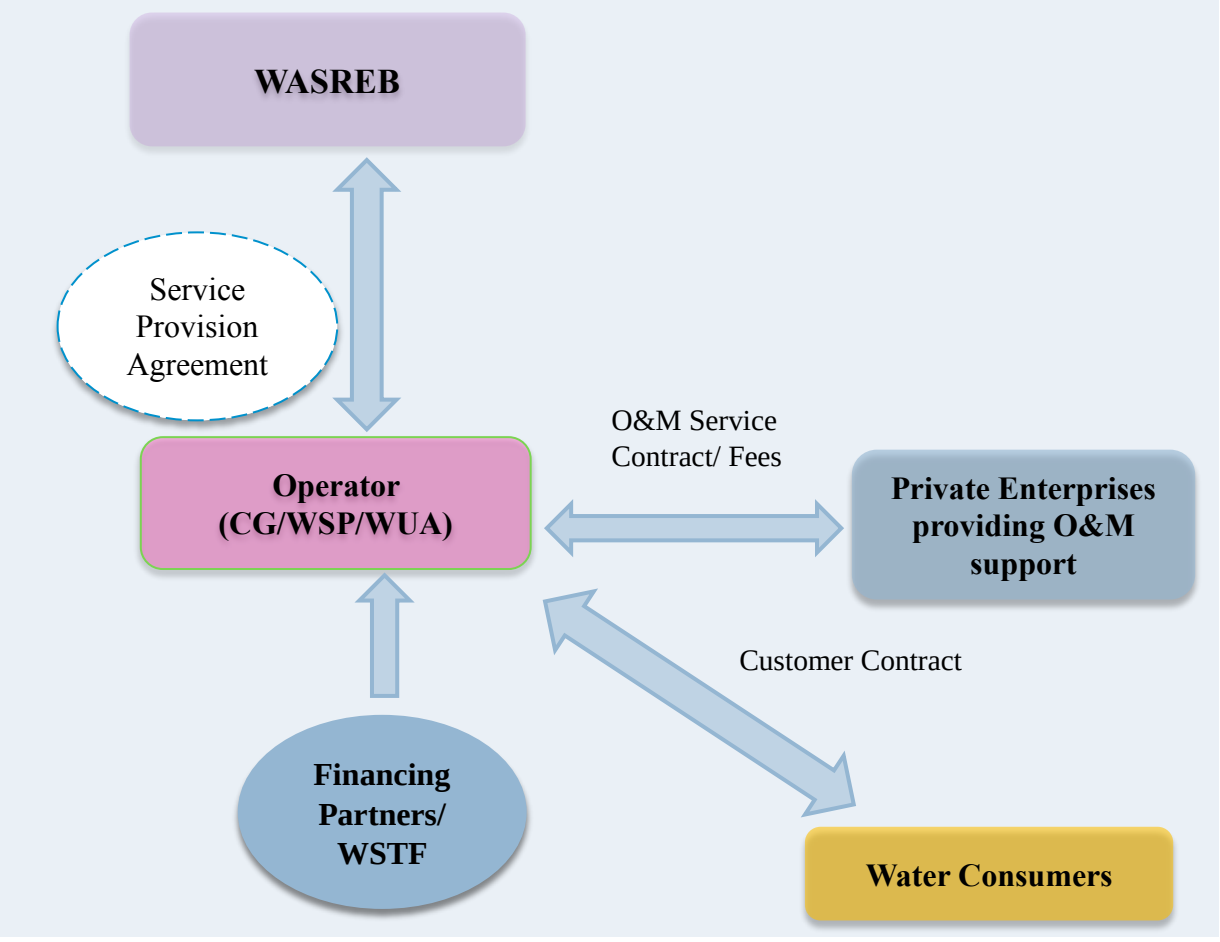


Figure 14: O&M Model

The O&M revenue flow is as follows:

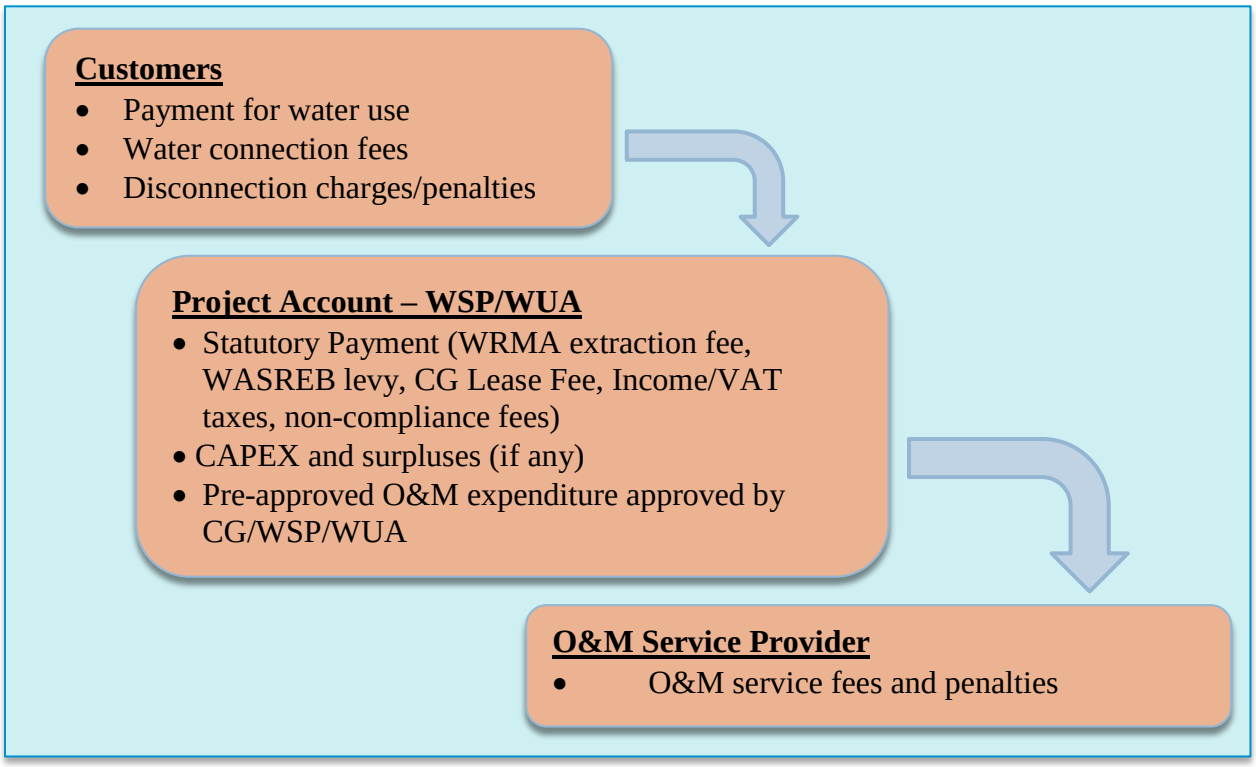


Figure 15: Revenue flow in an O&M model

The steps to follow in an O&M service contract are outlined below:

