WaterFund
Financing the Water Sector
WATER SECTOR TRUST FUND

MINISTRY OF WATER SANITATION AND IRRIGATION

HARAMBEE

JOINT ANNUAL OPERATIONS MONITORING EXERCISE (JAOME) REPORT

FEBRUARY 2024

WATER SECTOR TRUST FUND

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LIST OF ABBREVIATIONS AND ACRONYMS

ASAL	Arid and Semi-Arid Lands
CBO	Community Based Organisation
CFA	Community Forest Association
CPC	Community Project Cycle
Covid_19 ERP	Covid 19 Emergency Response Programme
CRM	County Resident Monitor
CSI	County Sustainability Index
DERP	Drought Emergency Response Programme
DPs	Development Partners
DTF	Decentralized Treatment Facility
GESI	Gender Equality and Social Inclusion
GGEP	Green Growth and Employment Programme
IFAD	International Fund for Agricultural Development
J6P	Joint Six Programme
JAOME	Joint Annual Operations Monitoring Exercise
KWSP	Kenya Water and Sanitation Programme
MHM	Menstrual Hygiene Management
MIS	Management Information System
MTAP	Medium-Term Arid and Semi-Arid (ASAL) Programme
MWSI	Ministry of Water, Sanitation and Irrigation
NRW	Non-Revenue Water
OBA	Output Based Aid
PSF	Public Sanitation Facility
RBF	Results Based Financing
RIP	Rural Investments Programme
RWH	Rainwater Harvesting
SI	Sustainability Index
SIP	Systems Integration Project
UBSUP	Upscaling Basic Sanitation for the Urban Poor
UIP	Urban Investments Programme
UPC	Urban Projects Concept
VIP	Ventilated Improved Pit-latrine
WASH	Water, Sanitation and Hygiene
WSPs	Water Service Providers
WASREB	Water Services Regulatory Board
WRA	Water Resources Authority
WRI	Water Resources Investments
WRUA	Water Resource Users Association
WU	Water Utility

ANNEXES

EXECUTIVE SUMMARY

WaterFund is dedicated to enhancing access to water and sanitation services in a sustainable manner, continually refining its operational processes to ensure the delivery of impactful, cost-effective projects across counties in collaboration with stakeholders. WaterFund actively engages stakeholders throughout its operations, fostering a culture of collaborative learning for continuous improvement. The adoption of the Joint Annual Operations Monitoring Exercise (JAOME) framework by WaterFund has proven instrumental in assessing the sustainability of its funded projects. JAOME not only offers insights into the performance of investments but also plays a vital role in extracting valuable lessons that enhance transparency in WaterFund's operations and to enhance future investments. Key parameters such as operational status, revenue collection, age/survival, and the overall condition of investments serve as crucial benchmarks, providing insights into the outputs, outcomes, and impacts of projects beyond the active implementation phase.

JAOME's objectives are multifaceted, including establishing the operational status of funded investments, providing baseline data for tracking project sustainability, presenting detailed geo-referenced data on investment status, identifying operational issues, and recommending and implementing remedial measures. Furthermore, JAOME serves as a valuable tool for documenting lessons learned, offering insights into what worked, what did not, and why. This information informs WaterFund's future investment planning and priorities, ensuring a strategic and informed approach to sustainable development of water and sanitation services. The inclusion of a public portal with geo-referenced points is a clear manifestation of the WaterFund commitment to transparency, reporting and accountability.

The methodological approach adopted in undertaking JAOME 2022 has enabled realization of the aforementioned objectives. The exercise was undertaken by 11 field teams comprising of Team Coordinators, Officers, County Resident Monitors/ County Resident Engineers. The overall coordination was provided by the Planning and Quality Management in consultation with Programmes Department whereas ICT provided technical backstopping. The targeted projects totalling 318 in number were a census of projects funded between 1st July, 2017 to 30th June 2022. During the exercise, 310 projects were reached translating to 97% of the target with a total of 3,068 investments. This not only points to the success of the exercise but also provides a rich data set from which the inferences can be drawn based on the analysis of the data to generate the relevant information that is key in decision making.

It is worth noting that whereas only 290 general project forms were submitted,

the 3,068 investments forms that were submitted totalled to 310 unique project records. The variance of the 20 projects is attributable to the fact that there were cases where it was not possible to get records on the general project but the investments were existing and accessible. There were also challenges faced during the exercise such as insecurity in some project target areas; limited data collection time; unavailability of respondents at some project sites coupled with tough terrain in some vast counties with inadequate infrastructure. The WaterFund leveraged on technology, past project information and the County Resident Monitors and Resident Engineers due to their familiarity with the target projects and areas. These strategies were deployed and proved effective thus contributing to the success of the exercise.

The WaterFund being cognizant of the fact that there was a gap in undertaking the JAOME exercise as the last was undertaken in 2019, the approach of JAOME 2022 considers this fact hence the census approach to provide complete data upon which successive exercises will be hinged. The findings indicating an overall sustainability index of 61% with 38% in Rural, 48% in Urban, 51% in Results Based Financing and 37% in Water Resources and Climate Change across investment window.

