

Republic of Rwanda



Rulindo District

DRAFT

RULINDO DISTRICT FULL LIFE CYCLE WASH INVESTMENT PLAN

Supported by:



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1. Introduction

Known as the “land of a thousand hills and ten million smiles,” Rwanda is a small landlocked country, located in east-central Africa, it is bordered by Uganda at the north, Burundi at the south, the Democratic Republic of Congo at west and Tanzania at east. Home to approximately 10.5 million people, Rwanda supports the densest population in continental Africa, most of who engage in subsistence agriculture. A high elevation country, the region has mountains in the west and savannah in the east. The three official languages in Rwanda are Kinyarwanda, French and English. Rwanda has abundant rainfall but lacks necessary storage, collection, catchment and/or distribution systems to provide an adequate level of water service to the population, particularly in rural areas. According to the Ministry of Finance and Economic planning, 80% of illnesses afflicting Rwandans are waterborne and the average distance traveled acquires safe water is 0.5 kilometers (Final Water System Design Review Report Rulindo district, Rwanda 2013).

Over the past decades, Rwanda as made progress in the delivery of water supply and sanitation. According to the Joint Monitoring Program (JMP), 58% of the population of Rwanda had access to at least a basic drinking water and 67% to at least a basic sanitation service in 2017.

Although these figures reflect progress over the past decades, achieving the ambitious targets set by the Government of Rwanda (GoR) of reaching universal access to basic water supply and sanitation by 2024 and to safely managed services by 2030 will require addressing critical systemic issues, which include:

- Inadequate access to finance for decentralized actors.
- Human resource capacity gaps in areas of planning, project management and operation and maintenance.
- Insufficient operation and maintenance of rural and water systems.
- Depleting water resources resulting in high costs of service provision.

In response to these challenges, the GoR has committed in 2016 to trialing the District-Wide Approach (DWA). The DWA seeks to provide systemic support to districts in their WASH service authority functions, whilst also recognizing the need for a strong supportive enabling environment at national level. The DWA focuses on the district as the geographical entry point and consists in working towards the desired outcome of the district having the systems, plans, finances, human resources, skills, knowledge, coordination and accountability mechanisms to achieve sustainable universal access.

The approach has since been piloted in Rulindo, Gicumbi, Bugesera, Karongi, Ngororero, Nyamagabe, with the support of Water for People, WaterAid and WASAC. In all of these districts, efforts have been geared towards strengthening districts and collaboratively developing fully

costed Full Life Cycle WASH Plans, articulating a clear district-wide vision for the provision and maintenance of WASH services.

A district Full Life Cycle WASH Plan is the output of a process, which seeks to match an objective with financial resources, The objective is to provide universal access to services to all and forever in a given district and to cover these costs with all district resources available (tariffs, taxes and transfers, otherwise known as the “3 Ts”).

In practice, this translates in the consideration of all costs involved in providing services that last (i.e. not just capital costs, but long-term costs of operating and maintaining services, as well as supporting their delivery).

In 2010, a partnership between the district of Rulindo, Rwanda’s Ministry of Infrastructure (MININFRA), the Water and Sanitation Corporation (WASAC Ltd.), and Water For People launched the Rulindo Challenge Program – an ambitious plan to bring full water and sanitation coverage to Rulindo. At that point, less than one-third of the district population had access to clean water.

The inception of the Rulindo Challenge Program marked the beginning of a new journey and a new philosophy: The Everyone Forever.

To achieve these ambitious goals, the Rulindo Challenge Program has the following objectives:

- Bring full coverage (100%) in water to the District of Rulindo by December 2018, with the support of and in collaboration with the Parties.
- Recognizing that all Parties have a financial stake in this endeavor, ensure that all Parties (i.e., government, communities and Water For People) allocate financial resources to achieve full coverage.
- Conduct joint factfinding exercises to map existing and potential water systems and clarify current service statistics, as well as the functionality of existing water and services in the District. This establishes a baseline and clarifies what needs to be done to reach full coverage.
- Determine the number and extent of projects needed to allow the District of Rulindo to reach full water coverage. Develop clear implementation plans designed to increase coverage in the District strategically and lay the foundation for full coverage.
- Gain knowledge and a better understanding of the barriers and constraints affecting water services, as well as the management and maintenance of water facilities in the District of Rulindo, strengthen the District’s capacity to address such barriers in partnership with other sector actors, and share information with other stakeholders.
- Develop a comprehensive water supply strategy that does not simply focus on water point construction, but more importantly includes water point management and development

of efficient systems so that outcomes achieved are sustained well after program completion.

- Build the capacity of communities, households and public institutions to provide water and sanitation services and the effective management and maintenance of water facilities in the District.
- Agree on meaningful monitoring and evaluation strategies, with quantifiable indicators, to assess water and sanitation facilities, their sustainability and management efficiency, and to demonstrate impact. Use the strategies developed to monitor project progresses over time and develop a live database of water systems and their functionality that will be incorporated into Water For People's global monitoring system that will be made available to all Parties.
- Implement Sanitation as a Business to build the systems and structures necessary to ensure improved sanitation at the community and public institution level, by supporting sanitation entrepreneurs and creating sanitation demand
- Sustain frank and courageous conversations with the national and local governments, private sector and civil societies to stimulate new ways of thinking about what is needed to build and sustain the water and sanitation systems and the supporting environment to eliminate water and sanitation poverty in the District of Rulindo.

To ensure a truly sustainable model, these costs have been and will continue were shared among Water For People, The Ministry of Infrastructure, and Rulindo District.

For water infrastructure and associated capacity building activities, the costs are shared as follows:

- Water For People: 55%
- Ministry of Infrastructure: 30%
- Rulindo District (on behalf of communities): 15%

For sanitation and rainwater harvesting infrastructure and capacity building activities at schools and clinics, the costs are shared as follows:

- Water For People: 80%
- Schools 20% (Rainwater harvesting and sanitation)
- Clinics 20% (Rainwater harvesting)

Under the Rulindo Challenge Program, the following has been achieved:

- 46 piped systems (14 motorized and 32 gravity-fed water supply systems) were built, rehabilitated and extended in all 17 sectors, serving 269,247 people, 56 schools, and 13 health care facilities;

- 85 schools and 2 health care facilities were supported with rainwater harvesting systems, with rainwater mainly being used for cleaning purposes;
- 59 schools were supported with eco-toilets, and schools use human manure and urine as soil conditioner in the school gardens. Some schools sell human manure and urine to the neighbor households for use in their farms;
- 494 Community Health Clubs were established and trained in all villages. Health clubs help communities in hygiene education and improvement of sanitation facilities in their respective communities;
- 919 Water Users' Committees (WUCs) were established and trained to manage water systems and community water points. WUCs oversee the management of water systems and report their complaints to the district and service provider;

In addition to these infrastructures the Rulindo Challenge Program also implemented a wider range of activities related to sustainability, those included establishment of a District WASH Board aimed at following if WASH services are provided to the communities in an efficient way, hiring and training two private operators and training communities benefitting from water services in AtWhatCost, a tool used to analyze the viability of water systems based on the set tariff, to explain the tariff to water users, and to make decisions, setting up water users committee and community health clubs that will help to ensure that water supply service at community are provided timely by the private operators and hygiene messages are provided at village level respectively, development of water resources management plan for the protection of the water sources and catchments to ensure water sources recharge and to avoid their pollution from human activities and finally putting in place customer feedback to ensure population are able to provide their complaints to the service authority on the WASH service delivery they are receiving.

One of the biggest gap under the Rulindo Challenge Program Implementation was that the program only focused on infrastructure development and did not look at the capital replacement of the already constructed infrastructure under poor or nonfunctional condition nor plan for the future capital replacement of the constructed ones based on their lifetime.

The Rulindo Challenge Program did not also look at all the full life cycle cost even some of the cost were covered like Operating Expenditures covered by the private operators, Direct Support costs covered both the Districts and development partners and some of the immediate water sources management measures implemented as part of the water supply infrastructure development.

This document is going to reflect and indicates the full life cycle costing as assessed by Rulindo District in collaboration with partners in the Rulindo Challenge Program namely MININFRA, WASAC and Water For People using the approach and the tools developed under the DWA pilot

phase, the current full life cycle costing plan will cover a period of 10 years from 2020 to 2030 and will be a good foundation for the district’s roadmap to reach SDG6 goal.

2. Rulindo District Profile

Rulindo District is located in the Northern province of Rwanda and is bordering with Gakenke, Burera District in the North, the City of Kigali and kamonyi District on the South, Gicumbi District on the Eastern side and finally Gakenke District in the West. The District has 17 administrative Sectors: Base, Burega, Bushoki, Buyoga, Cyinzuzi, Cyungo, Kinihira, Kisaro, Masoro, Mbogo, Murambi, Ngoma, Ntarabana, Rukozo, Rusiga, Shyorongi, Tumba. These sectors are subdivided into 71 Cells and 494 Villages (Imidugudu). The surface area of Rulindo District is 567 km². As per the 2012 Population and Housing Census Provisional Results, Rulindo District has a total population of 288,452. Like in most of other districts, the female composition in Rulindo district is more than male. As a matter of fact, out of a population of 288,452 in Rulindo district, 136,058 people are male and 152,392 female. The population density of 509 sq. km and an average Annual Growth Rate (2002-2012) of 1 % compared to the national annual growth rate of 3%. Figure 1 shows the administrative map of the district.

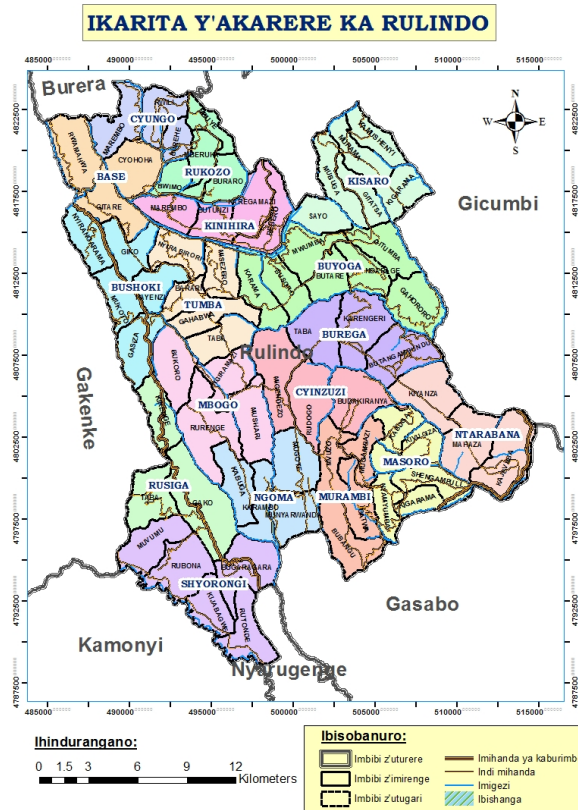


Figure 1: Administrative map of Rulindo District

3. Rulindo WASH Level of Service

As shown in Table 1, prior to the Program's initiation, only 28% of the Rulindo communities had access to high-quality water infrastructure, with 32% having no access at all, according to a 2012 baseline survey conducted by Water For People. The same baseline survey also showed that only 4% of households had access to high-quality sanitation infrastructure, and 34% of schools and health centers had high-quality Water, Sanitation, and Hygiene (WASH) infrastructure. The rest did not have access or had access to water and sanitation services that were not meeting standards. However, after eight years, the achievements are promising. In 2019, the survey showed that 82% of community water infrastructure provided a high-quality level of service, 59% of households have access to high-quality sanitation services, and 98% of schools and health centers have access to high-quality WASH services. This dramatic improvement was caused by investment in WASH infrastructure and sustainability-oriented activities.