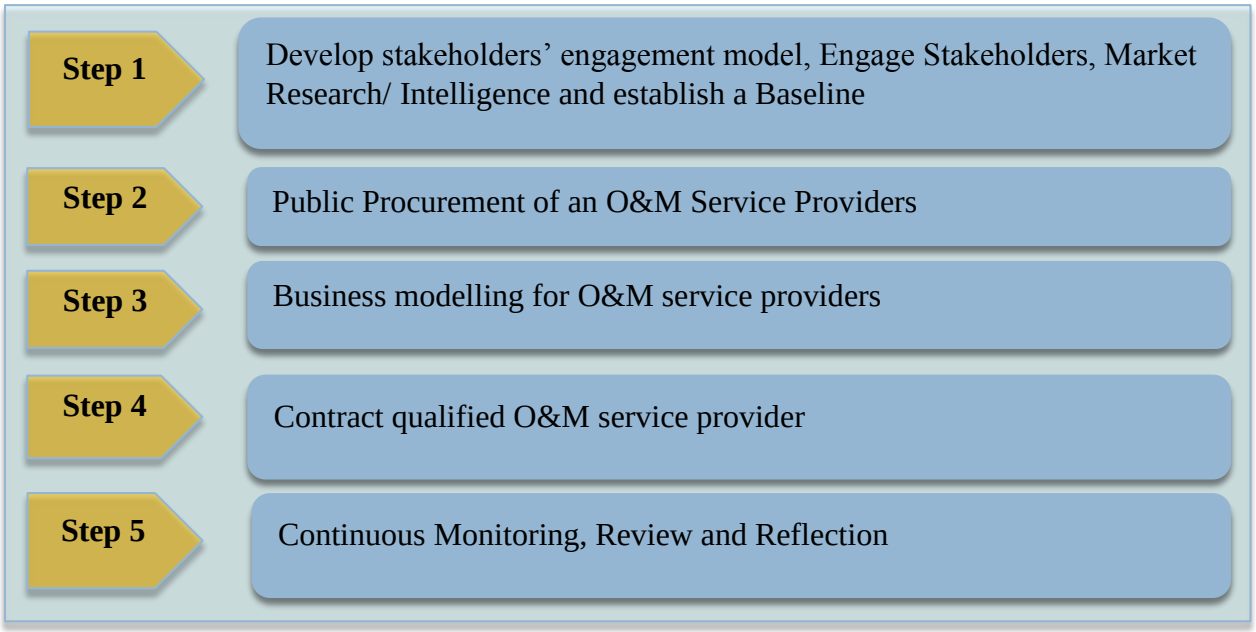


Figure 16: Steps in an O&M model

2.7 Stakeholders Roles and Responsibilities

Party	Roles and Responsibilities				
	Delegated Management	**Lease Operator**	**O&M service contract**	**Professional Management**	**Private Operator**
CG	• Provide or mobilise capital investments	• Identification of viable projects for PS contracting • Oversight and monitoring of WUA-LO contractual compliance • Monitor service delivery indicators of project using M&E systems • Integrate viable SDMs into County WASH policies • Provide or mobilise capital investments i.e. budgetary allocations, viability gap financing, grants/subsidies to incentivise PS • Recommend for Service Provision Agreements (SPAs)	• Asset owner and identifies viable projects for O&M service contracts • Contracting of the O&M service provider/enterprise • Oversight and monitoring of WSP/WUA-O&M contractual compliance. • Monitor service delivery indicators of project using M&E systems. • Integrate viable SDMs into County WASH policies • Provide or mobilise O&M service fees i.e. through budgetary allocations, viability gap financing, grants/subsidies etc., to contribute to O&M fees when needed. • Pays for agreed O&M service fees. • Conduct county water access baselines and maintain a database of water assets/sources.	• Legally the asset owner • Recommends for issuance of SPAs • Oversight and monitoring of WUA performance as stipulated in the SPA; • Monitor service delivery indicators of project using M&E systems • Integrate viable SDMs into County WASH policies • Provide or mobilise capital investments i.e. budgetary allocations, grants/subsidies	• Identification of viable projects for PS contracting • Oversight and monitoring of WUA-PO contractual compliance • Monitor service delivery indicators of project using M&E systems • Integrate viable SDMs into County WASH policies • Provide or mobilise capital investments i.e. budgetary allocations, viability gap financing, grants/subsidies to incentivise private sector • Recommend issuance of SPAs

WSP/WUA	• Provision of bulk water • Contracting small scale operators • Oversight and monitoring of providers • Reporting on key performance indicators (KPIs) to CG and WASREB	• Oversight/governance, contractual compliance, M&E • Consumer education and mobilization	• Enters into contractual obligation with O&M service enterprise. • Defines systems service standards and category of O&M levels, e.g. preventive, reactive and corrective. • Pays for agreed O&M service fees. • Monitors water systems/utilities performance	• Asset owner; staff oversight and performance measurement, contractual compliance, (M&E). • Source for new funding for capital investments and major rehabilitation of the water supply. • Governance - represents interests of all community members benefiting from the water project; • Recruitment of professional staff for day to day operations of the water project; • Responsible for minor expenses of the water supply (e.g. minor repairs and maintenance); • Pays staff salaries; • Reporting on performance to CGs, WSP and WASREB	• Oversight/ governance, contractual compliance, (M&E) • Consumer education and mobilization • Approve payments to POs

Master / Lease /Professional manager/ O&M private entrepreneur/ Private Operator	• Manages water services within the DMM • Customer revenue collection • Reading and billing of customers • Minor O&M • Network extension with guidelines and authorization from the WSP	• Daily O&M of the water project, accountability/commitment for improved service delivery & payment of lease fees • Consumer education and mobilization • Demonstrate improved service level standards e.g. on quality and quantity of water, hours of supply etc. • Comply with any statutory requirements for service provision • Performance reporting on KPIs to CG/WUA and WASREB • Minor O&M	• Develop a schedule and procedure for maintenance • O&M and accountability/commitment for improved service delivery • Incorporation of appropriate technologies • Delivery of quality and reliable O&M services as per the contractual obligations. • Comply with any statutory requirements for O&M	• Responsible for day to day operations and quality, quantity and reliable water/sanitation service delivery; • Manages all staff of the water scheme; • M&E and reporting on performance to WUA/Water committee. • Advise WUA on services improvement and responsible for sustainably managing the water scheme	• Daily operation of the project, maintenance and accountability/ commitment to improved service delivery • Demonstrate improved service level standards e.g. on quality and quantity of water, hours of supply etc. • Comply with any statutory requirements for service provision • Performance reporting on KPIs to CG and WASREB
Consumers	• Oversight • Reporting illegal connections/ vandalism • Payment for water • Customer/ community relations	• Oversight • Reporting illegal connections/vandalism • Payment for water • Customer/community relations.	• Oversight • Reporting illegal connections/vandalism • Payment for water • Customer/community relations.	• Oversight • Reporting illegal connections/vandalism • Payment for water • Customer/community relations.	• Oversight • Reporting illegal connections/ vandalism • Payment for water • Customer/ community relations.

WASREB	• Bulk water tariff approval	• Ensure that consumers are protected and have access to efficient, adequate, affordable and sustainable water services and sanitation. • Approve tariffs proposed by LO • Facilitate CG in monitoring performance based on 9 KPIs • Ensure good governance practices are employed in the CG – LO relationship • Issue SPA		• Ensure consumers are protected and have access to efficient, adequate, affordable water services. • Approve proposed tariffs • Issue SPAs • Support CG in monitoring performance of the water project based on KPIs;	• Ensure that consumers are protected and have access to efficient, adequate, affordable and sustainable water services and sanitation. • Approve tariffs proposed by PO • Facilitate the CG in monitoring performance of the water projects based on agreed KPIs • Issue SPA
WSTF	•Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services. •To develop innovative funding mechanisms •To enhance capacity of the counties in stakeholder coordination	•Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services. •To develop innovative funding mechanisms •To enhance capacity of the counties in stakeholder coordination •Provide M&E mechanisms to oversee construction and monitoring of infrastructure	•Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services. •To develop innovative funding mechanisms •To enhance capacity of the counties in stakeholder coordination •Provide M&E mechanisms to oversee construction and monitoring of infrastructure	•Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services. •To develop innovative funding mechanisms •To enhance capacity of the counties in stakeholder coordination •Provide M&E mechanisms to oversee construction and monitoring of infrastructure	•Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services. •To develop innovative funding mechanisms •To enhance capacity of the counties in stakeholder coordination •Provide M&E mechanisms to oversee construction and monitoring of infrastructure

Table 1: Roles and responsibilities

3. Stakeholder Engagement Tool

3.1 Definition and scope.

A stakeholder is someone who has an interest in or concern regarding something. It also refers to people who are directly or indirectly affected by a project. In this case, the term 'stakeholder engagement' refers to processes that define the involvement of stakeholders e.g. National Government institutions -Ministry of Water and Irrigation (MWI), WASREB & WSTF, CGs, PS, WSPs, community etc. in matters relating to water and sanitation services.

Setting your Objectives

The 1st step is to set communication objectives for each stakeholder audience. These objectives will depend on the overall project objectives. Communication activities should support the project objectives in achieving a change in the following three characteristics of the project audiences:

a) ***Knowledge****:* new things you want them to learn e.g. importance and value of PS participation.

b) ***Attitude****:* changes in opinions you want to stimulate e.g. perception that water is free.

c) ***Practice****:* changes you advocate in what the audience does and the new thing you would like them to do or stop doing e.g. paying for safe and potable water, dangers of consuming unsafe water, etc.

The stakeholder tool should aim to:

a) Create awareness of the value of clean water: All stakeholders need to be aware of the need for accessibility to clean water for both human and animal consumption.

b) Sensitize the consumers on involvement of other parties who ensure clean water is availed to them.

c) Highlight the levels of stakeholder engagements

d) Highlight the responsibilities of the stakeholders in terms of water and sanitation services.

e) Create a complaint system: This will ensure efficient and effective communication to the necessary parties about water and sanitation issues.

The engagement of stakeholders under this guideline comprises of the following levels of involvement with varying degrees of influence on water and sanitation services delivery and decision making:

d) Engagement between the CG and consumers

e) Engagement between entrepreneurs/investors and consumers

f) Engagement between CG and entrepreneurs/investors

g) Engagement between MWI, WSTF, WASREB and CG

In regards to the principles, a good stakeholder engagement should be:

a) ***Transparent****:* All stakeholders should be corruption-free and have clear pre-set steps in complaint handling and decision making.

b) ***Consistent****:* It should not change regularly to ensure that the stakeholders are familiar with the guidelines.

c) ***Friendly****:* There should be a free environment where stakeholders can feel comfortable to engage openly with other stakeholders.

d) ***Accountable****:* Every stakeholder should know their roles and responsibilities and must be able to account for all that they do, whether it is participation in a forum or reporting a grievance or view to the right party.