Table 1: Survey Results for Baseline (2012) and Achievements (2019)

Indicator	Baseline in 2012			Achievements in 2019		
	Service Meeting Standards	Service not Meeting Standards	No Access to Improved Infrastructure	Service Meeting Standards	Service not Meeting Standards	No Access to Improved Infrastructure
Community Water Point Service	28%	40%	32%	82%	17%	1%
Household Sanitation Service	4%	94%	2%	59%	40%	1%
WASH service in schools	34%	31%	35%	98%	2%	0%

Source: Adapted from different Water For People survey results (2012, 2019)

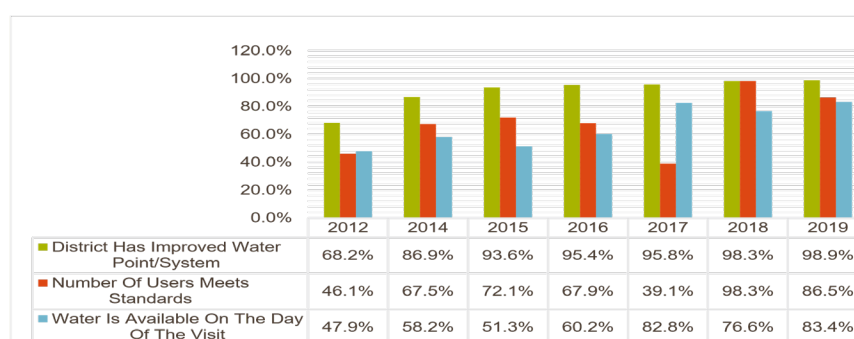


Figure 2: Trend of Water Service Levels in Communities since 2012

3.1. Progress of Water Services at the Household Level

The investment in water infrastructure development resulted in increased levels of water service in communities. Figure 2 shows the trend of water service indicators in Rulindo since 2012. It illustrates that access to improved water infrastructure increased from 60.9% to 98.9% from 2012 up to 2019. Other indicators that illustrate increased water service in Rulindo include

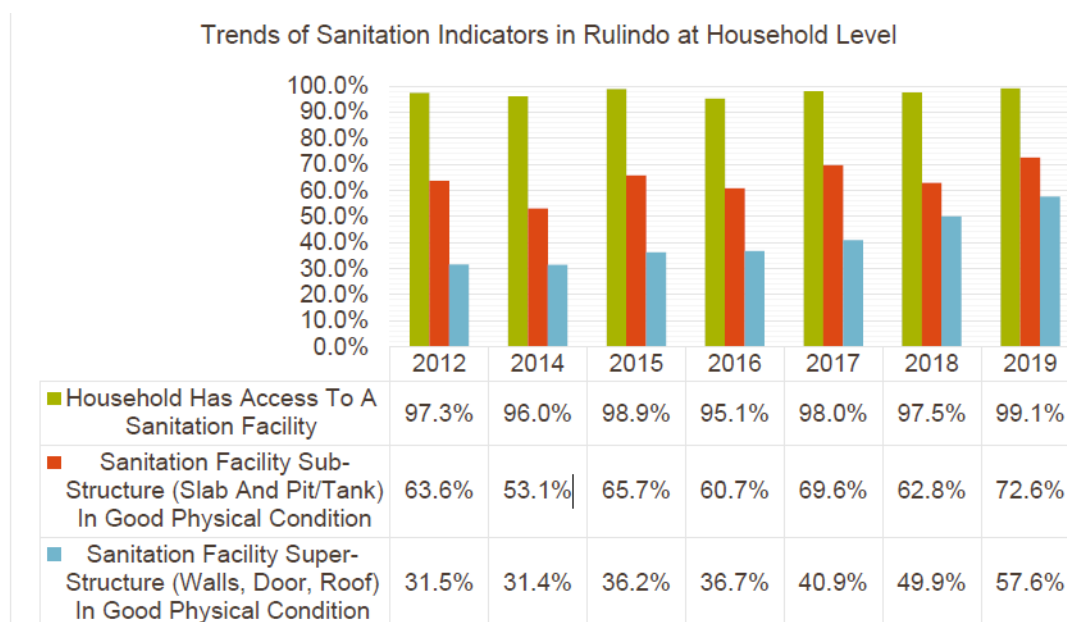
number of water users (which increased from 35% to 86.5%), water availability (which increased from 42.2% to 83.4%), and quantity of water (which increased from 9.4% to 76.6%).

This shows that Rulindo District has water infrastructure and management in place. However, there is a need to improve water services to be able to achieve the Sustainable Development Goal of ensuring availability and sustainable management of water for all by 2030.

To this end, the district decided to hire two private operators to manage all the water systems in all 17 sectors, instead of having multiple private operators to manage water systems using a cost based tariff and without taking care of the needs of water users. The two hired private operators were required to implement a rural water tariff set by Rwanda Utility Regulatory Authority (RURA).

3.2. Progress of Sanitation Services at the Household Level

Sanitation marketing and hygiene education resulted in an increase in the level of sanitation service in Rulindo District (illustrated in Graph 4). The three indicators include household access to sanitation facilities (which increased from 97.3% to 99.1%), status of sanitation sub-structure (which increased from 63.6% to 72.6%), and status of sanitation super-structure (which increased from 31.5% to 57.6%). This achievement is mainly due to the commitments and different initiatives of Rulindo District leadership and different sanitation initiatives launched, including hygiene campaigns and human security campaigns that targeted the improvement of hygienic conditions of toilets in the entire district.

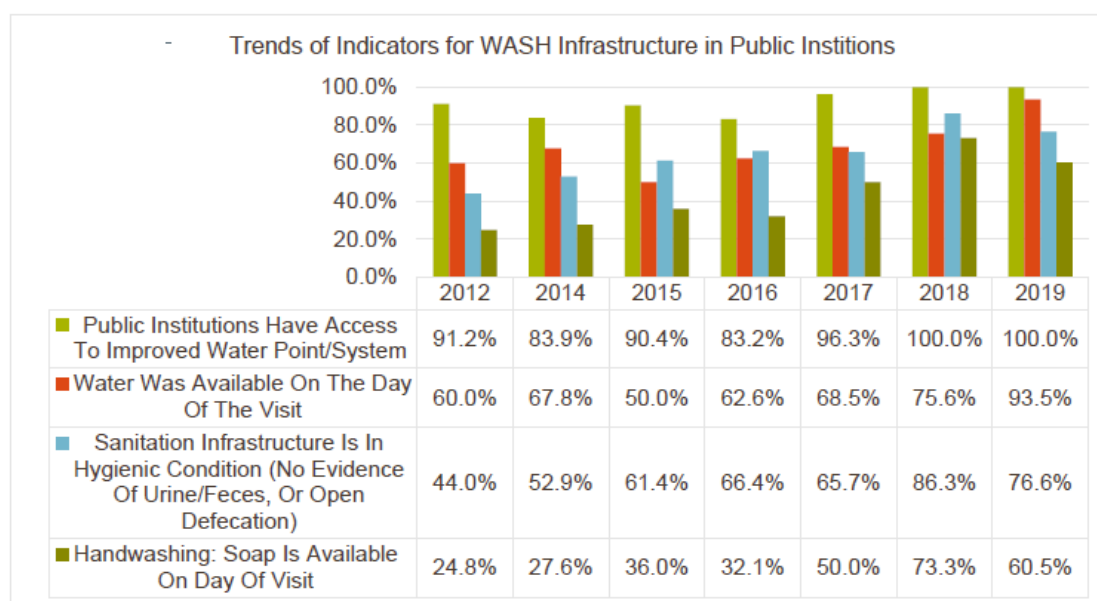


Source: Adapted from different Water For People survey results (2012-2019)

Figure 3: Trend of Sanitation Service Levels at Household Level since 2012

3.3. Progress of WASH Services in Public Institutions

In schools and health facilities, Graph 5 illustrates the status of WASH service indicators in public institutions (schools and health facilities). The district reached 100% access to improved water infrastructure in all public institutions. Other indicators include water availability (which increased from 60% to 93.5%), hygiene conditions of sanitation facilities (which increased from 44% to 76.6%), and availability of soap for handwashing in public institutions (which increased from 24.8% to 60.5%). This significant increase in the level of WASH services is attributed to the investments in schools and health facilities. Two indicators on hygiene, which are related to hygienic conditions of sanitation infrastructure and handwashing with soap, still need more efforts to ensure that all schools and health facilities adopt and practice hygiene best practices. As part of the Rulindo Challenge Program, schools and health centers were supported with safe drinking water, sanitation facilities, rainwater harvesting systems, and hygiene education. In addition, hygiene clubs in schools were established and trained. School Hygiene Clubs were supported throughout all schools to improve levels of sanitation, hygienic conditions at schools, and a clean environment.



Source: Adapted from different Water For People survey results (2012-2019)

Figure 4: Trend of Indicators for WASH Infrastructure in Public Institution Service Levels since 2012

In all schools, Water For People and the district introduced performance contracts based on operation and maintenance of water and sanitation infrastructure in schools. The performance contracts are evaluated every 6 months and best performing schools are rewarded. District of Rulindo, Water For People, and ORSD are involved in the evaluation of performance contracts and a rewarding ceremony of best performing schools. This initiative contributed significantly to the improvement of the level of WASH service in schools.

4. The District- Wide Approach

The WASH sector recognizes that piecemeal and project-based initiatives have not been successful at addressing systemic issues affecting WASH provision and that a fundamental shift in approach is required to achieve the ambitious SDG targets. This shift consists in moving away from fragmented initiatives and supporting harmonized approaches under a unified, government-led plan and strengthening all key building blocks that make up a strong WASH system.

Efforts need to be geared towards strengthening two key levels of the WASH sector: at central government level, a robust national framework is needed to create the conditions of success of the work at the district level. This includes having key policies and strategies, institutional capacities, financial resources and other general conditions that make up the enabling environment in place (e.g. adequate regulation, monitoring). At district level, the aim is to ensure district service authorities have systems, plans, finances, human resources, skills, knowledge, coordination and accountability mechanisms to fulfil their decentralized WASH mandates.

The District Wide Approach is the application of these principles, with a focus on the district level. It follows the usual steps of a programming cycle (assessing, planning, implementing and monitoring) to progressively strengthen all building blocks in a given district. Evidence gathered at the district level is used for advocacy at the national level to push for the model to be scaled.

In Rwanda, this approach is aligned with existing policies and strategies, including the National Sanitation Policy and Strategy and a National Water Supply Policy and Strategy (2016), which provide clear policy directions and strategic actions towards achieving the universal access targets and re-establish the principle of decentralization towards the districts.

Water supply vs. WASH focus of the DWA. The principles and steps of the DWA apply equally to the water, sanitation and hygiene sub-sectors which should ideally be treated jointly in a Full Life Cycle WASH Plan. However, in Rwanda, the process has been initiated with a bias towards water supply and is only progressively incorporating sanitation and hygiene components. This guide reflects this focus on water supply, with examples provided focused primarily on water supply. An additional chapter on sanitation and hygiene will be added into the guide in due time.

The activities associated with the DWA at district-level can be conceptualized into five stages, summarized below and represented in figure 5:

- **Introducing** the concept of system strengthening, the district-wide approach at district level, as well as at national level.

- **Assessing** current services, assets, institutional capacities to provide universal and sustainable WASH services in the district. Data generated through this phase serves as a baseline for developing the plan.
- **Planning** for universal and sustained WASH services, using evidence generated during the assessment phase. This includes developing a vision, clear targets and a strategy for implementation, costing the vision and identifying sources of funding.
- **Implementing** the plan through harmonized and collaborative efforts of all stakeholders (government, NGOs, private sector) with technical assistance provided as and when necessary. This requires identifying management models for the services to be provided/upgraded upfront, along with a strategy for long term sustainability (in terms of capacities, support and financial resources). The implementation of the plan takes place in a sequence and considers a prioritization process, which can be revisited over time (e.g. unserved vs. poorly served, new settlements, changes in demographic growth).
- **Monitoring** the implementation of the plan to track progress to targets, improvements in service levels, WASH practices of residents, fund allocation/ expenditure, water source yield/quality. Data collected should feed into wider sector monitoring systems and lead to corrective action where the data shows gaps or weaknesses.