In order to ensure smooth communication, roles and responsibilities must be developed and assigned. This will not only assist in knowing who does what but also in knowing the steps to be taken in handling complaints. This guideline mentions the concerned stakeholders, highlighting their responsibilities:

3.1.1 Water Sector Trust Fund

The WSTF will:

a) ***Finance management and development:*** The Water Fund will assist in development and management of water services in marginalised and underserved areas. It will develop innovative funding mechanisms to support and enhance sustainability of water and sanitation projects within all the counties.
b) ***Provide conditional and unconditional grants to Kenya's counties for improved water and sanitation services:*** This will be within their mandate of support of implementation of water supply and sanitation projects for underserved rural communities.
c) ***Enhance capacity development for efficient service delivery:*** Enhancing the capacity of the counties in stakeholder coordination, engagement and management will ensure sustainability of the investments. Providing technical, advisory and capacity development support will enhance the capacity of the implementers in order to realise their programmes successfully.
d) ***Support communities to effectively manage and conserve their water resources within their sub-catchment:*** This will ensure that the poorest rural target areas have access to improved water and sanitation services.
e) ***Provide M&E mechanisms:*** This will oversee construction and monitoring of infrastructure. This will coordinate the monitoring and evaluation of projects and interventions to ensure timely completion and quality of deliverables. M&E mechanisms will also hold the function of managing learning and growth functions.

3.1.2 County Government

The CG will:

a) ***Encourage entrepreneurs/investors to view water projects as a business opportunity:*** They can convince the entrepreneurs/investors to create water dispensing facilities. Low water table areas should be a target for such individuals. Boreholes can be drilled resulting in accessibility of water to the public.

b) ***Search for funds to expand water infrastructure services:*** This can be done by holding conferences where investors are made aware of the water and sanitation issues in their respective counties with the aim of encouraging the investors to fund water infrastructure services.

c) ***Call for expression of interest:*** CGs can post a Request for Proposal (RfP) in national newspapers where they request interested entrepreneurs/investors to send their financial and technical proposals and prequalify them using a pre-defined eligibility criterion.

d) ***Hold meetings with consumers:*** The CGs can target where the consumers are. In the urban areas, social halls or convention centres can be used to hold meetings where the consumers are given room to air their views and grievances concerning water and sanitation services in their county. In semi-arid areas, CG officials can hold *barazas* at water points.

e) ***Marathons to raise funds:*** This method can be adapted by CGs to involve both investors and consumers to raise funds to improve the quality of water and sanitation in their county.

f) ***Use media to reach out to the concerned parties:*** CG officials can approach vernacular radio stations to sensitize the public about benefits of clean water. The radio stations to be recommended should be ones that have high listenership in the counties.

g) ***County allocation for infrastructure development:*** CG sets aside money for water infrastructure within the county in order to improve access.

h) ***Equalization fund:*** This is used to provide basic services including water to marginalized areas in order to bring the quality of services in these areas to the levels that matches the rest of the nation.

3.1.3 Water Services Regulatory Board

WASREB will:

a) ***Hold meetings:*** WASREB officials can hold annual or semi-annual meetings where the CG officials will present any view or grievance concerning water and sanitation.

b) ***Offer support in the design and implementation of models:*** WASREB officials can come up with models to improve water and sanitation services. The CG officials will then be assisted to apply these models in their respective counties.

c) ***Invite international experts:*** WASREB officials can target countries that have excellent water infrastructure. These experts can meet consumers, investors and CG officials in a convention centre where they will talk about adopting models that will improve water and sanitation services.

d) ***Issue licenses:*** Service Provision Agreements (SPAs) are issued to the water providers by WASREB.

e) ***Tariff setting:*** Tariffs that are set by the WSPs must be approved by WASREB and reviewed where necessary.

3.1.4 Entrepreneurs/Investors

a) ***Investment opportunities:*** This particular group of people must see water projects as something they can invest in.

b) ***Participation:*** Potential investors can participate in marathons to raise funds which will improve water and sanitation services.

3.1.5 Consumers

a) ***Speaking out:*** Consumers are responsible for airing out their views and grievances during any forum presented to them by either CG or WASREB officials.

Involved in decision making: CG and WASREB officials should first listen to the suggestions given by consumers. This will in turn encourage the consumers to warm up to the CGs and WASREB officials.

3.2 Plan and evaluate your communication activities

When implementing the guideline, the stakeholders must consider the four areas in Kenya: urban, rural and arid and semi-arid areas. The communication tools to be used will be highlighted according to the four areas.

Urban and Peri-urban

An urban area can be described as one with a highly populated density and infrastructure. The communication tools that the stakeholders shall use are:

- **Radio:** According to the Kenya Audience Research Foundation (KARF), 6 out of 10 Kenyans aged 15 and above listen to the radio on a daily basis. The stakeholders should target the radio stations with high listenership:

Radio Station	Listenership
Citizen Radio	National- Swahili
Milele FM	National- Swahili
Radio Jambo	National- Swahili
Radio Maisha	National- Swahili
Classic FM	National- English
KBC- Swahili service	National- Swahili
KBC- English service	National- English
Homeboys Radio	National- English

Table 2: Radio stations

Presenter mentions are a common way to pass information to the public. Presenters in the top radio stations in urban areas shall be briefed on what to say during the morning or afternoon shows. Radio stations like Classic FM and Radio Citizen and local radio stations within the areas of the water systems can be considered. WASREB and CG officials shall use this method to pass information to the investors and consumers.

- **Television:** TV is the second most used source of media in Kenya. The stakeholders can approach the TV stations below to broadcast information.

TV Station	Viewership
CITIZEN TV	National
KTN TV	National
NTV	National
K24 TV	National
KBC TV	National

Table 3: Urban area TV viewership

The CG can opt to tailor make a TV commercial which will highlight the major points about water and sanitation with the aim of boosting the awareness to investors and consumers. Popular TV programmes e.g. *AM Live* on NTV, K24 *Alfajiri*, *Morning Express* on KTN TV and *Pambazuka* on Citizen TV have high viewership. WASREB and CG officials should approach such TV stations to request for a platform to boost awareness about water and sanitation in the country and specifically in the counties.

- **Newspapers:** This form of media is suitable in urban and peri-urban areas. Below is a list of the top newspapers with the highest readership in Kenya.

Newspaper	Readership
Daily Nation	National
The Standard newspaper	National
People Daily	National
Business Daily	National

Table 4: Newspaper readership

WASREB and CGs should post publication on newspapers, targeting communication between themselves, consumers and investors.

- **Internet:** Communication via email is suitable for engagements especially between WASREB and CGs and CGs and investors/entrepreneurs. The majority of people have switched from analogue to digital. This has resulted in online newspapers for example Daily Nation and Standard Digital that can be used to pass on information.

This form is suitable for engagement between WASREB and CGs and between CGs and urban and peri-urban investors. WASREB and CGs can use their social media platforms: Facebook, Twitter and Instagram to post articles about latest developments related to water and sanitation services.

- **Billboards:** Install optimal but affordable billboards with impressive spread and strategically located for high convergent points with incidence of low traffic movement for longer contact time. WASREB and CGs shall display information on bill boards, targeting communication between themselves, consumers and investors.

- **Flyers:** This is a good tool to use in communication between CGs and consumers. Flyers with short, precise and adequate information shall be displayed on noticeboards in major buildings in the city.

- **Magazines:** This form of communication shall target the investors and consumers. Magazines like *Small Medium Enterprises Today* contain corporate news. WASREB and CG officials shall post articles about water and sanitation on such magazines with the aim of targeting investors and consumers.

3.2.1 Rural

A rural area is by definition located outside major towns and cities. The inhabitants focus on agriculture, mining or other economic activity which benefits their individual families, the county or even the entire country. The communication tools to be used shall ensure that the communication is translated to suit the inhabitants in the rural areas in the counties.

- **Radio:** The stakeholders should target the rural radio stations with high listenership such as**:**

Radio	Listenership
Musyi FM	Eastern
Baraka FM	Coast
Wimwaro FM	Embu
Mayani FM	Rift Valley- Maasai
Mayienga FM	Nyanza- Luo
Mulembe FM	Western- Luhyia
Namlolwe FM	Nyanza- Luo
Mbaitu FM	Lower Eastern
Athiani FM	Lower Eastern- Kamba
Kameme FM	Central- Kikuyu
Inooro FM	Central
Kass FM	Rift Valley- Kalenjin
Kameme FM	Central
Chamgei FM	Rift Valley- Kalenjin
Egesa	Regional- Kisii
Ramogi FM	Nyanza
Muuga FM	Meru

Table 5: Rural radio stations

Just like in the urban areas, presenter mentions can be considered. The presenters, who speak the same language as the inhabitants shall be used to engage communication among the stakeholders.

- **Social halls:** Any building where people can convene is regarded as an avenue for the CG officials to address the consumers and investors. Places like churches and school halls shall be considered.

- **Flyers and brochures:** These materials shall also be used. They shall be equipped with short, precise and adequate information that can pass information from WASREB and CG officials to the consumers and investors.

- **Billboards:** Just as in urban areas, billboards can be used in rural areas. They shall be strategically positioned on major highways that lead to urban centres. WASREB and CGs shall display information on billboards, targeting communication between themselves, consumers and investors.