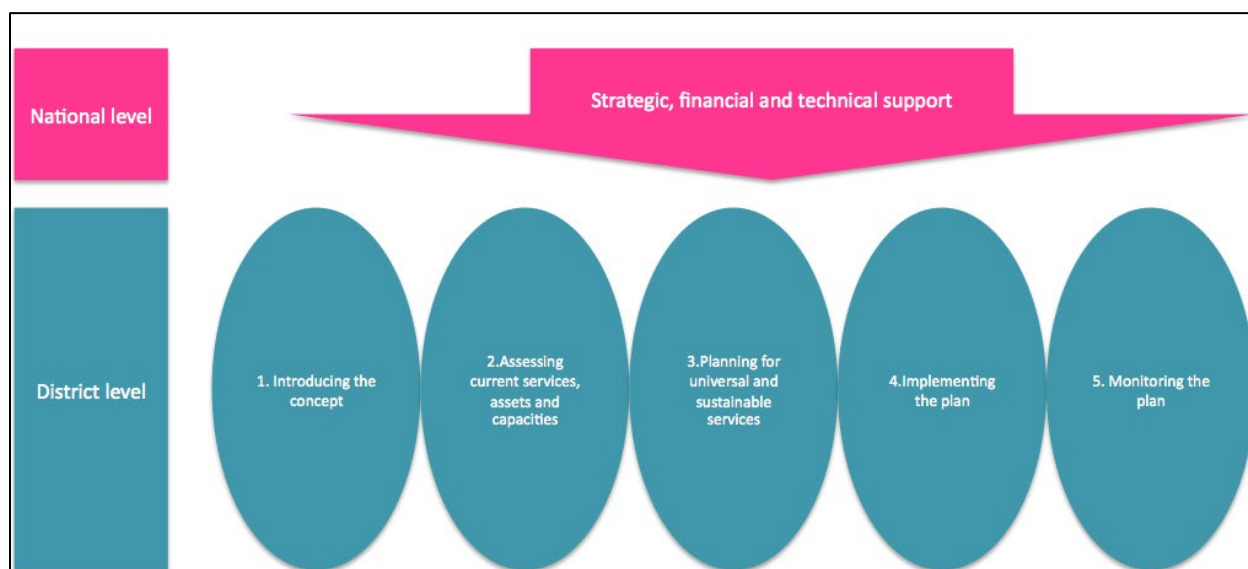


Figure 5: Key steps of the District- Wide Approach

5. District Full Life Cycle WASH Plan

5.1. Steps for Full Life Cycle Plan

Developing a full life cycle WASH Plan refers to the process, as well as an output- the plan itself, both of which support district-decision making and combine technical, strategic and consultative aspects.

- Technical: the plan is developed on the basis of evidence generated through data collection activities and technical studies.
- Strategic: the plan articulates a vision supported by district-level decision makers, which includes a long-term horizon and medium-term targets.
- Consultation of all parties (decision-makers as well as service providers and users) is part of the process to ensure needs and demands are understood and services provided are owned, used and adequately maintained.

The process of developing a Full Life Cycle WASH Plan is characterized by the following:

- A broad scope should be considered, to include all types of WASH services (water, sanitation and hygiene), considering both domestic services as well as services in public institutions (schools and health care facilities). The process can however consider one type of service and progressively be adjusted as more information becomes available, depending on the targets set. Similarly, this process should consider water resources at all the various stages (from an assessment to costing to planning).
- Different timescales are considered in the process (short, medium, long), so the plan considers a long-term horizon (i.e. 10 years) and derives medium term targets and short-term activities (1 to 3 years) from there. The plan includes a high level of detail for the first years and the level of detail decreases over time.
- A trade-off between strategic vision and detailed analysis: the process should seek to articulate the district's broad vision to achieve universal and sustainable services as well as the steps required to achieve it in terms of construction, maintenance or support activities and financing. At each step of the process, a balance is sought to ensure formulation of a broad vision, whilst also providing timely data to calculate ballpark cost estimates required for a long-term plan.
- Consideration of services under the district's remit: in some districts, a proportion of services are managed by WASAC (e.g. most of the districts in the Eastern Province). In these cases, although districts might step in to finance major maintenance, the responsibility for minor and major maintenance rests with WASAC. For that reason, these services are not considered in the process described below.

The development of a district Full Life Cycle WASH Plan follows a five-stage approach with distinct outputs associated with each stage. Figure 6 presents the process in a linear way for clarity but should be understood as iterative for various reasons:

- Assessments carried out initially provide the basis for developing a vision and approach. However, this vision is revisited based on financial resources available.
- Costing of services and identification of financial resources can either be calculated after developing the vision, but key elements (such as current operational costs and standard capital expenditure) can be included in the initial assessment.

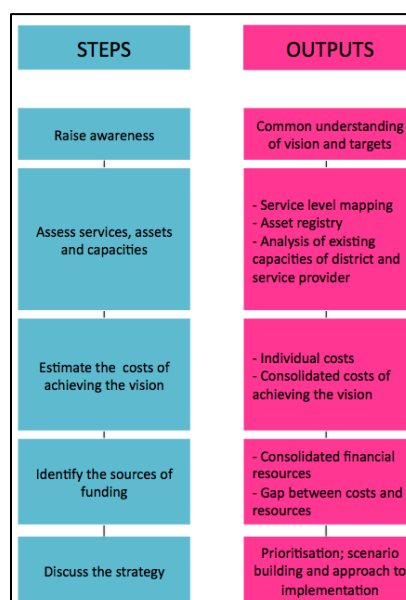


Figure 6: Steps for developing a Full Life Cycle WASH Plan

5.2. Assessment of current services, assets and capacities

The district, with the support of its partners, assesses i) the age and conditions of assets, ii) the status and sustainability of water resources, iii) service levels, iv) the capacity of the district authority to fulfil its WASH mandate to plan and budget, as well as to regulate and support service providers and monitor service quality and v) the technical and financial capacity and performance to delivery appropriate services, of the different service providers in charge of operation and maintenance.

This step can be thought of as a “baseline” as it seeks to gather both quantitative and qualitative evidence to serve as a basis for characterizing current WASH delivery status in the district, identifying the needs in terms of WASH services (new and existing) and strengthening existing capacities for service delivery and support. It results in three outputs:

- An asset registry, providing details on existing water asset components, their age, condition and level of priority for maintenance activities, used to identify new investments and for costing capital maintenance needs.
- An overview of the levels of water services at district level. These are presented against a standard service ladder, defined on the basis of JMP standards as well as national standards and used to validate access levels.
- An assessment of districts capacities and gaps used for calculating required direct support costs.
- A water resources assessment used to plan for conservation and protection works around WASH infrastructure.

Table 2: Overview of outputs and tools

Output	Recommended approach	Description of the tool
Asset registry	<ul style="list-style-type: none"> - Use existing country-wide WASAC asset inventory - Update the data in the WASAC inventory when new systems are built, or existing ones are upgraded 	WASAC carried out an asset inventory in 2018 throughout the country, available in the form of a database.
Status and sustainability of water resources	Assess the current status of water resources (quantity and quality) and their sustainability to plan for conservation and protection works around the water and sanitation infrastructure	There is no specific tool available, but hydrogeological studies follow a similar logic and sequence.
Service level assessments	<p>Use national Monitoring Information System (MIS) to validate progress in levels of access</p> <p>The frequency and modalities (sampling or census) of update will be considered by MINIFRA</p>	The National WASH Management Information System (MIS) was identified and developed for the monitoring of the process towards SDG6 targets. It is a Web-based and will allow collection, storage and analysis of all WASH relevant data. It has a modular structure and different user levels in order to meet the needs of the various stakeholders of the different sectors and administration levels starting from the village
Capacity assessment of service authority and service providers	<p>On the basis of the Excel-based tool used in pilot districts capturing required time, staff dedication and skills:</p> <ul style="list-style-type: none"> - Analyse staffing data in the pilot districts using the Excel-based tool to identify sector-wide recommendations on staffing - Complete the analysis of current staff time in the existing tool <p>Discuss results with MINIFRA to include their own capacity development in their plans</p>	The Excel-based tool used in pilot districts is the “District Capacity assessment tool” which supports the assessment of existing skills against core functions, budgets and maps days spent against key activities.

	Check existing questions on service providers in the MIS and KPIs of Private Operators in the reports to RURA and districts and consider using those to develop a service provider assessment	<p>In the MIS we have the following indicators for POs:</p> <ul style="list-style-type: none"> - % of public water supply systems managed by a contracted private operator - No. of active connections - NRW (non-revenue water) - % metered connections - Water sales [volumes] - Continuity of supply - Revenue collected - Collection efficiency
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5.3. Estimate the costs for full life cycle cost plan

This step consists in calculating the cost of achieving the vision. This includes identifying the costs of providing new services (Capital Expenditure or CapEx) as well as those required to maintain existing services (operation, maintenance- CapManEX and direct support activities- DsExp). These activities (i.e. calculating OpEx) can also be carried out as part of the assessment step but are grouped here for logic.

The outputs and processes followed in this step are as follows:

- Costs required to maintain existing services (OpEx, CapManEx)¹: these are calculated for current services and projected in the future. These are done separately for OpEx and CapManEx and brought together into a consolidated overview.
- Costs required to provide new services (CapEx). In Rwanda, this is done by carrying out detailed engineering designs at district level and is used for projecting investment costs and supporting future fund mobilization.
- Costs required to support service delivery (DsExp): using the initial capacity assessments, the activities required to support service provision are identified (e.g. monitoring visits to communities, training of service providers), costed and projected overtime to bridge the gap between current and ideal costs.
- Consolidated costs over time: this consists in i) bringing all costs together, ii) applying additional parameters like inflation, demographic changes etc. to adjust the overall costs

¹ Sanitation cost was not considered for these cost category same for household sanitation CapEx as there was not specific tool to estimate them during the writing of this document, there is an ongoing initiative on how these cost can be assessed, this document will be updated and incorporate those once the tool is finalized and successfully tested

and iii) spreading costs overtime to provide an overview of total costs of achieving the vision. It should be noted that whilst some costs will be “naturally” spread over time (i.e. asset replacement based on age will be dependent on the remaining useful life of the asset), others will require prioritization.

Once all costs of achieving the vision are identified, all financial resources are projected over a 10-year period to identify the funding gap. This includes financial resources which districts have no control on (e.g. tariffs) as well as financial resources which they have control over their use (e.g. transfers).

This is done by adopting a two-stage approach: i) all known financial resources (tariffs, taxes and transfers) currently available for WASH are identified and are ii) individually projected applying a series of assumptions.

The assumptions vary per type of financial resources:

- The amount generated from tariffs will depend on i) the level of tariff, ii) the number of users, iii) the tariff collection rate.
- The amount generated from transfers will depend on existing and planned projects in the districts from donors or other external parties.
- The amount generated from taxes will depend on the district’s ability to generate taxes in its jurisdiction that can be mobilized for the WASH sector.

The information is inputted in the consolidated costing tool to produce an overview of financial resources over time and an understanding of the funding gap (figure 7).