3.2.2 Arid & Semi-arid areas

This can be described as an area with severe lack of water and other resources. The following communication tools can be considered.

- **Group discussions:** Forums where the stakeholders can convene and get educated, air their views and grievances and make decisions shall be targeted. Barazas shall be organized where the WASREB and CG officials will talk to the consumers about importance of water and sanitation. Frequent meeting points such as water points and major markets have to be considered. Information can be passed through word of mouth. This will result in better stakeholder engagement.
- **Household visits:**

WSTF, WASREB, CG and WSP officials shall consider household surveys/SMS campaigns where they can target 10 households in a particular area and gather as much information as possible from the consumers. The information gathered will be used by WASREB officials to develop and implement models that will improve water and sanitation services in the area. It can also be used by the CG and WASREB officials to plan how they will come up with content to present to investors/ entrepreneurs.

Figure 17: A meter clerk reading a meter

4) Viability Assessments

It is difficult to determine commercial viability of rural water projects, due to challenges in management practices and lack of steady cash flow. Before engaging any PS actor, proper due diligence is required on their technical performance, financial health, legal status, political economy, governance and the socio-economic status (willingnes and ability to pay) of the community. Technical assistance from other relevant stakeholders (CG, water sector institutions like WSTF) can provide the necessary due diligencerequired to demonstrate commercial viabilty.

4.1 Commercial Viability Checklist

The table below lays out some factors to put into consideration when developing a checklist for commercial viability:

A Bulk Water meter

Factors to consider when developing a checklist for commercial viability of small water projects

TECHNICAL

- Raw water availability and quality
- Identification of site location and site boundary (e.g., for water source, borehole and equipment such as water treatment plant)
- Existing assets and investment requirements (including meters)
- Competing water supply sources
- Demand/consumption assumptions (ensure that project is not over or under-designed)
- Power supply options
- Availability of parts and equipment required for scheme
- Environmental and safeguards issues
- Tariffs/ability and willingness to pay and expected levels of service
- Capacity of the local PS and maturity of the local PSP market
- Conflict of interest - transparency on potential operators
- Background check on operators (for corruption, bankruptcy, litigation etc.)

FINANCIAL

- Sources of revenue and funds and cost of operations
- Projected revenues, costs of operations, risk matrices
- Value for money of the project comparing it to the cost over the project period of using traditional public procurement.
- The appetite of the local financial markets
- Breakeven analysis
- Financial sustainability

GOVERNANCE

- Existence of a water committee, organogram
- Frequency of board meetings, committee meetings, AGMs , meeting records

LEGAL

- The project should be registered or willing to register as a legal entity
- Project should have a license to supply water either in form of a SPA from WASREB or annual license from the WSB
- Clarity on asset ownership
- Project should have water abstraction permit from WRMA and EIA license
- Regulatory requirements e.g. Public Procurement and Asset Disposal Act, PPP law, environmental framework from NEMA etc.
- Tariff policy, any regulations by third parties

ENVIRONMENTAL FACTORS

- Sustainability of water source
- Quality of water
- Type of trees within the water catchment
- Socio-economic activities within the water catchment
- Awareness creation, full coordination and integration of climate adaptation at all levels of water resource management.

SDM	Checklist
Private Operator	• Operating ratio[4] should be greater than **1.0** • Debt service coverage ratio (DSCR) should be greater than **1.3**. (DSCR = sum of all cash available for debt repayment/annual debt service costs)[5] • Cumulative cash surplus must always be greater than zero; • The revenue collected by the project must be able to cover a reasonable profit margin of **10%** to enable the Operator cover inherent risks taken to run it.
Lease Operator	• Operating ratio should be greater than **1.0** • DSCR should be greater than **1.3**. • Cumulative cash surplus must always be greater than zero • The tariff must factor in the lease payments expected to be paid to the Asset Owner (Community or WSP)
Delegated Management model	• Suitable for urban informal settlements and rural areas that do not receive reliable and safe water supply from an existing WSP. • Existence of rent seekers i.e. official, unofficial and private tankers [vendors], siphoning off scarce water resources [from the WS distribution network] & selling exorbitantly to users.
O&M model	• The services to be provided by the operator are measureable e.g. a. Operating water kiosks. b. Accountancy and record keeping services. c. Billing. d. Borehole servicing, covering pump, controls, etc. e. Pump and equipment maintenance; f. Meter servicing. • Existence of a WSP coping reasonably well with the majority of operational tasks but improved efficiencies or effectiveness can be obtained through compartmentalising and out-sourcing specific tasks.
Professional Manager model	• Where the Community/WUA is integral in the management of all aspects of water service delivery – not only operations and maintenance but in cases of improvement of service such as extending networks, household connections • Existence of strong and actively functioning Water Committees/Boards. • Water committee adopted good governance practises i.e. legally registered, separation of operations tasks from governance aspects, properly elected management committee/board that is accountable and competent to govern affairs of the water supply system, operations staff able to handle tasks without undue interference from board

Table 6: Checklist for SDMs

[4]Operating Ratio = Revenues/Operating Expenses

[5] (DSCR = sum of all cash available for debt repayment/annual debt service costs)

4.2 Financial Analysis

Financial analysis is the process of determining a water system's viability, stability and profitability. This technique is commonly used by new investors to help them decide whether it's feasible to invest in a water project or not.

Business planning is a process that is used to outline the approach that a water project is considering to implement before investing its resources in order to assess its feasibility. The business plan also serves as an important performance measurement tool for the water project based on projected outcomes on improved service delivery and financial performance.

As discussed earlier in the toolkit, different SDMs have different implementation strategies which will impact the structure of the business plan that will be drawn out. This section will highlight the business planning process and analysis based on the types of SDMs.

Two broad categories have been drawn out from the existing 5 SDMs based on their similarities and differences:

a) *Operator Investment Approach* – where the PO injects a considerable amount of capital into the projects. This is applicable for PO, O&M, DMM and PM models.
b) *Owner Investment Approach* – where the CG or the WUA leases out the management services to an outside party who is responsible for injecting capital into the project.

Based on these two categories a distinction arises on the business plan and financial modelling approach to be taken.

4.2.1 Operator Investment Approach

Under this approach, the operator injects medium to high capital into the water project. It is therefore paramount for the operator to analyse the financial sustainability of the project before undertaking the investment. The key analysis to be carried out will include:

a. Performance analysis
b. Capital requirements analysis
c. Cash-flow analysis
d. Return on Investment (RoI)

a) Performance Analysis

An analysis of the water project's current performance will be key in determining its potential while supplying water efficiently, improving the overall financial performance. This will also provide the private operator with insights on the capital expenditure requirement of the project based on the performance of the existing infrastructure from abstraction to distribution, and rank them in order of priority depending on their impact. The key areas in the analysis include:

- ***Total population in project service area vs. current population served****:* The comparison will be used to determine the potential for growth of the project's customer base.
- ***Metered vs. non-metered connections****:* Non-metered connections incur expenditures for water projects without generating any revenue, and this can be changed to increase the

project's profitability. This will also provide a projection on the expected meter installations to be made.

- ***Billing technique*** i.e. flat rate vs. consumption based billing:
- ***Total water produced vs. metered water****:* This comparison will enable the determination of NRW within the project. This is a major source of financial loss for water projects due to high expenses abstracting the water which doesn't reach the end consumer. By determining the percentage of the NRW, a PO can estimate amounts of revenue that can be collected if the causes of the NRW are established. Moreover, the costs of fixing the issues leading to NRW will be included as capital expenditure during the capital requirements analysis stage.
- ***Expected revenue from metered connections vs. actual revenue collected:*** Collection efficiency and debt recovery are key for the survival of any business entity. Such an assessment will be used to determine if the water project can be profitable if all sales revenue were collected efficiently, and assess the need to invest in an effective team and billing mechanism.

The annexed Performance Analysis: Table 12 provides a template that can be used to conduct the performance analysis.

b) Capital Requirements Analysis

This analysis is used to estimate the amount of financial capital injection expected to be made in the project. It is at this phase also that the PO will determine the order of priority of the capital requirements based on their severity and effect on water supply and financial soundness on the project. Priority levels can be categorized as:

1) Priority Level I: High Priority
2) Priority Level II: Medium Priority
3) Priority Level III: Low Priority

Based on the priority levels, the capital investment can be spread across a certain period e.g. 2-5 years, to reduce heavy initial capital requirements.

The annexed Capital Requirements Sample Template can be used to compute the total capital requirements.

An important point to note is that there is interest on capital added to determine the overall total capital requirements. Whether the capital is being sourced from a financial institution or the PO already has the sum amount, it's important to cater for the interest rate, based on current market rates as an opportunity cost of investing in the water project rather than investing the sum amount in another project.

Using the priority ranking criteria discussed earlier, an investor can go further and rank the items listed on the capital requirements analysis and choose which items to invest in first mainly due to their impact on the sustainability and profitability of the water project.

c) Cash flow Analysis

An investor's primary focus when making an investment is to invest in a water project that will yield enough income to meet the investment capital. By conducting a cash flow analysis, an investor is able to determine:

a. The project's current financial performance and areas of improvement
b. The project's ability to repay back the capital invested
c. The period taken for the project to yield enough income to match the investment capital.

To measure the above investment requirements, the following indicators are used to measure and predict its future performance:

Indicator	Description
Net Present Value (NPV):	The NPV is used to determine the present value of an investment's profit. If the NPV of a project is positive, the decision would be that the investment is feasible while a negative outcome would indicate a non-feasible investment. The NPV is determined by discounting the yearly surplus (cash-flows) using the current market interest rate, and thereafter reducing the total summation by the investment capital requirement. The NPV is also used to determine a project's payback period i.e. how long will it take for the project to earn enough income to meet the investment capital.
Payback Period	This is a measure of the time frame a project's surplus income will be required to recover the capital invested.
Internal Rate of Return (IRR)	IRR is used to compute the return that a project would yield if an investment was made. The IRR is used as a capital budgeting tool whereby an investor compares the IRR of one potential project to another to determine which is the least and most favourable project to invest in respectively based on the cost of capital. A higher IRR normally indicates a project that will give a higher yield. Caution is however given on using IRR alone in decision making, with most investors combining IRR computation with NPV to determine which project would add greater value to their investments. Additionally, comparing IRR results of two projects with different investment periods may mislead an investor to invest in the short-term project while the long-term project may have a lower IRR but a much NPV value, hence adding more value to their investment portfolio.

Table 7: Cash flow analysis indicators

The first step in conducting a cash-flow analysis is to analyse the project's current financial performance. This entails getting data on the project's current revenue and expenditure. Financial Performance: Table 14 annexed below shows a template that can be used to capture this data from the last audited financial statements of the project. It's important to get audited statements to improve the investor's confidence on the integrity of the data. Based on the past year's performance, the investor can assume a growth strategy for the water project and set key indicators

that will be used to measure and project growth based on certain assumptions. The performance analysis that was carried out earlier on will also be key in highlighting indicators that have a direct effect on the financial statements which can be acted upon to improve performance. The key indicators can include the following:

Assumption	Comments
Non-Revenue Water	The assumption here would be that due to the investment made in fixing broken connections and adding meters to previously non-metered connection, NRW will decrease significantly.
Population served	Because of investments such as creating new connections, improving on the power supply at the water plant and new storage tanks a basic assumption to be made would be that the population served will eventually rise due to the availability of more water.
Dormant accounts	These are metered connections that currently don't receive water from the project. By improving on water production and creating more reliable connections, an assumption can be made that dormant accounts will be reactivated leading to an increase in the customer base.
Average hours of supply	This indicator can be extrapolated by assuming that the number of hours water will be supplied will rise gradually due to more reliable connections and stable power supply at the water plant.
Maintenance costs	Most, if not all investment decisions are not only focused on improving productivity but also on improving efficiency. For instance, by having a modern power supply unit, storage tanks and reliable connection pipes, less resources especially in relation to man hours will be used in fixing and repairing units in the project. This can then be reflected by a reduction in the maintenance costs incurred.

Table 8: Assumptions to be made during revenue analysis

Based on these indicators, an investor can therefore project financial performance reports into the lifespan of the project. A common extrapolation technique used in such scenarios is the use of percentages which are either incremental or decremental respectively depending on the type of indicator being measured.

Using the above indicators, projections into the water project's performance can be assessed by varying the indicators. The first analysis would be on the revenue projections based on metered connections, sales from kiosks and other revenue generated from new connections, penalties on late payments etc. Annexed Water Revenue Analysis: Table 15 is a sample analysis format that can be used to compute water revenue.

By analysing the revenue projections, one can determine the expected revenue amount that will be generated and use the figures in analysing the profitability of the water project. Table 9 below illustrates a sample of key assumptions that can be made during analysis of a project's financial performance being considered by an investor:

Assumptions	Percentage Change per Year	Comments
Water Production	4%	The first year of investment will see a rise by 102% due to capital injection on power supply and thereafter stabilize to an average of 4% annually
Non-Revenue Water	-5%	Due to investment in connection pipes, NRW is projected to decline
Population Served	10%	New connections will see more population getting access to clean water
Dormant Accounts	-5%	An increase in water supply will lead to dormant accounts being reactivated
Number of unmetered connections	-30%	Investment in new meters will lead to a decline in unmetered connections
Maintenance Costs	-10%	An investment in connections and power plant will reduce maintenance costs

Table 9: Example of Financial Projection Assumptions

Based on these assumptions, financial projections over the lifetime of the project can be made. The following is a template that can be used to compute the profitability of the water project in the investment period. The template has been populated with water revenue analysis sample data and random data on the expenditures and system performance. From the yearly financial projections, a net surplus figure can be determined for use in the computation of the final cash-flow analysis discussed earlier. Each year's net surplus figure is discounted based on the current market interest rate and summed to give the NPV of the project. IRR and Payback period are then computed. Table 10 below shows a template used to compute the NPV and IRR of a project using the surplus revenue generated. Points to note on the table are that the market interest rates are based on the current market interest rate and this should always be adjusted accordingly.

Year	Cash-flows (Ksh.)	Present Value (Ksh.)
0	(2,000,000.00)	(2,000,000.00)
1	(63,812.10)	(0.02)
2	47,260.91	39,058.60
3	365,301.32	365,301.32
4	765,181.69	270,671.75
5	1,408,019.22	1,408,019.22
6	2,477,963.90	2,477,963.90
7	4,175,231.41	4,175,231.41
Market Interest Rate	**10%**	
Net Present Value		**6,736,246.18**
Payback Period		**4 Years**
IRR	**30%**	

Table 10: NPV and IRR Calculation

d) Return on Investment (RoI)

This is a measure of profitability that evaluates the performance of a business. It is calculates by dividing the net profits by the total cost of the investment, expressed as a percentage. It is used to evaluate potential investments or the success of prior investments. RoI can therefore be used to compare the profitability of companies or to compare the efficiency of different investments.

RoI = (Net Profit/Cost of Investment) x 100

4.2.2 Owner Investment Approach

In this approach, the Lease Operator (LO) is responsible for managing the water project while only injecting minimal investments, with the bulk of heavy capital investment requirements being met by the water project owner. In this model, the LO does not accrue the surplus income but only charges fees which can be paid through the following options:

a. A fixed percentage of the gross turnover.
b. Negotiated lease fee.
c. A fixed percentage of the projected revenues and present audited accounts.

From a financial analytical perspective, the LO's main concern is improving on the management of the water project to yield enough revenue to meet their lease fees while improving on the project's performance. Therefore, the analysis key to the LO will mainly include the following:

a. Performance analysis
b. Cash-flow Analysis

The performance analysis will highlight areas of improvement for the project with the focus being on issues related to operational requirements of the project. The sample template provided earlier on performance analysis can be used to conduct this analysis. Areas identified for heavy capital injection will be invested upon by the project owners with the LO ensuring that the SDM has been implemented efficiently and effectively to improve on the performance.

Annexed, Financial Projections: Table 17 with LO model is a template highlighting the inclusion of a lease fee, with the assumption that it will be calculated based on a percentage of the projected surplus income.

Summary

While the SDMs can be analysed differently, the main take away from this section is that all the analysis will require assumptions for simulation purposes. Financial prudence is therefore key while generating the assumptions to avoid generating overambitious projections. A continuous assessment of the financial projections against the actual across the project period will be important for measuring the performance of the project, while identifying in the early stages, any changes in management strategy or additional capital investment requirements that may have risen over time for the project's performance to improve.

4.2.3 Risk Mitigation And Management

Risks should be allocated to the party which can minimize and manage the risk most effectively. Depending on the type of risk, this can be allocated to the CG or the private party with proper incentives. Where no party has a clear comparative advantage in managing the risks, they should be shared.

Ideally, there should be a balance of risks and penalties. The table below sets out an indicative allocation of risks for PS investment in water supply. Careful identification, analysis, and ranking of risks by an expert team before competitive tendering is key to best practice in risk mitigation and management. Risks should be carefully identified, analyzed and ranked. The CG & WUA with assistance from independent experts, can undertake this process. The information gained should be published as part of the tender process to allow the parties to devise and/or negotiate strategies to resolve or avoid the risks.