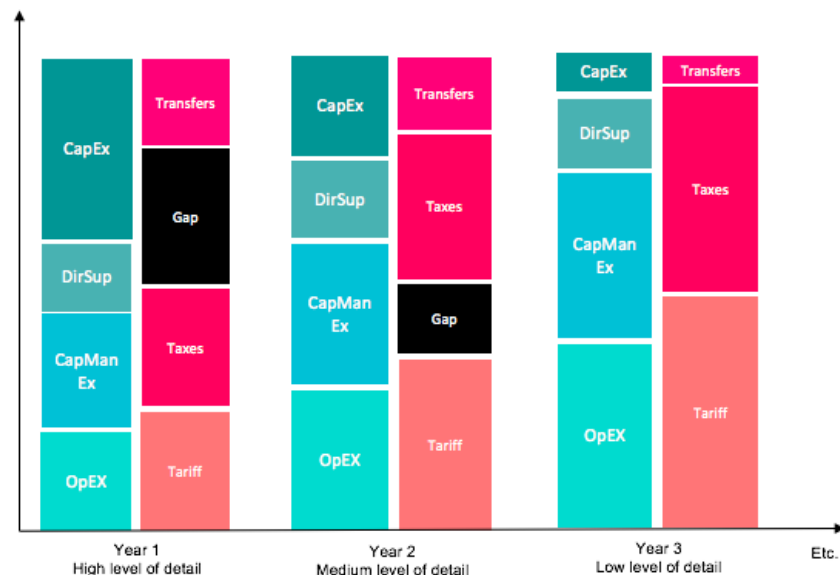


Figure 7: Identifying the funding gap between overall costs and financial resources

6. WASH Capital Expenditures cost (CapEx)

6.1. Water supply infrastructure development

Since 2010 under the Rulindo Challenge Program, Rulindo District together with its partners have implemented all the water infrastructures as per the National Water and Sanitation Policies which stipulates that someone has access to water supply services if he/she makes a distance of less than 200m in urban areas and 500m in rural to fetch for water. During that period the following has been implemented:

- 46 piped systems (14 motorized and 32 gravity-fed water supply systems) were built, rehabilitated and extended in all 17 sectors, serving 269,247 people, 56 schools, and 13 health care facilities;
- 919 Water Users' Committees (WUCs) were established and trained to manage water systems and community water points. WUCs oversee the management of water systems and report their complaints to the district and service provider;

To achieve this, a total investment of US\$24,903,396 over the past eight years of implementation of the Rulindo Challenge Program, including hardware and software activities. The following graph how indicate how the Rulindo Challenge Program was financed.

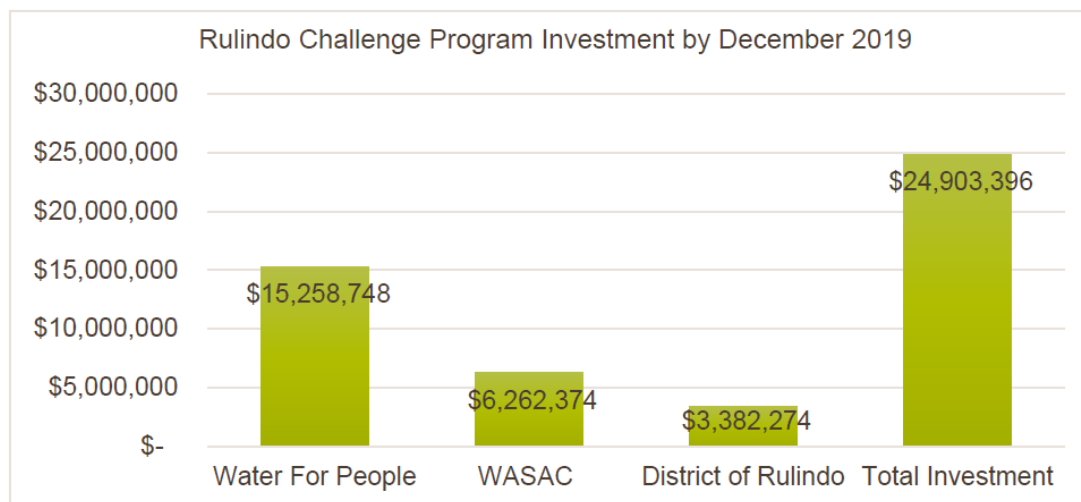
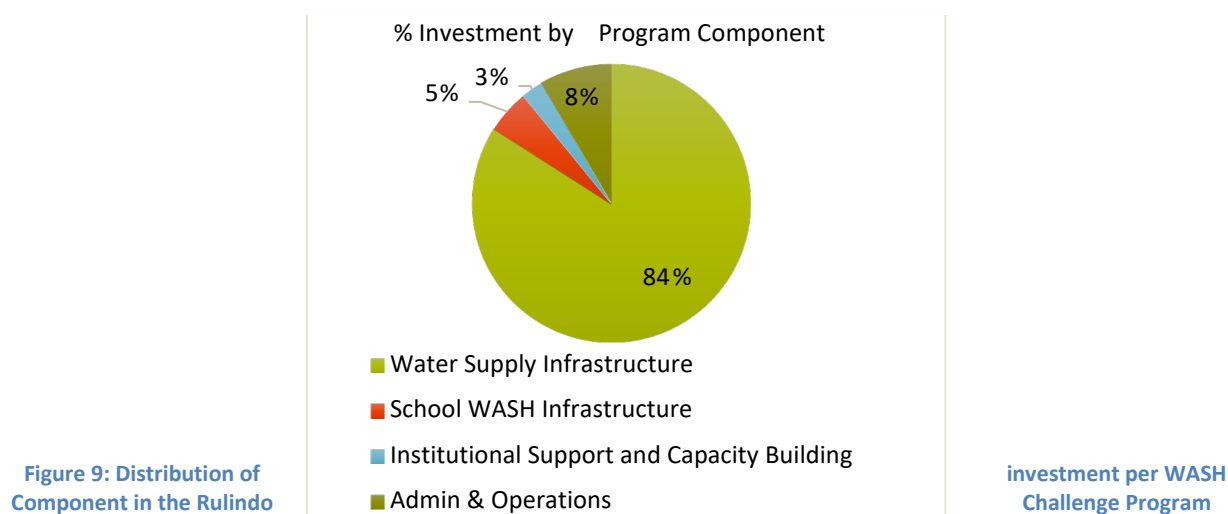


Figure 8: Rulindo Challenge Program Financing from partners

Figure 9 also shows how the investments were spread through each of the Challenge's programmatic components. 84% of the budget went into the establishment of water supply infrastructure, 8% was invested in program management, 6% was spent on school WASH infrastructures, and the remaining 2% was invested in institutional support and capacity building.



From the successful implementation of the Rulindo Challenge it is obvious that the District does not need any capital investment for new water supply infrastructure as all the infrastructure have been constructed, rather what the district need to focus on is ensure that it plan for Capital Replacement of existing infrastructure once they get old or when they are damaged as described in chapter 7 of this document, the district also should make sure also the private operators in charge of providing the services plans for a sufficient operating and maintenance expenditures as explained in chapter 8 of this document.

6.2. Sanitation infrastructure in Communities, Schools and Health centers

Same for water supply infrastructure supported in the Rulindo Challenge Program, the following sanitation infrastructures have been supported in schools and health centers:

- 85 schools and 2 health care facilities were supported with rainwater harvesting systems, with rainwater mainly being used for cleaning purposes;
- 59 schools were supported with eco-toilets, and schools use human manure and urine as soil conditioner in the school gardens. Some schools sell human manure and urine to the neighbor households for use in their farms;

In communities the following has been achieved:

- 4,142 households have constructed their own sanitation facilities, and 1,558 households upgraded their toilets because of community mobilization and hygiene education by 2018.

This big achievement is the result of sanitation marketing and hygiene education done through Community Health Clubs.

- 494 Community Health Clubs were established and trained in all villages. Health clubs help communities in hygiene education and improvement of sanitation facilities in their respective communities; Sanitation activities in schools and health facilities consist in constructing ecosan toilets as well as providing rainwater harvesting systems.

6.3. Sanitation Public Infrastructure

6.3.1. Faecal sludge management

Faecal Sludge management is currently done in three ways in Rulindo District, the first way which is the most common method following social economic development of Rulindo District is to cover a toilet once it is full and dig a new one, this can only be applied to rural part of the district where there is no high pressure on the land. The second way is for household that have toilet that can be emptied to hire an emptying services from the City of Kigali or Gicumbi district and pay an expensive cost for the service, the final way is for household to empty their toilets in an illegal manner and dump the sludge directly into the environment. Under the implementation of the Rulindo Challenge Program and considering that most of the area in Rulindo District are rural and the demand for pit emptying services was very low, establishment of faecal sludge management facility was not given high priority but as the district grows, more centers and small towns are developing very fast creating a need to have an adequate Faecal Sludge Management Facility.

From experience in Uganda and Gicumbi District where Water For People has piloted Decentralized Faecal Sludge Treatment Plant (DEFAST) which are suitable for small urban areas, it is recommended that a similar facility be constructed to help Rulindo District to handle Faecal Sludge management.

The DEFAST technology is aiming at treating faecal sludge in order to improve sanitation status in small cities. The technology is designed to have six units of inlet screen for non-biodegradable solids, the dewatering unit, anaerobic baffled reactors, anaerobic filters, planted gravel filter and drying bed as shown in the Figure 10 below.



Figure 10: DEFAST technology

From the Gicumbi experience, to construct such facility will cost around One Hundred and Fifty Thousand USD (120,000 USD). This is an estimate, and a more realistic value should be expressed after a detailed study from experts.

6.3.2. Solid Waste Management

Despite facing fecal sludge management problems, Rulindo District city faces a serious problem of solid waste management as well. Currently all the households are practicing onsite composting but with the district developing fast, there will be a growing number in the volume of solid waste generated especially non-biodegradable waste than cannot be composted onsite or elsewhere.

In this regard, taking basis on Landfill construction studies done by Lake Victoria Water Supply and Sanitation Program (LVWATSAN) in other six cities of Rwanda, an estimate was calculated for the district of Rulindo of Five hundred millions Rwandan Francs (500,000,000RWFs) equivalent to six hundred and three thousand (603,000 USD).

6.4. Water Resources management plan

Water for People supported the district in developing its Water sources management plan. The aim of the support was to develop a concise plan of actions that can be undertaken by the district in protecting water supply infrastructure from the source up to the end user.

The production of the plan costed 80 million RWFs (96,400USD). The provided a district-based approach to catchment management that provides water supply decision makers relevant information to sustainably manage their drinking water infrastructure. By identifying the appropriate protection measures for the catchment areas feeding the water infrastructure, expensive multi-stage treatment and continual development of new sources can be avoided.

For water quantity analysis, the water consumption scenario considered were 20, 40, 60, 80 and 100 l/c/day projected in a period of 25 years. The analysis showed that if protection measures are not taken to allow recharge of the source catchments few sectors will not have a deficit for all the scenario, and majority of them will have a deficit in all the years whatever the consumption. The water quality results showed that for all the parameters measured, total coliforms were observed in most of the springs and lower value of pH were observed.

Based on the findings, protective measures were proposed for larger catchment protection as follows:

- Agroforestry with progressive terraces/cutoff drains
- Agroforestry with cutoff drains/horizontal trenches
- Agroforestry with radical terraces/gully treatment
- Forest plantation, and
- Natural forest.

Additional measures for protecting the immediate source area were also identified including diversion ditches, fences, planting grass, removal eucalyptus, and progressive terraces, installation of chlorination units (as disinfection facilities) and pH regulator.

Findings also highlight the need for increased institutional capacity to manage water resources within water user associations along with sector and district-level committees. Opportunities for increased stakeholder engagement were also identified.

The total cost for WRM measures was estimated at 26,885,310,500 FRW (~26,800,000 USD) in Rulindo District

7. Water Supply Capital Maintenance Expenditure Cost (CapManEx)

Capital Maintenance Expenditure (or CapManEx) is defined as the occasional cost of repairing the components of a water scheme to ensure that services continue at the same level of performance that was first delivered. It is based on the age and the physical state of the components. For example, replacing an engine on a power pump, cleaning a water tank, etc. (Franceys & Pezon, 2010).

As part of DWA implementation a CapManEx tool was developed and aims to i) calculate the capital replacement costs of existing services and ii) feed into the broader cost calculations required to achieve the district's vision of achieving universal and sustainable services.

The tool is excel-based. Because, its calculation uses the asset registry as a basis it is recommended to add the tab corresponding to the CapManEx tool to the existing asset registry excel document and to link it to the needed cells.

UNDERLYING PRINCIPLES

- It uses asset registry as the entry point to determine the CapManEx required based on two parameters: i) the asset components' age and the asset components' condition (or physical state);
- CapManEx based on age are spread over time using the remaining design lifetime of each asset component as a basis;
- CapManEx costs based on the physical state are spread over time based on the high, medium or low priority to repair or replace the components defined in the asset registry. The estimated costs are spread over time with the assumption that high priority repairs should take place in the coming 3 years, medium priority repairs between 4 and 5 years and low priority repairs between 6 and 10 years.
- CapManEx costs based on the physical state and the remaining life are combined and costs identified beyond the 10-year threshold ignored;
- This tool has been designed to support districts in Rwanda. For that reason, minor repair (or OpEx), which fall outside of the District's responsibility are calculated but not used in the CapManEx tool. If used in a different context the OpEx could be taken into consideration, but this would require to modifications to the tool.

This tool was used in Rulindo District with asset registry data collected by WASAC in 2018

For the water supply systems assessed, the following was obtained:

Table 3: List of water supply system with defecting components:

Water supply systems	components
Gahama-Kisaro	2 Tap stands
Gahondo	1 Intake Structure
Gatobero	1 Intake Structure; 1 Storage tank; 2 Concrete structure; Concrete structure; 1 Tap stand
Gitabage	1 Tap stand
Kararama	1 Concrete structure
Kibuye	1 Tap stand
Kiduha-Muyanza	1 Intake Structure; 1 Storage tank; 1 Concrete structure; 1 Tap stand

Marengé-Musenge-Ngoma-Masoro_WSS	1 Tap stand
Maryohe (Kirambo)	1 Intake Structure; 1 Concrete structure
Matonyanga 2	1 Tap stand
Miyove-SORWATE Tea Factory_WSS	1 Intake Structure; 2 Concrete structure
Munoga	1 Storage tank
Nyagahera	1 Tap stand
Nyamagana-Cyungo-Rukozo-Kinihira_WSS	1 Intake Structure; 2 Storage tanks; 1 Concrete structure; 2 Tap stands

The associated cost for their replacement cost is as follow:

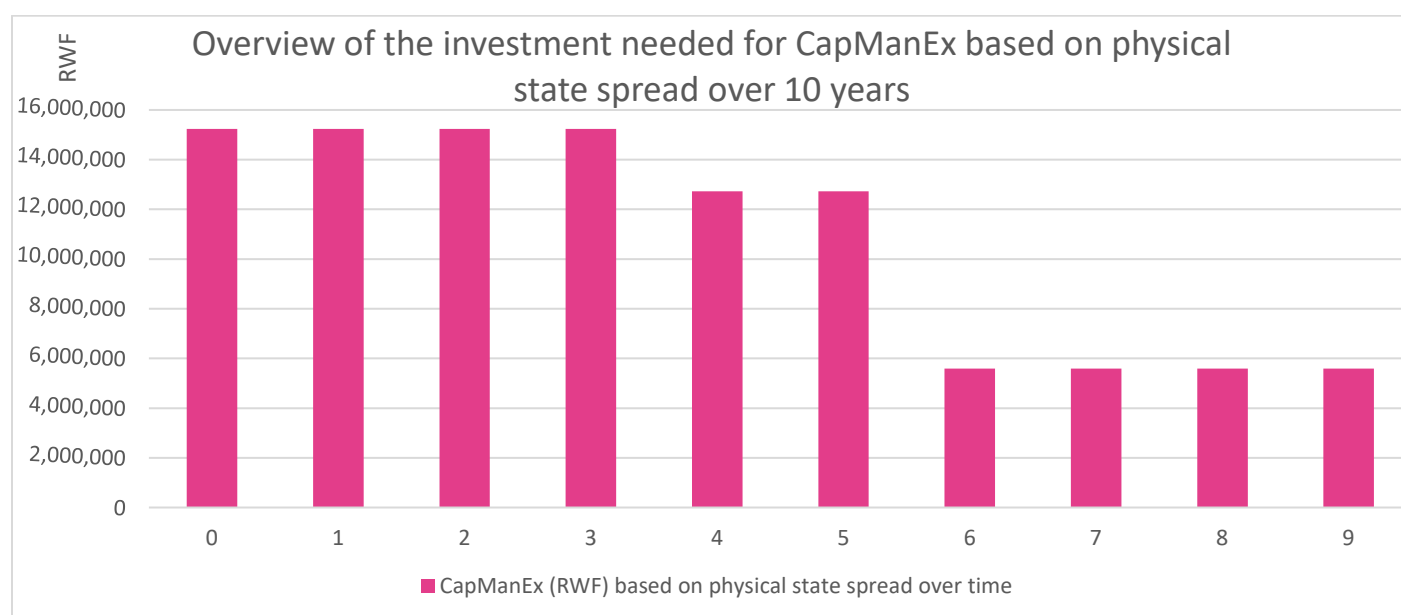


Figure 11: Cost of capital replacement based on the physical status of their components

The cost spread over time was done based on prioritization of water supply system by number of components to be replaced, this cost is flexible and district can decided if they want to implement all the cost in a particular year or over a short time.

Based on the remaining life of components of the water supply systems, the following replacement cost was calculated as follow:

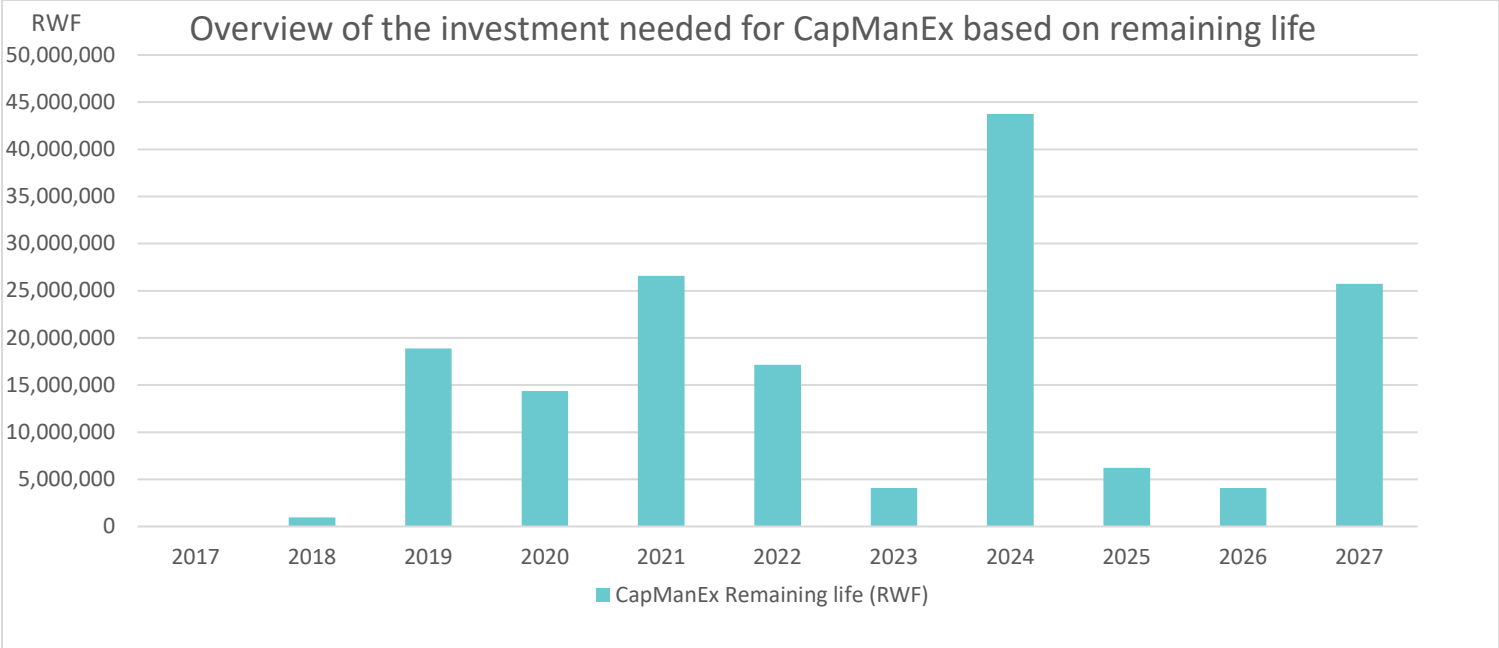


Figure 12: Replacement cost based on remaining life of water supply components

The CapManEx cost tool provides details of components in the years where their replacement is requested.

Combining the cost of the replacement cost based on the physical status of the components and their remaining life, we have the following cost:

Table 4: Combined replaced cost of water supply components based on their physical status and remaining life

Overview of the global CapManEx (RWF)		2017	2018	2019	2020	2021
CapManEx based on age		96,000,000.00	-	288,025,791.84	1,286,020.80	-
CapManEx based on physical state				26,504,979.35	26,504,979.35	26,504,979.35
Total		96,000,000.00	-	314,530,771.19	27,791,000.15	26,504,979.35

Overview of the global CapManEx (RWF)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CapManEx based on age	-	964,515.60	18,861,638.40	14,360,565.60	26,577,763.20	17,146,944.00	4,072,399.20	43,746,140.88	6,215,767.20	4,072,399.20	25,720,416.00
CapManEx based on physical state			15,231,597.27	15,231,597.27	15,231,597.27	15,231,597.27	12,722,610.85	12,722,610.85	5,595,327.35	5,595,327.35	5,595,327.35
Total	-	964,515.60	34,093,235.67	29,592,162.87	41,809,360.47	32,378,541.27	16,795,010.05	56,468,751.73	11,811,094.55	9,667,726.55	31,315,743.35