Customers buying water from a Water Kiosk

Tool 1: SDM Risk Management Framework

Type of Risk		Source of Risk	Possible Mitigation Approach	Risk taken By
Choice of PS Investor	Bidders not competent	Future water supply services supplied below standard	Pre-qualify interested bidders	County Governments
	Monopoly power in hands of PS High tariffs	A private operator could charge excessively	Identify monopoly risks, where appropriate unbundle vertically integrated utility	
	Cost of private provision too high.	PS must charge a politically unacceptable price to earn a normal rate of return	Prior to bidding process, undertake an evaluation of technical and economic feasibility of venture. Make bidding process transparent and quality information freely available	County Governments
	Difficulty in establishing true value of existing water supply value network	Contract price may not reflect assets true value	Government should avail an economic and technical assessment of the assets	
Design/Development Risk		Fault in tender specs	Use specialized consultants	County Governments
Construction Risk	Cost over-run penalties in contract	Inefficient work practices and wastage of materials	Select construction company with a proven record; include	Construction contractor
	Delay in completion including obtaining standard planning approvals	Lack of coordination of contractors, failure to include penalties in contract	Select construction company with a proven record;	Construction contractor
		Failure to grant contractual land use rights or rights of way powers	Ensure water supply operator/investor has sufficient rights and powers	Government
	Failure to meet performance criteria	Quality shortfall/defects in construction	Select construction company with a proven record; include penalties in contract	Government/contractor

Operating Risk	Raw/bulk water quantity	Poorly defined rights to water	Establish clear, legally enforceable water rights	County Governments
	Raw/bulk water quality.	Potential for pollution and salinity upstream	Prior implementation of an environmental impacts survey — government assurance to prohibit development activities in the headwater areas	County Governments
	Operating cost overrun	Unexpected breakdown	Duplicate critical components	PrivateOperator/investors
		Industrial relations — friction caused by staff	Introduce redundancy package and employment counselling.	Operator reductions
		Change to license conditions	Clearly specify rights and obligations under contract	Operator
	Interruption in operation	Operator fault	Rigorous training regime	Operator
		Interrupted electricity supply	Establish supply priority for water utility/install back up power	Operator plant
	Shortfall in service quality	Operator fault	Allow for short-term reduction in water quality standards	Operator
Revenue Risk				
	Increased operation costs	Increase in bulk water charges	Ensure regulated water pricing system allows all or partial pass on through of costs	Government/Private operator
	Bad debts Project	Non-payment by consumers	Advance estimate of probable scale of non-payment — if probability is high negotiate government subsidy	Government/Private operator
	Fall in revenue regulator provision	Increase in water charges not accepted by consumers	Better transparency of water charge revision procedures, make provision for arbitration	Government/operator
	Lower than expected demand	Incorrect demand forecast	Ensure an objective forecast by a third party is made prior to investment	Operator/Investors
Financial Risk				

	Exchange rates	Exchange rate fluctuations	Hedging or pass on through in water charges	Operator/Investors or Government
	Interest rates	Fluctuations	Hedging and/or pass on through water charges	Operator/Investors/ Government
Political Risks				
	Political interference	Cancellation of license	Clearly specify rights and obligations under contract	Government/Operator
Institutional /Legal Risks				
		Complex Government bureaucracy	Clarification of institutional arrangements; assurance of government assistance; establishment of a regulator	Government
	Legal Risks	Contract dispute	Contract should clearly specify methods for arbitration and dispute resolution	Operator/Government
Environmental Risks		Site remediation, pollution/discharge	Ensure environmental regulations are well specified and transparent	Operator/Government
		Pre-existing liability	Clearly define and where possible quantify pre-existing liabilities	Government

Source: Based on best practice models and examples in reports such as World Bank (1997) and APEC Economic Committee (1996) and ESCAP 1997, Idelovitch and Ringskog (1995) and ECFA (1997)

5.0 Procurement of Private Operator

The CG will need to consider how it is going to procure the private entity for the project. As stipulated in the Public Procurement and Asset Disposal Act (PPOA) 2015, the procurement must be competitive. For rural projects, if no operator financing is involved, this process should be kept as simple as possible. Similar to traditional public procurement, it is important for bidders to be assured that the process is transparent, clear and fair before they spend resources on preparing a bid. This is also important for the counties, as the procuring entity, to achieve value for money for the project being undertaken.

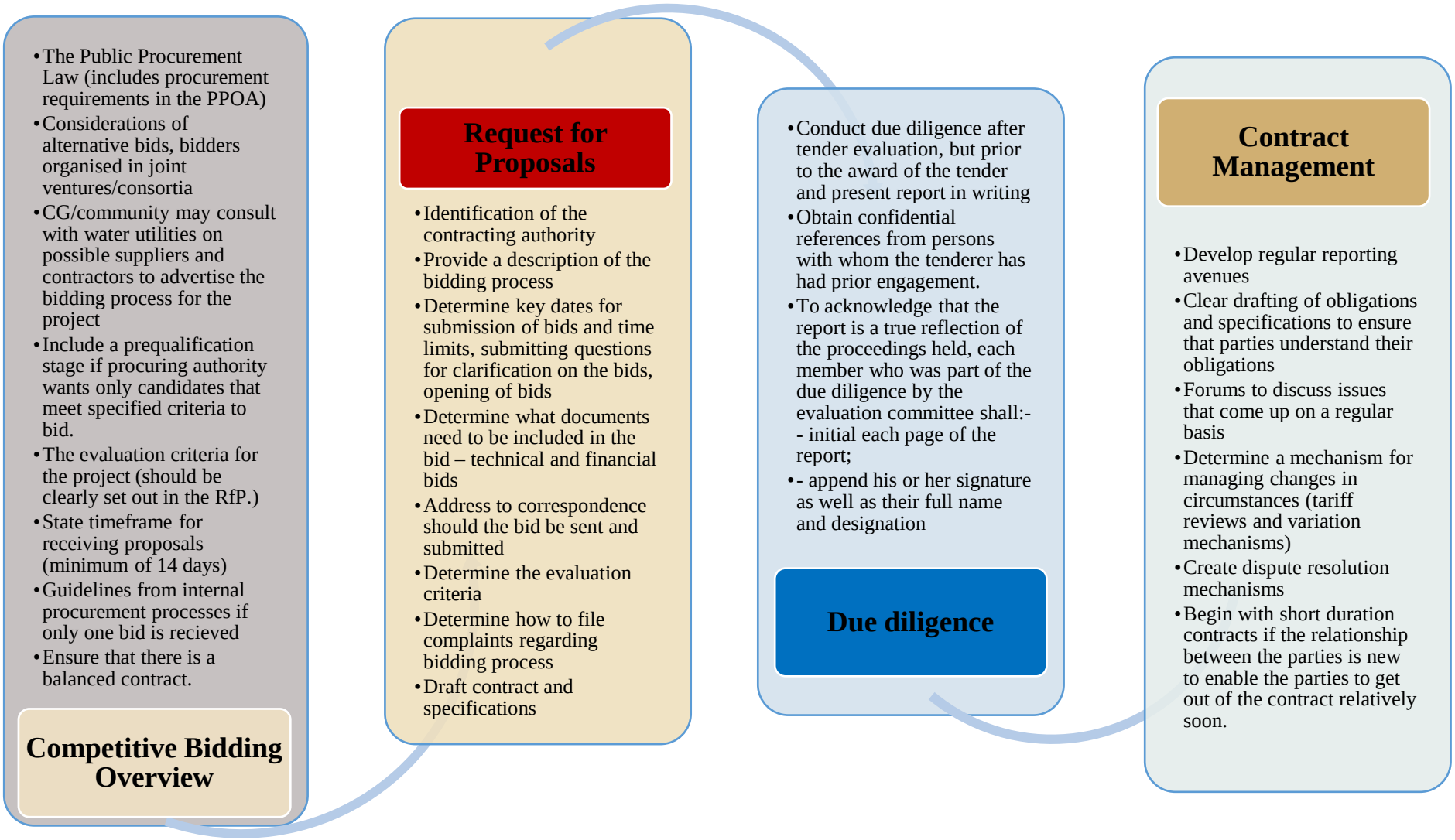
5.1 Contractual Provisions and Implied Terms

It is necessary for contracts to have clear drafting, performance specifications and targets. This is particularly important in smaller water projects where the parties may have limited capacity and have to live along-side each other, in order to limit the risk of misunderstandings, dissatisfaction and disputes. It is also important to establish mechanisms for day to day project management and information exchange between the parties and dispute resolution mechanisms that can resolve issues before they escalate.

5.2 Contract Management

In most rural projects there is a close interface between the operator, the CG/institution and the users. The operator is delivering a public service and it is important that he or she is monitored and managed. There are mechanisms that can be built into the contract to help with this monitoring and management. The contract is unlikely to anticipate every circumstance that may arise and in some cases it will be necessary for the parties to renegotiate the contract.

Tool 2: The contracting process (key considerations)



6.0 Monitoring and Evaluation

The following qualitative parameters have been identified for evaluating the performance of the water projects:

Coverage

- Percentage of households/population with access
- Point sources: within a certain distance

Connections

Based on number of households with connections

Operations and Maintenance

- Accomplishment of routine and periodic maintenance tasks according to schedule
- Response time to repair breakdowns
- Types, number and cost of repairs
- Types, number and cost of spare parts replacements

Financial Issues

- Does established tariff level cover recurrent administrative and operations and maintenance costs, major repairs and system rehabilitation and expansion?
- Cost recovery: amount of tariff arrears, percentage of consumers who have paid
- Is there a positive cash flow? Account balance? Is this sufficient to cover major repairs?
- Maintenance of bank account, financial records
- Is there an audit mechanism? If so, when was the last audit and what were the results?