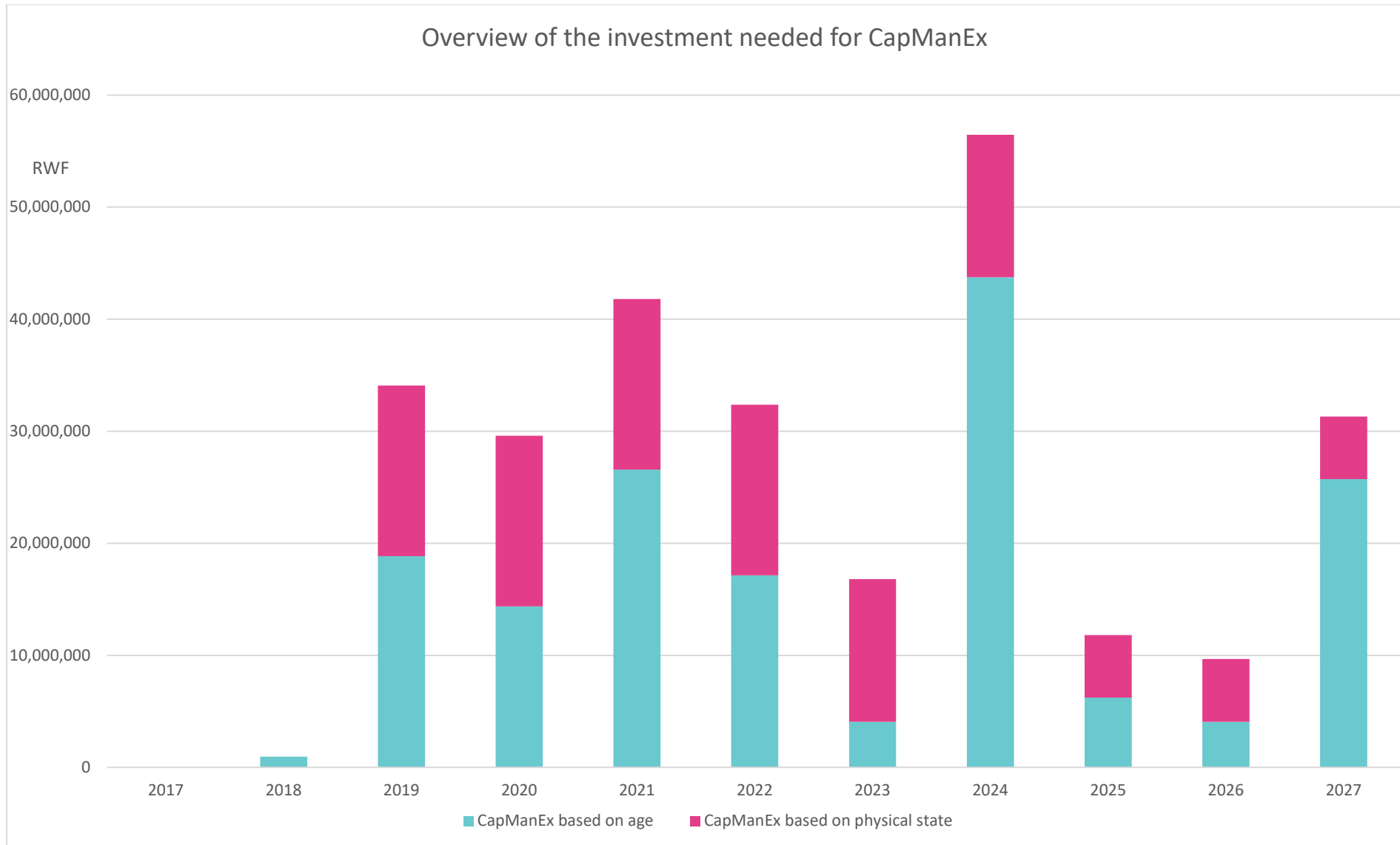


Figure 13: Overall capital replacement cost in Rulindo based on physical status and remaining life of water supply systems components

8. Water Supply Operational and Maintenance Expenditure cost (OpEx)

In Rwanda, water supply operational and maintenance expenditure falls under the responsibility of the service provider and it is covered under the charged tariff. Even though this is not responsibility of the District, we assessed this cost to know what could be the minimum cost that the service will use in a period of 10 years per year. The assessment was done using the AtWhatCost model which is a tool that looks at all the revenues and expenses of the service provider system by system and project the cost for selected period in the future.

In Rulindo District there are two service providers responsible for providing the water supply service delivery in Rural areas while WASAC is responsible for the service delivery in the urban part of the district.

The following graph indicates the needed OpEx² cost in the coming 10 years for water supply services delivery.

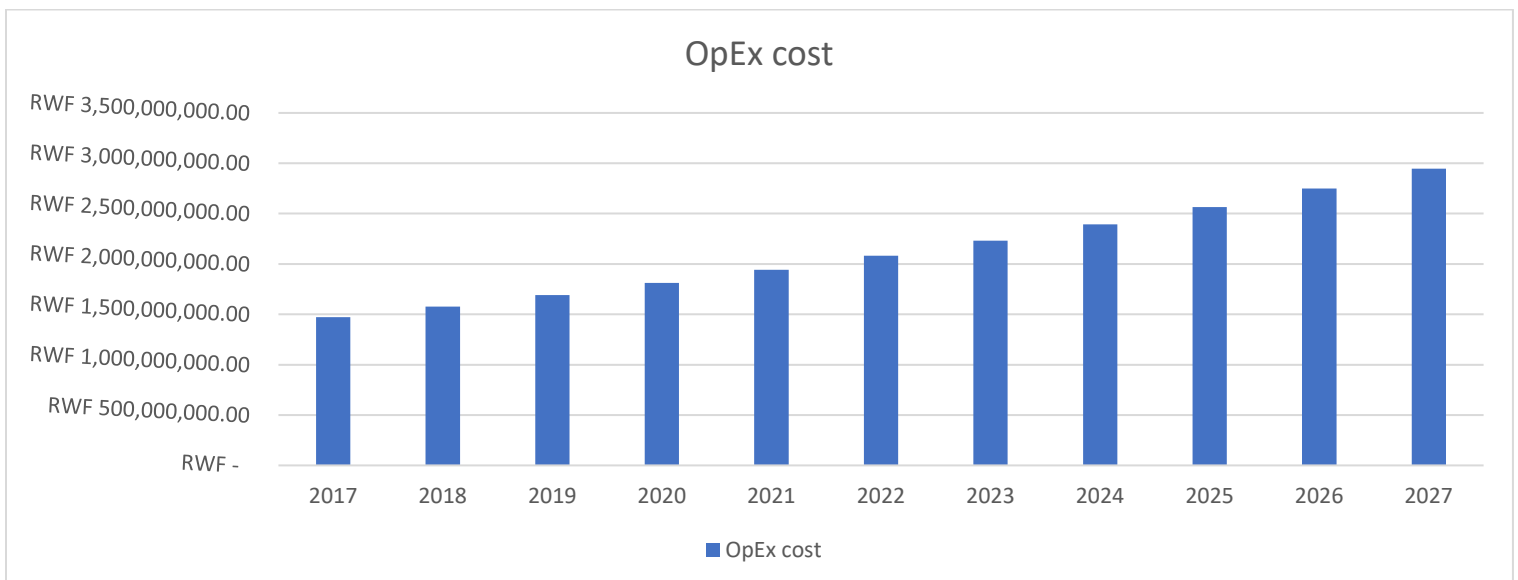


Figure 14: OpEx required for water supply service delivery in Rulindo District

² The OpEx assessment was only conducted for one of the service providers provide water supply service in Rulindo, during the time of assessment the second service provider was still new and did not have enough data for us to undertake operating expenditures analysis

9. Direct Support Cost Expenditure (DsExp)

In order to ensure that the WASH service is effectively and timely delivered to the population, the district need to have all the financial and human resources needed to achieve that. For a continuous and sustainable service delivery, the district need have all these costs required at all time and ensure that institutional functional roles are fulfilled, and everyone is playing his role.

To assess these costs, a District capacity assessment tool was used, it is composed of three parts:

- First part is to evaluate if the entire institution has enough human and financial resources
- Second part is to evaluate skills and capacity of individual staff.
- Third part is to evaluate if the district has the enabling environment to ensure sustainable water service delivery

The cost was estimated based on the actual number of staffs versus staffs needed based on the number of working days and the work to be done, the cost was cost computed based on the approved salary of the districts and the cost related to field visit, workshop and meetings. The assessment provided the following results:

	Current Frw	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Current Direct Support expenditure per year	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80	RWF 221,645,320.80
Ideal / Required Direct Dupport expenditure per year	RWF 344,583,287.40	RWF 368,704,117.52	RWF 394,513,405.74	RWF 422,129,344.15	RWF 451,678,398.24	RWF 483,295,886.11	RWF 517,126,598.14	RWF 553,325,460.01	RWF 592,058,242.21	RWF 633,502,319.17	RWF 677,812,319.17
Gap between current and required direct support expenditure	RWF 122,937,966.60	RWF 131,543,624.26	RWF 140,751,677.96	RWF 150,604,295.42	RWF 161,146,596.10	RWF 172,426,857.82	RWF 184,496,737.87	RWF 197,411,509.52	RWF 211,230,315.19	RWF 226,016,437.25	RWF 241,812,319.17

	2017	2018	2019	2020	2021	2022
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Current Direct Support expenditure per year	250,963,720.80	250,963,720.80	250,963,720.80	250,963,720.80	250,963,720.80	250,963,720.80
Ideal / Required Direct Support expenditure per year	407,232,287.40	435,738,547.52	466,240,245.84	498,877,063.05	533,798,457.47	571,164,349.49
Gap between current and required direct support expenditure	156,268,566.60	184,774,826.72	215,276,525.04	247,913,342.25	282,834,736.67	320,200,628.69

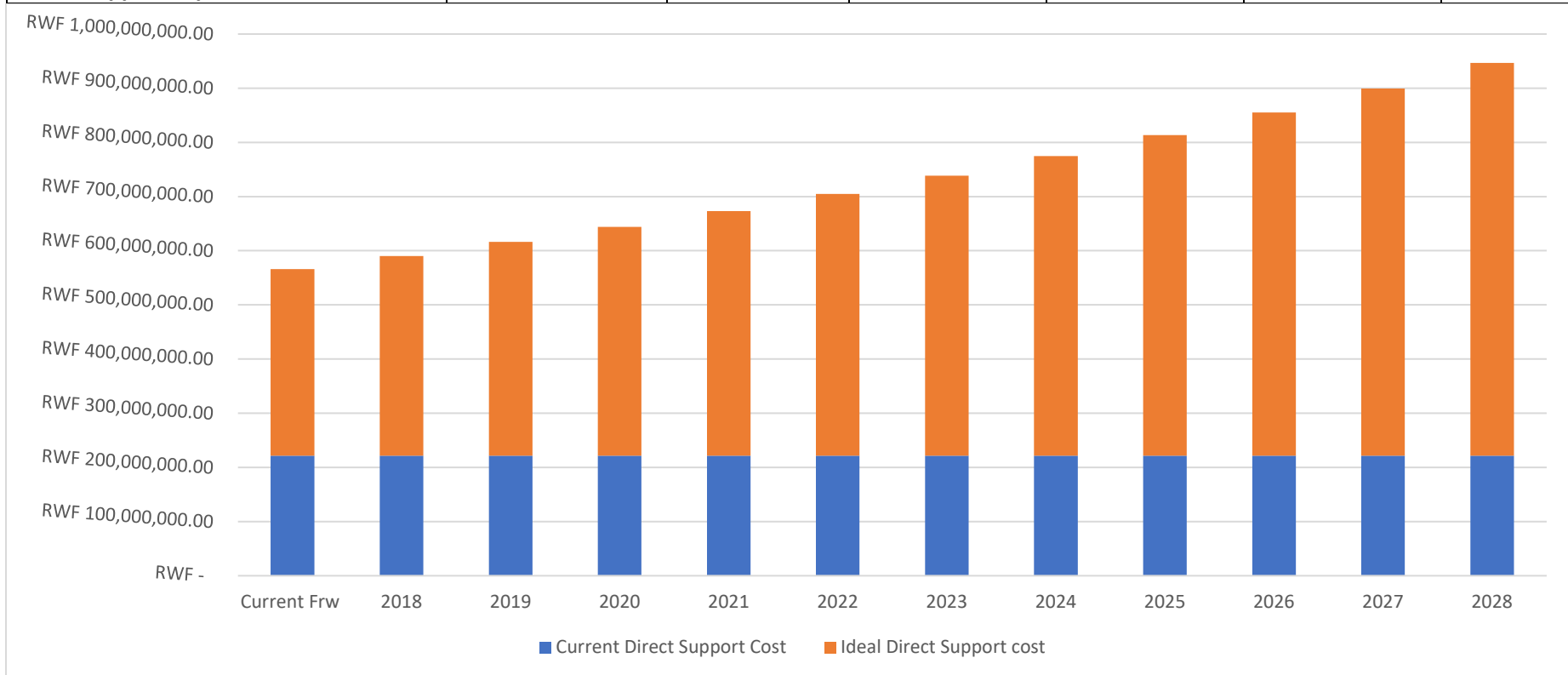


Figure 15: Current direct support cost Vs Ideal support cost for Rulindo District

From the above graph it is obvious that the current direct support cost not match the realistic cost required to ensure sustainability of WASH services with a difference of more than 122,000,000 Frw (122,000 USD) every year, this is mostly justified by the fact the staff needed assessment indicated that there is a need to double the of water and sanitation engineer from 2 to 4 and to have permanent District WASH Board permanent staff.

Annex 5 shows in details the staffs need assessment from the Direct Support cost tool.

10. Overall investment plan

The Government vision 2020/2050 presents the country's overarching vision, cascaded into a 7-year government programs under the name of National Strategy for Transformation (NST1). The strategy is expected to lay the foundation for decades of sustained growth and transformation that will accelerate the move towards achieving high standards of living for all Rwandans. The NST 1 targets are ambitious but achievable, for WASH it is expected that all Rwandans should have universal access to WASH services by 2024 and all measures should be undertaken to ensure sustainability by 2030. Realizing this target will require strengthening collaboration and partnership among all stakeholders and enhancing ownership at all levels.

These frameworks are translated into i) a 3- year District Development Strategies (DDSs), which articulate the district's vision across sectors. WASH is included in the DDS, but currently only consists in a short paragraph, as well as ii) annual plans and budgets, annual performance contracts, or Imihigo, for each fiscal year (i.e. from July to June), detailing activities/funding arrangements to implement the DDS. The main gap is to understand ALL the cost required to reach the overall targets but also to breakdown the overall cost that can be easily monitored. It is foreseen that the WASH investment plan would be derived from the national Strategy for Transformation and feed into the DDS to support its 5-yearly update

After assessing all the cost separately, all the costs were consolidated and projected in a period of 10 years. This consisted in i) bringing all costs together, ii) applying additional parameters like inflation, demographic changes etc. to adjust the overall costs and iii) spreading costs overtime to provide an overview of total costs of achieving the vision. It should be noted that whilst some costs will be "naturally" spread over time (i.e. asset replacement based on age will be dependent on the remaining useful life of the asset), others will require prioritization. The prioritization process is district-specific and should be articulated clearly on an annual basis (i.e. areas with no service, population size, or other).

Once all costs of achieving the vision were identified, all financial resources were projected over a 10-year period to identify the funding gap. The fund allocation was based on current district budget flow from development partners. This included financial resources which districts have

no control on (e.g. tariffs & national taxes) as well as financial resources which they have control over their use (e.g. Development partners transfers and local taxes).

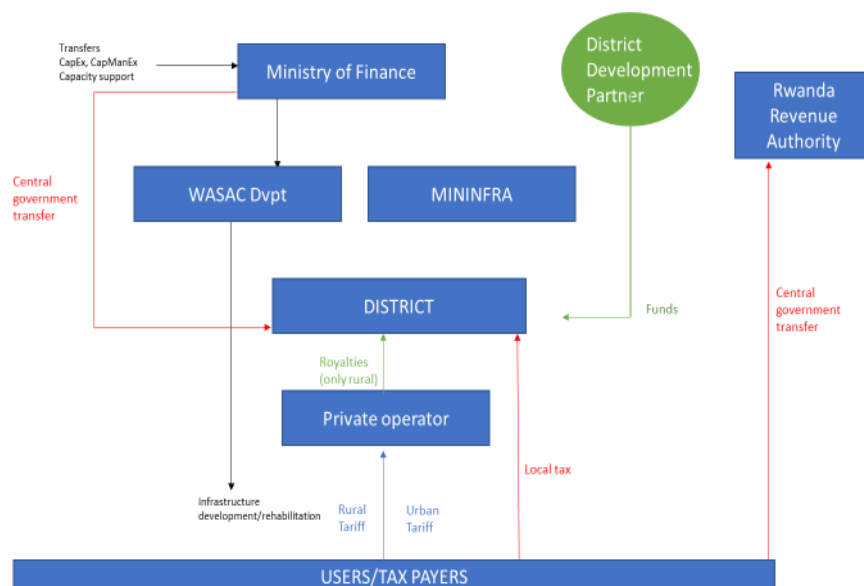


Figure 16: Rulindo District WASH current Financial flow for WASH services

After assessing the existing financial flows, the distribution of the costs were done as follows:

Table 5: Rulindo WASH cost distribution based on the source of funding

Service provider	CapEx	CapManEx	OpEx	DSexp
WASAC utility	NA	NA	NA	Entity: District Source: Central government transfers, Local taxes, Royalties and District development partners
Private operator	NA	NA	Entity: PO Source: Tariff	
Community/ Districts/ Government	Entity: WASAC Dvpt, District Source: Central government transfers, Local taxes and District development partners	Entity: WASAC Dvpt, District Source: Central government transfers, Local taxes and District development partners	NA	
Development Partners	Entity: WASAC Dvpt, District Source: Central government transfers and District development partners	NA	NA	

The following table indicates the different WASH cost needed:

Table 6: WASH Cost service provision needed in Rulindo District

COSTS OF SERVICE PROVISION

Source of information from other tools	Engineering design	CapManEx Tool	
	CapEx	CapManEx	
Total			
2017	RWF -	RWF 96,000,000.00	
2018	RWF 742,089,307.00	RWF -	
2019	RWF 1,053,758,828.00	RWF 314,530,771.19	
2020	RWF 6,060,929,471.00	RWF 27,791,000.15	
2021	RWF 4,719,482,908.00	RWF 26,504,979.35	
2022	RWF 5,430,636,741.33	RWF 139,674,809.75	
2023	RWF 5,619,642,683.33	RWF 53,584,200.00	
2024	RWF 4,127,388,715.00	RWF 101,809,980.00	
2025	RWF 6,339,532,646.00	RWF 1,998,331.20	
2026	RWF -	RWF 546,413,803.20	

COSTS OF SERVICE PROVISION

Source of information from other tools	Engineering design	CapManEx Tool	AtWhatCost	Direct Support Cost
	CapEx	CapManEx	OpEx	Dsexp
Total				
2018	RWF -	RWF 964,515.60	RWF 1,471,998,278.03	RWF 344,583,287.40
2019	RWF -	RWF 34,093,235.67	RWF 1,577,801,309.80	RWF 368,704,117.52
2020	RWF -	RWF 29,592,162.87	RWF 1,691,073,714.84	RWF 394,513,405.74
2021	RWF -	RWF 41,809,360.47	RWF 1,812,734,014.70	RWF 422,129,344.15
2022	RWF -	RWF 32,378,541.27	RWF 1,943,108,462.12	RWF 451,678,398.24
2023	RWF -	RWF 16,795,010.05	RWF 2,082,704,824.89	RWF 483,295,886.11
2024	RWF -	RWF 56,468,751.73	RWF 2,231,996,131.21	RWF 517,126,598.14
2025	RWF -	RWF 11,811,094.55	RWF 2,392,562,636.56	RWF 553,325,460.01
2026	RWF -	RWF 9,667,726.55	RWF 2,564,827,146.40	RWF 592,058,242.21
2027	RWF -	RWF 31,315,743.35	RWF 2,749,494,701.02	RWF 633,502,319.17

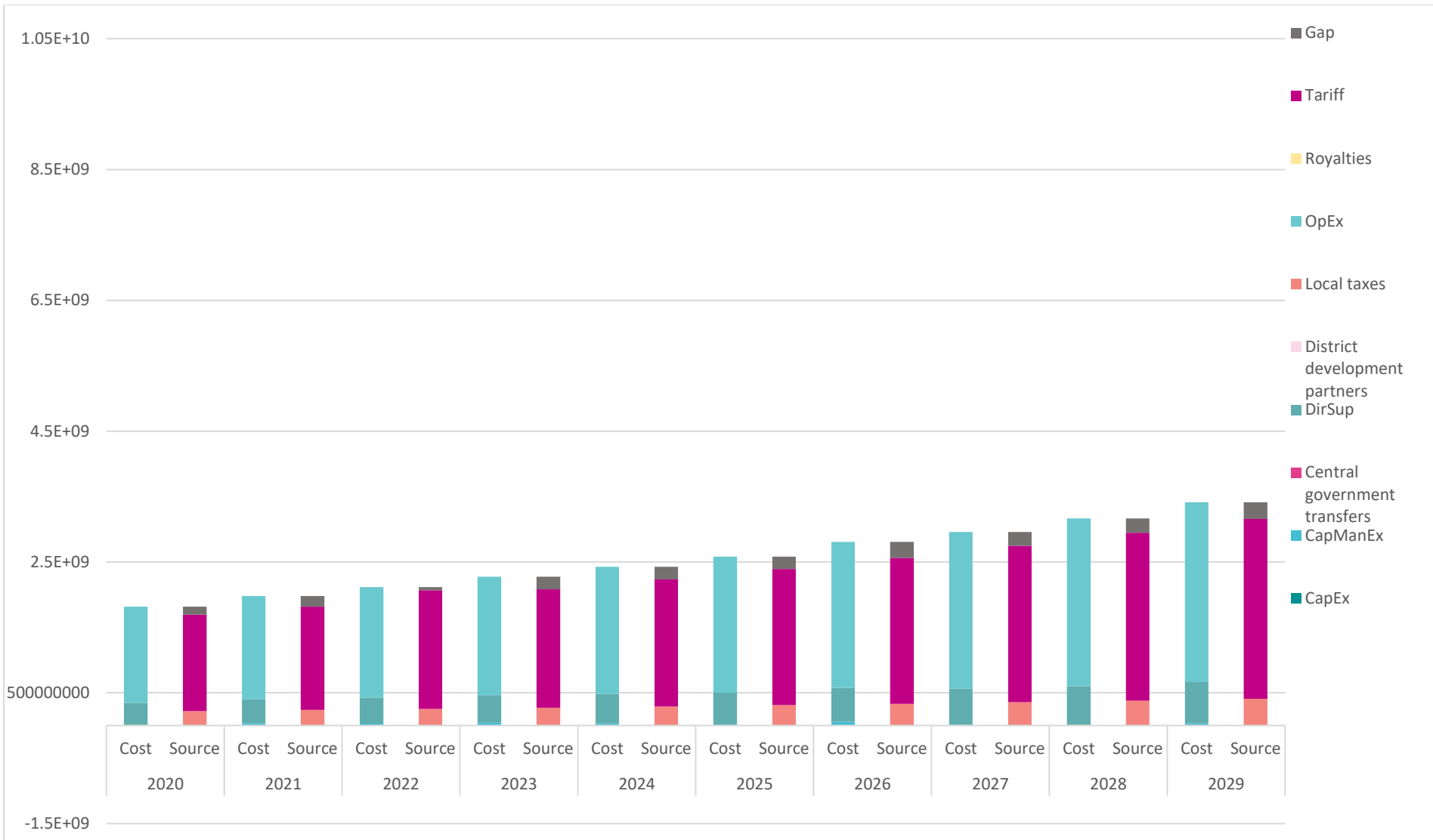


Figure 17: Rulindo District needed WASH Cost, sources funding and gap analysis

From the above assessment, the following was observed:

- Rulindo has already implemented all the water supply infrastructure and does any other investment related to water supply Capital Expenditures.
- The current tariff as set up by the Rwanda Utility Regulatory Authority is fully cover OpEx and no gap was observed in the 10 years as per the service provider assessment, however the existing tariff does not include any cost related to required treatment (disinfection and pH regulation) of the water before it is supplied in the pipes
- Even though together with its partners under the Rulindo Challenge Program the district has completed all the capital investment required for water supply, so far the district has not yet started to allocate budget for capital replacement cost and should start planning for that based on the result of the capital maintenance cost provided in the assessment
- The district capacity assessment indicated that there is a needs to increase the number of staff and budget to cover the gap identified especially by providing two additional engineers and full permanent staffs for the District WASH Board for an effective WASH service delivery monitoring.