Consumer Relations

- Time for collecting user fees
- Responsiveness to complaints and inquiries
- Customer satisfaction (from surveys)
- Periodic reports to the community

Indicator	Norm	Unit	Formula	Definition	Rationale	Remarks
Quality of Water supplied	-	As per WASREB standard norms	=[(No of samples that meet the specified potable water standards in a month/Total no of water samples in a month)*100]	% of water samples that meet or exceed the specified potable water standards	Poor water quality is a health hazard. Its highly critical to monitor the quality of the water supplied	Samples should be drawn from both points- Outlets at the treatment plant and at customer's end All parameters of quality standards should be met
Frequency of water supply	Hours per day	24 hours	= Average no of hours of pressurized water supply per day	The number of hours in a day during which pressurized water is available	Intermittent supply results in the need for individual households to seek for alternative water sources or invest in additional storage	The number of hours of supply in each of the operational zones should be measured continuously for a period of 7 days.
Water treatment plant capacity	%	100%	=[(Quality of bulk water supply/Installed capacity of the WTP)*100]	Installed capacity of water treatment plant to treat bulk water supplied for treatment	Indicates if the installed capacity is adequate to treat the bulk water supplied	If the installed capacity is less than the bulk supply, a check on water quality standards is essential to check if there is any deterioration in the quality of treated water.
Water treatment loss	%	2-3%	=[((1- quantity of water discharged from WTP)/quantity of water received at WTP))*100]	The quantum of water that is lost at the time of treatment on account of technical issues	Indicates if the technology of equipment used for treatment procedure are operating efficiently and result in only acceptable levels of loss	Loss levels beyond acceptable limits indicate either obsolete equipment being used or operational inefficiency

Non-revenue water(NRW)	%	20%	=[((Total water produced and put into the transmission and distribution system-Total water sold)/Total water produced and put into the transmission and distribution system))*100]	Extent of water produced which does not earn the community project revenue	Reduction of NRW levels is vital for the financial sustainability of the community project.	Only treated water input into the distribution system to be included Water sold implies actual volumes of water supplied to customers In the absence of a functionally effective metering, alternate methods of measuring are needed
Cost Recovery in water supply services	%	100%	=[(Total annual operating revenues/Total annual operating expenses)*100]	Total operating revenues expressed as percentages of total operating expenses incurred in the corresponding time period	Provides basis for tariff fixation, enables setting targets for revenue mobilisation, and delivery of water supply services	Operating expenses include charges on electricity, chemicals, staff, bulk water purchase costs etc. Revenues may be in the form of surcharges, user charges, connection charges, sale of bulk water etc.
Collection efficiency	%	100%	=[(Current revenues collected in the given year/ Total operating revenues billed during the given year)*100]	Efficiency in allocation is the current year's revenue collected, expressed as a percentage of the total operating revenues, for the corresponding time period.	Indicates the extent of operational efficiency present in the system and makes note of the extent in arrears	Collection of arrears to be excluded

Table 11: Qualitative performance assessment of water utilities

7. Annexes

7.1 Expression of Interest (EOI) form for Private Entrepreneurs

A. Letter of Application

(To be submitted with EOI Application by Applicant (Lead Member in the case of Consortium)

The Chief Executive Officer,

(Enter name of WUA)

.....

Attn: .....

Tele: .....

SUBJECT: EXPRESSION OF INTEREST (EOI) FOR PRIVATE ENTERPRENEUR FOR..... WATER POINT ON PRIVATE PUBLIC PARTNERSHIP [PPP] BASIS

With reference to the above invitation for Expression of Interest (EOI), we have examined and understood the instructions, terms and conditions provided in Invitation for EOI. We hereby enclose our EOI Application in the prescribed format as mentioned in the Invitation for EOI.

We confirm that we agree with the instructions, terms and conditions provided in Invitation for EOI. The undersigned declares that the statements made and the information provided in the duly completed application is complete, true, and correct in every detail. We also understand that .....County is not bound to accept the offer either in part or in full. If the County rejects the offer in full or in part, it may do so without assigning any reasons thereof.

Yours faithfully,

Authorized Signatory (of Lead Member in case of Consortium/Joint Venture)

(Name & Designation)

Date:

Place:

B. Expression of Interest (EOI)

Expression of Interest for Private Entrepreneurs to Manage Community Water Points on Private Public Partnership [PPP] Basis

EOI Application for..... Water Point..... County

Background Information

1. Name and Legal Status of Applicant:

Name of Applicant (Lead Member in the case of Consortium).....

Legal Status of Applicant (Natural Person/Company/Non-Profit Trust/ Society/ Any Other Specify).....

2. Contact Details of Applicant (Lead Member in Case of Consortium):

Name of the Authorized Contact Person ……

Postal Address ……

Telephone …….

Mobile No ……

Email …….

3. Business Organization

Please specify whether Sole Proprietor, Partnership, Association, CBO, Welfare Group or Company:

If Partnership, please name partners and details of shareholding.

4. Registration

Registration certificate No……..

Date of registration:

5. Financial Status

CAPITAL	
SOURCE OF FUNDING	

Technical Information

6. Capability of Team

Details of the Team available /Project managers. Also avail CVs and Certificates

7. Briefly, Explain How You Will Approach the Following Concepts Which Are Important In the Management of Community Water Points;

a) Gender and community engagement plan

b) Product/service/operations innovations

c) Risk management and insurance plan

d) Conflict of interest avoidance plan

e) Quality management plan

f) Reliability of services plan

g) Control of water losses plan

h) Revenue collection efficiency plan

i) Control of overheads plan.

j) Financial Accountability

k) Expansion of services to un-served areas

8. Description of any similar work performed

7.2 Case Studies of SDMs in Kenya

Lease Operator Model

Kakamega – Navakholo Water Project

Consumers buying water at a water Kiosk in Navakholo Water Supply

Life in Navakholo has never been the same since Kakamega County Water and Sanitation Company (KACWASCO), a medium-sized water service provider, expanded its services as the LO (who is the lessee in the lease contract) to this rural community on the periphery of Kakamega, a town in Western Kenya. In this case, the WUA is the lessor as per contractual agreement.

The LO pays the WUA a fee of 7% of the audited net profit accounts according to the lease contract that spans over a period of 5 years. Since the provider started supplying clean, good quality and reliable water, their incomes have increased two-fold, productivity has increased, health has improved and the burden on women and children, the usual water bearers, has decreased, increasing overall wellbeing.

Impressed with the success of Navokholo, Kakamega County is looking to introduce the model to five other rural communities. Neighbouring Bungoma County has expressed interest too, a sure indicator that engaging the PS in water service delivery for underserved populations is indeed sustainable.

The performance of the project with the lease operator management on selected key indicators is presented as below:

- Year of Incorporation- 1992
- Project Cost – Ksh. 8.6 million
- Population served – 11,691
- Average Revenues collected – Ksh. 171,229
- Non- Revenue Water (NRW) improvements – Reduced from 60% - 55%

Private Operator Model

Kisumu – Wandiege Water Project

Wandiege Water and Sanitation Company is located within the informal settlement of Manyatta 'B' in Kisumu County, started as a Community Based Water and a Sanitation Project in 2001.

In 2001, Wandiege received funds from SANA to expand its water system installing a bulk water supply system from Kisumu Water and Sewerage Company constructing two 75m^3 elevated steel tanks. In 2013, Wandiege expressed interest in professionalizing its management and with the assistance of Lake Victoria South Water Services Board procured a local private operator (Lobonyo and Associates) on a 3-year contract to manage the project. Lobonya has demonstrated professional and commercial management practices at Wandiege increased water connections, revenue collection and reduced NRW. Wandiege's performance under Labonyo is highlighted using selected KPIs between 2014 and 2016 below:

- No. of people served increased from 10,000 in 2012 to 11,845 in 2016
- No. of pipeline breakdowns has reduced from an average of 7 to nil
- Hours of supply improved from 16 hrs per day to 20 hrs.
- O&M cost coverage increased from 119% to 126%

Lobonyo and Associates receives on a monthly basis, a payment equivalent to 40% of the total revenue collected, which is also inclusive of O&M costs cost incurred on services delivery. Additionally, the operator is entitled to an incentive for improved performance and incurs penalties for underachievement.

Kanyadhiang water supply project commercial office

Homa Bay- Kanyadhiang Water Project

Kanyadhiang Water Supply Project is located in Homa Bay County and was constructed from 2008-2010 with financial contribution from the Government of the Netherlands, United Nations Children's Fund (UNICEF) and the WSTF. It commenced operations in 2010 registered as a community based organization, but encountered operational challenges that led to its non-functionality.

In 2014 the community engaged a local private operator (Breinscope) to manage its daily operations and provide water to consumers on user-pay basis. Breinscope has demonstrated professional and commercial management practices and increased water connections, revenue collection and reduced NRW. Kanyadhiang's performance under Breinscope is highlighted using selected KPIs between 2014 and 2016 below:

- No. of people served increased from 9000 in 2012 to 12190 in April 2016;
- Monthly revenue collection has increased three fold to Ksh. 103,370;
- Hours of supply improved from no supply to 8 hrs per day;
- NRW reduced from 60% to 55%;

Breinscope receives on a monthly basis, a payment equivalent to 40% of the total revenue collected, which is also inclusive of O&M costs incurred on service delivery.

Delegated Management Model

Kisumu Water and Sewerage Company (KIWASCO)

In Kisumu, KIWASCO sells bulk water to agents contracted to operate and manage part of the network in an informal settlement. KIWASCO selects and recruits these sub-network agents (MOs), through a publicly-advertised and competitive process. The MOs (in the capacity of private entrepreneurs or community-based organizations (CBOs) enter into a contract with the utility to bill customers, collect revenue and perform minor maintenance in a given area. Having paid the utility a bulk rate for consumption, master operators can retain any surplus revenue.

The performance of the project (company operating under commercial law and wholly owned by the municipality) on selected KPIs is presented as below:

- Year of Incorporation - 2003
- Project Cost - Annual production 6.5 million m^3 and annual production per capita 15.29 m^3
- No. of Connections served - 4,914 (sewerage) and 7,852 (water). Population living in informal settlements 60% (or 255,000 people), coverage level is 36%.
- Non-Revenue Water (NRW) improvements - 67%

Professional Management Model

Nandi – Tachassis Water Project

Tachassis water project is located in Tinderet sub-county, Nandi County. It sources its water from Ainapngetuny River, a tributary of Chebangang River and Koikener River and distributes it through gravity. The project was started in 1994 by the Catholic Diocese of Eldoret and was initially registered as a Self Help Group

In 2013, the project embarked on professionalising its management. The CBO changed its status to water company and managed by TACHWACO. The WUA up-graded to a Board of Directors. Corporate governance training was done by WASREB & Lake Victoria South Water Services Board. The company has 8 staff who are all professionally qualified including a Technical Manager. The PM has developed a Human Resource, Financial, Procurement, Water quality management and metering policy towards professionalization and engaging as per the water sector guidelines. Tachassis's performance is highlighted using selected KPIs between 2014 and 2016 below:

- No. of people served increased from 7,250 in 2013 to 13,186 in 2016
- Revenue base per month increased from 117,000 to 198,369
- O&M cost coverage increased to 88%
- Non-revenue water has decreased from 51% in 2013 to 30 % in 2016
- Water quality tests have since been introduced and now done on a monthly basis with a target to test weekly

Some of the project staff of the Tachassis project

7.3 Financial Performance Templates and Business Plans

Six-Month Performance Analysis

	Unit	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	% **Performance change**
System Performance								
Water Produced	m^3							
Total Water Metered	m^3							
NRW	%							
Population in Service Area	No							
Population Served	No							
Potential New Customers	No							
Total No of Connections	No							
No of Metered Connections	No							
Expected New Meters	No							
Operating Expenses								
Total Expenses	Ksh							
Actual Revenue								
No. of Metered Connections	No							
Rate per Meter	Ksh							
Expected Revenue from Metered Connections	Ksh							
Actual Revenue Collected (sales)	Ksh							
Collection Efficiency	%							
Net Surplus/ (deficit)	Ksh							

Table 12: 6-month Performance Analysis

Capital Requirements Analysis

Description	**Sub-cost**	**Total Cost**	**Priority Level**
Land Acquisition **(L)**		**x**	
New Water Supply Costs			
Storage Tanks		x	
Installation/Upgrade of Power Supply systems		x	
Connection Pipes:			
No. of Population in Service Area **(P)**	x		
Current Population Served **(Y)**	x		
Expected New Connections **(W)** {**P-Y}**	x		
Cost of Connection Pipe per Meter **(K)**	x		
Labour **(R)**	x		
Total Cost of Connection Pipes **(M){K*W + R**}		**x**	
Existing Water Supply Costs Capital			
Replacement of broken meters **(A)**	x		
Repair of broken tanks **(B)**	x		
Repair of broken connection pipes **(C)**	x		
Labour **(D)**	x		
Total Repair Costs **(T){A+B+C+D}**		**x**	
Total Capital Required (**TC){L+M+T}**		x	
Interest on Capital **(I)**{Assume Current Market I.R}		x	
Total Capital {**TC + I}**		x	

Table 13: Capital Requirements Analysis

Financial Performance of Water Project

PAST YEAR FINANCIAL PERFORMANCE		**6 month period**
System Performance		
Water Produced	m^3	
Total Water Metered	m^3	
NRW	%	
Population in Service Area	No	
Percentage Population Served	%	
Population Served	No	
Service Quality		
Average Hrs of Supply	hrs/day	
No. of complaints	No/month	
No. of Breakdowns (monthly)	No/month	
Avg. response time	days	
No. of metered Active connections	No	
No. of unmetered connections	No	
No. of Kiosk connections	No	
Billed Accounts (All- Active and Inactive)	No	
Percentage of Dormant Accounts	%	
No. of Dormant Accounts	No	
Operating Expenses		
Admin	Ksh	
Salaries		
Power for Production	Ksh	
Chemicals	Ksh	
Maintenance	Ksh	
Other Expenses		
Loan Repayment	Ksh	
Licences(e.g. NEMA)		
Total Expenses	Ksh	
Billed Income		
Water Use	Ksh	
Service Charges (Application & Connection Fee, Meter Rent etc.)	Ksh	
Outstanding Arrears		
Expected Revenue	Ksh	
Actual Revenue		
Amount Collected from Billed Water	Ksh	
Arrears		
Water Kiosk Sales		
All others		-
Total Actual revenues collected		
Collection Efficiency	%	
Net Surplus/ (deficit)	Ksh	

Table 14: Financial Performance of Water Project

Water Revenue Analysis Template

Sales from Metered Connections	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
No. of Connections							
Flat rate per meter							
Total Sales							
Sales from kiosks							
No. of Kiosks							
Ave. no. of Jericans sold per Day							
Cost per Jerican							
No. of Days per month							
Total Kiosk Sales							
Total Water Sales							
Other Revenue							
Penalties on arrears							
Establishment of Meter							
Total Revenue							

Table 15: Water Revenue Analysis Template

Financial Projections Sample Template

Sample Template Financial Projections for a 7-year Water Investment Project (Applicable to all SDMs except Lease Operator)

		Project's Investment Timeline						
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
System Performance								
Water Produced	m^3							
Total Water Metered	m^3							
NRW	%							
Population in Service Area	No							
Percentage Population Served	%							
Population Served	No							
Service Quality								
Average Hrs of Supply	hrs/day							
No. of complaints	No/month							
No. of Breakdowns (monthly)	No/month							
Avg. response time	days							
No. of metered Active connections	No							
No. of unmetered connections	No							
No. of Kiosk connections	No							
Billed Accounts (All- Active and Inactive)	No							
Percentage of Dormant Accounts	%							
No. of Dormant Accounts	No							
Operating Expenses								
Admin	Ksh							

Salaries								
Power for Production	Ksh							
Chemicals	Ksh							
Maintenance	Ksh							
Other Expenses								
Loan Repayment	Ksh							
Licences(e.g. NEMA)								
Total Expenses	Ksh							
Billed Income								
Water Use	Ksh							
Service Charges (Application & Connection Fee, Meter Rent etc.)	Ksh							
Outstanding Arrears								
Expected Revenue	Ksh							
Actual Revenue								
Amount Collected from Billed Water	Ksh							
Arrears								
Water Kiosk Sales	Ksh							
All others								
Total Actual revenues collected	Ksh							
Collection Efficiency	%							
Net Surplus/ (deficit)	Ksh							

Table 16: Financial Projections Sample Template

Financial Projections with LO Model

		Project's Investment Timeline						
		Jan-Dec 2018	**Jan-Dec 2019**	**Jan-Dec 2020**	**Jan-Dec 2021**	**Jan-Dec 2022**	**Jan-Dec 2023**	**Jan-Dec 2024**
System Performance								
Water Produced	m^3							
Total Water Metered	m^3							
NRW	%							
Population in Service Area	No							
Percentage Population Served	%							
Population Served	No							
Service Quality								
Average Hrs of Supply	hrs/day							
No. of complaints	No/month							
No. of Breakdowns (monthly)	No/month							
Avg. response time	days							
No. of metered Active connections	No							
No. of unmetered connections	No							
No. of Kiosk connections	No							
Billed Accounts (All- Active and Inactive)	No							
Percentage of Dormant Accounts	%							
No. of Dormant Accounts	No							
Operating Expenses								

Admin	Ksh							
Salaries								
Power for Production	Ksh							
Chemicals	Ksh							
Maintenance	Ksh							
Other Expenses								
Loan Repayment	Ksh							
Licences (e.g. NEMA)								
Total Expenses	Ksh							
Billed Income								
Water Use	Ksh							
Service Charges	Ksh							
Outstanding Arrears								
Expected Revenue	Ksh							
Actual Revenue								
Amount Collected from Billed Water	Ksh							
Water Kiosk Sales	Ksh							
All others								
Total Actual revenues collected	Ksh							
Collection Efficiency	%							
Lease Operator's Fixed Fee Percentage	**%**							
Lease Operator's Fee	Ksh							
Net Surplus/ (deficit)	Ksh							

Table 17: Financial Projections with an LO Model

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