ANNEXES

ANNEX I: District Capacity Assessment results

Work Activity (annual) (to edit for local context)	Engineers/Technicians	Finance	Planning, M&E	Executive committee	Support staff	DWB
Formulation of a project						
Request from the community to District						1
Selection of community				1		
Identification of needs	3					
Discussion with different authorities to have common understanding	1		1	1		1
Prioritize the needs				1		1
Agreement between parties			1	1		
Formulation of the scope of the project	3					
Establish the goals of the project	1					
Present the project to the local authority and request the authorization				1		
Identification of key actor and responsibility of the project	1		1	1		
Survey and planning						
Socio-economic survey	1					
Sector situation survey			1			
Natural condition survey	1					
Topographic survey	7					
Water quality survey	1					
Soil testing and investigation	2					
Water source survey	2					
Survey of procurement condition						
Basic plan						

Water demand projection	1					
Elaboration of basic plan						
Facility planning	1		1			
Structure of implementation	2					
Environmental Impact Assessment						
Economic and financial appraisal	1					
Design						
Outline design	1					
Design plan	1					
Determination of basic parameters	1					
Calculation of basic quantity	1					
Construction plan	2					
Procurement plan	1					
Plan of design and construction supervision	2					
Plan of construction schedule	1					
Plan of operation and maintenance	1					
Planning of capacity building	1					1
Cost estimation						
Structure of implementation cost	1					
Estimate of implementation cost	1					
Method of cost estimation	1					
Management cost	1					
Preparation cost	1					
Construction cost	1					
Procurement cost		0.428571429				
Design and supervision cost						
Provisional cost						
Operation and maintenance cost						

Fund mobilization						
Identification of potential sources of funds	0.428571429			1		
Mobilize funds	2		1	2	1	
Preparation of implementation						
Preparation of project time frame	0.5		0.5	0.5		
Setting indicators of the project progress	1					
Tendering						
Preparation for tender documents (for contractors and supervisors)	5					
Advertisement of tender	0.142857143			0.1428571		
Opening and evaluation of tender	3			3	3	
Selection of contractors and supervisors	3			3	3	
Preparation of contract documents	2			2		
Signing the contract	1			1		
Implementation of construction works and supervision						
Kick-off meeting of the project (District, Contractor, Supervisor and WASAC)	1		1	0.4285714		
Implementation of construction works and supervision		4	7	5	3	10
Community mobilization for O&M						
Conducting community mobilization	16			32		3
Monitoring and evaluation of implementation						
Site visit	160					
Preparation of progress reports	8		8	4		3
Annual monitoring	1					

Handover of the facilities to District						
Inspection of the facilities	3			1		
Handover of the facilities to District	1		1	1	1	
Issue of completion certificate for approval of payment to the contractors	4			4		
Preparation of O&M plan						
Preventive maintenance plan	1					
Curative maintenance plan	1					
Spare parts procurement plan						1
Rehabilitation plan	1			1		1
Preparation of guideline and manuals	1					1
Assessment of present situation of the water facilities						
Site visit	12					24
Reporting of the assessment	1			0.42857 14		2
Community mobilization for O&M						
Set up of the structure of management						
Preparation of PPP contract	1					0.5
Determination of selecting method of PO	1					
Determination of qualification of PO	1					
Preparation of contract documents						
Selection of PO	3			3		
Confirmation of the condition of existing facilities						
Preparation of tender documents for selecting PO						
Tender notice	1			0.5		
Distribution of tender documents						
Pre-qualification of candidates of bidder (PO)	1			0.5		

Site visit	12					12
Question & Answer						
Preparation of technical proposal by bidder						
Evaluation of proposal						
Tendering and selecting PO						
Signing contract						
Handover of water supply systems to PO	1			1		
Execution of PPP contract	1					
Conducting O&M of water supply systems by PO	12					4
Establishment of district water board	1			1		
Establishment of water users committee	21					21
Carry out capacity building						
Meeting with Water Users Committees	21					21
Ensuring hygiene and protection of water facilities	12					4
Technical intervention for O&M	12			4		4
Monitoring of execution of PPP contract						
Determination of method of monitoring						1
Determination of method of evaluation						1
Determination of items and parameters of monitoring	2			0.5		1
Water quality						1
Customer satisfaction						768
Water tariff						
Royalty	12					12
Condition of facilities						4
Revenue and expense						4
Evaluation						4
Taking action in case performance is over required standard						4
Taking action in case performance is below required standard						4
Notice of results of performance to the public						2

Data management						
Preparation of DWASHB reports and financials	4			4		4
Review complaints sent by Water Users	48			2		4
Reporting for O&M						
Providing feedback to Water Users Committees and private operators	12			6		230
Review of O&M plan						
Revising PPP contract if necessary	1					
Termination of PPP contract	1			1		
Evaluation of the execution results of PPP contract						
Inspection of functioning of water supply systems	12					
Handover of water supply systems from PO to District	21			1		
Issue of certificate for termination of PPP contract	0.5			1	0.142	86
Development of evaluation plan (technical, financial, socio-economic)						
Defining indicators (ex. water coverage)						
Setting evaluation methods						
Data sources						
Timeline						
Roles and responsibilities						
Evaluation of executed works						
Reporting of evaluation						
DWB Meetings						

Quarterly meetings	1		1	1	0.142 86	1
Office meetings						
Management meetings	48	48	48	48	48	
Steering committee	2		2	2	0.285 71	
Reflection meeting	2			2		2
Workshops, trainings and other meetings	54		6	6		8
Follow up Sanitation services	144					4
Hygiene promotion	144					4
<i>total number of work days needed to support wash in district</i>	885	52	80.5	152	59.57 14	117 9

Number of staff needed 4 0 0 1 0 5

Work Activity (annual) <i>(to edit for local context)</i>	# of Days	Engineers/Techn
Formulation of a project	0	
Request from the community to District	2	
Selection of community	0.05555556	0.055555
Identification of needs	2	
Discussion with different authorities to have common understanding	0.05555556	0.055555
Prioritize the needs	2	
Agreement between parties	0.27777778	0.222222

Formulation of the scope of the project	0.33333333	0.33333333
Establish the goals of the project	0.33333333	0.33333333
Present the project to the local authority and request the authorization	6	
Identification of key actor and responsibility of the project	0.33333333	0.33333333
Survey and planning	6	
Socio-economic survey	0	
Sector situation survey	0	
Natural condition survey	0	
Topographic survey	0	
Water quality survey	0	
Soil testing and investigation	0	
Water source survey	0	
Survey of procurement condition	0	
Basic plan	0	
Water demand projection	0	
Elaboration of basic plan	0	
Facility planning	0	
Structure of implementation	0	
Environmental Impact Assessment	0	
Economic and financial appraisal	0	
Design	7	
Outline design	0	
Design plan	0	
Determination of basic parameters	0	
Calculation of basic quantity	0	
Construction plan	0	
Procurement plan	0	
Plan of design and construction supervision	0	

Plan of construction schedule	0	
Plan of operation and maintenance	0	
Planning of capacity building	0	
Cost estimation	2	
Structure of implementation cost	0	
Estimate of implementation cost	0	
Method of cost estimation	0	
Management cost	0	
Preparation cost	0	
Construction cost	0	
Procurement cost	0	
Design and supervision cost	0	
Provisional cost	0	
Operation and maintenance cost	0	
Fund mobilization	0	
Identification of potential sources of funds	0.11111111	
Mobilize funds	8	
Preparation of implementation	0	
Preparation of project time frame	0.11111111	0.11111111
Setting indicators of the project progress	0.11111111	0.11111111
Tendering	87	
Preparation for tender documents (for contractors and supervisors)	3	
Advertisement of tender	0	
Opening and evaluation of tender	0	
Selection of contractors and supervisors	0	
Preparation of contract documents	0	
Signing the contract	0	

Implementation of construction works and supervision	0	
Kick-off meeting of the project (District, Contractor, Supervisor and WASAC)	1	
Implementation of construction works and supervision	47.44444444	
Community mobilization for O&M	0	
Conducting community mobilization	12	
Monitoring and evaluation of implementation	0	
Site visit	6	
Preparation of progress reports	2.22222222	
Annual monitoring	42	
Handover of the facilities to District	0	
Inspection of the facilities	1	
Handover of the facilities to District	3	
Issue of completion certificate for approval of payment to the contractors	0.25	0.08333
Preparation of O&M plan	6	
Preventive maintenance plan	0	
Curative maintenance plan	0	
Spare parts procurement plan	0	
Rehabilitation plan	0	
Preparation of guideline and manuals	0	
Assessment of present situation of the water facilities	0	
Site visit	16	
Reporting of the assessment	5	
Community mobilization for O&M	52	
Set up of the structure of management	87	
Preparation of PPP contract	6	

Determination of selecting method of PO	0	
Determination of qualification of PO	0	
Preparation of contract documents	0	
Selection of PO	0	
Confirmation of the condition of existing facilities	0	
Preparation of tender documents for selecting PO	0	
Tender notice	0	
Distribution of tender documents	0	
Pre-qualification of candidates of bidder (PO)	0	
Site visit	0	
Question & Answer	0	
Preparation of technical proposal by bidder	0	
Evaluation of proposal	0	
Tendering and selecting PO	0	
Signing contract	0	
Handover of water supply systems to PO	0	
Execution of PPP contract	0	
Conducting O&M of water supply systems by PO	0	
Establishment of district water board	0	
Establishment of water users committee	0	
Carry out capacity building	0	
Meeting with Water Users Committees	71	
Ensuring hygiene and protection of water facilities	0	
Technical intervention for O&M	0	
Monitoring of execution of PPP contract	152	
Determination of method of monitoring	0	
Determination of method of evaluation	0	
Determination of items and parameters of monitoring	0	
Water quality	0	

Customer satisfaction	0	
Water tariff	0	
Royalty	0	
Condition of facilities	0	
Revenue and expense	0	
Evaluation	0	
Taking action in case performance is over required standard	0	
Taking action in case performance is below required standard	0	
Notice of results of performance to the public	0	
Data management	0	
Preparation of DWASHB reports and financials	4	
Review complaints sent by Water Users	230	
Reporting for O&M	0	
Providing feedback to Water Users Committees and private operators	104	
Review of O&M plan	6	
Revising PPP contract if necessary	0	
Termination of PPP contract	0	
Evaluation of the execution results of PPP contract	0	
Inspection of functioning of water supply systems	0	
Handover of water supply systems from PO to District	0	
Issue of certificate for termination of PPP contract	0	
Development of evaluation plan (technical, financial, socio-economic)	0	
Defining indicators (ex. water coverage)	0	
Setting evaluation methods	0	
Data sources	0	
Timeline	0	

Roles and responsibilities	0	
Evaluation of executed works	0	
Reporting of evaluation	0	
DWB Meetings	0	
Quarterly meetings	12	
Office meetings	0	
Management meetings	130	
Steering committee	4	
Reflection meeting	6	
Workshops, trainings and other meetings	296	
Follow up Sanitation services	72	
Hygiene promotion	142	
	0	
	0	
	0	
	0	
<i>total number of work days needed to support wash in district</i>	1642.63889	322.638888

Number of staff needed

ANNEX II: Current Direct Support Cost

CURRENT SCENARIO			N of hours spent per person on different activities identified as part of current local government direct support to water supply service																			
Posts	Current number of people in the	Current yearly gross salary for the role	Supervision of works	Technical support to artisans and	Monitoring functionality & service delivery	Planning & coordination	Others	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	Activity x	
Director of department	1	13,200,000.00	1	1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land manager at sector level	17	7,500,000.00	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water and sanitation officer / engineer	2	11,700,000.00	7	5	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanitation & hygiene officer	1	11,700,000.00	5	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health & sanitation officer	1	7,500,000.00	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning & Monitoring officer	1	11,700,000.00	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Budget officer	1	12,285,000.00	0.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Executive committee	1	24,000,000.00	0.5	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Executive secretary of district & 2 vic	3	13,644,324.00	1	0.5	0.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Envi health officer at HCF	17	7,500,000.00	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District WASH B permanent Secretar	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
X	0																					
X	0																					
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		Per diems of staff (an	7000	7000	7000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Transport costs (fuel,	40000	40000	40000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Other Direct Support fixed costs Total yearly

Office costs and admin (in total per month)	540000
Costs of meetings and workshops (meals,	675000
Other costs	558000