The presentation of the findings having adopted varied visualization approaches; graphics, tables and figures complemented by narrative explanations ensures ease in understanding the JAOME report. The clustering of programme projects with sustainability index analysed for each as follows: Aid on Delivery (AOD)-90%, Drought Emergency Response Programme(DERP)-86%, Ending Drought Emergencies-Climate Proofed Infrastructure (EDE-CPIRA)-65%, EU-SHARE-51%, Green Growth and Employment Programme (GGEP)-35%, Covid 19 Emergency Response Programme-100%, IFAD Upper Tana Natural Resource Management Programme (UTaNRMP)-57%, Joint Six Programme (J6P)-54%, Output Based Aid (OBA)-98%, Upscaling Basic Sanitation in Urban Poor (UBSUP)-88%, Urban Project Cycle (UPC)-76% and Water and Livelihoods Programme (WLP)-48%.

These findings serve as crucial indicators of successful strategies, areas that require improvement, and valuable lessons to enhance overall project effectiveness. The insights gained are pivotal for guiding future programming, ensuring enhanced project sustainability, and aiding in the prioritization of investments amid competing demands for limited resources. The conclusions and recommendations derived from these findings, combined with the invaluable lessons acquired, establish a wealth of data for evaluating the success rate and form a strong foundation and potential of influencing investment policies in water sector financing.

1

INTRODUCTION

CHAPTER 1: INTRODUCTION

1.1 Background

The Ministry of Water, Sanitation and Irrigation (MWSI), Water Sector Trust Fund (WaterFund) and Development Partners (DPs) are increasingly emphasizing the need to ensure sustainability of investments in the water sector. The investments in water, sanitation and water resources management are aimed at fulfilling the mandate of the Fund in providing conditional and unconditional grants to counties and assist in financing development and management of water services in marginalised or underserved areas as established in Water Act 2016.

WaterFund developed the operations monitoring framework for assessing the functionality, performance and sustainability of all its investments. In order to determine the sustainability of the investments, the Fund conducts a Joint Annual Operations Monitoring Exercise (JAOME). The purpose of the JAOME exercise is for performance assessment of its investments in order to support long term planning and identify the operational status of supported investments to ensure better controls for future funding based on performance. JAOME enables WaterFund to monitor coverage and access, ensuring accountability for the past investments and also giving insight on project functionality and sustainability by supporting learning on what kind of investments work and why, thereby informing future investment planning and prioritization. The JAOME 2022 had a target to monitor 318 projects that were funded between 1st July 2017 and 30th June 2022 across 45 Counties of Kenya. During the exercise a total of 290 projects were monitored translating to 91% of the target. It is worth noting that out of the target projects that were a census of all projects financed in the stated period, 310 projects had their investments being reached therefore, the entailed 3,068 investments were obtained from the 310 projects (i.e., Individual project components), out of which 140 were under Results Based Financing (RBF), 975 under the Urban Investment Programme (UIP), 1,476 under Rural Investment Programme (RIP) and 477 under Water Resources Investments.

The exercise was undertaken by 11 Teams comprising of team coordinators, officers and County Resident Monitors and Resident Engineers (CRMS/REs) with the ICT team providing technical backstopping. The enumerators used an ODK mobile application, after which the collected data was analysed to visualize the results and findings including geo-referenced maps and graphics on key parameters. The plan is to publish the information such that it is publicly available by embedding a JAOME dashboard on the WaterFund website in order to enhance transparency, accountability and sustainability.

1.2 Rationale

The sustainability of projects is key to the delivery of water and sanitation services. The JAOME provides the data and information for determination of the sustainability of projects. The key parameters for determining sustainability index are weighted based on their level of importance in contribution to the sustainability of the project. The key parameters used to derive the sustainability index are: revenue collection, operation status, age/ survival and longevity and condition of the projects.

Public and private entities continually mobilize resources for investment in the water sector and after the implementation of the projects is completed, it is imperative to determine whether the targeted outputs and outcomes of the project intervention are being realized. The Organization for Economic Co-operation and Development (OECD) in its Evaluation Criteria for projects, recognizes the need for projects to be evaluated on sustainability aspects. As best practice, the formulation and design of projects puts sustainability at the centre to ensure that the resultant outputs and outcomes of the projects continue to benefit the intended beneficiaries far beyond the active phase of the project implementation.

In order to objectively determine the resultant outputs and outcomes of the its funded projects beyond their completion phase, the WaterFund adopted JAOME as a framework for monitoring the projects outputs, and to establish an information resource that gives hints on outcomes and impacts of the interventions. The results of the exercise are critical in decision support for the Fund and as a "yard stick" against which investment performance is measured. Further, the Fund through JAOME addresses some of the outstanding technical and financial audits arising from the implementation of its projects and investments thus ensuring transparency, equity and accountability to stakeholders.

1.3 Objectives

The specific objectives of the JAOME 2022 operations monitoring exercise were to;
1) To establish the operational status of funded investments,
2) To provide baseline data for tracking sustainability of projects,
3) Enable the Fund present detailed, geo-referenced data on the operational status of funded investments,
4) Identify operational issues, develop and implement remedial measures,
5) Document lessons learnt on what worked, what did not and why thereby inform future investment planning and priorities.

2

METHODOLOGICAL APPROACH

CHAPTER 2: METHODOLOGICAL APPROACH

2.1 Preparations and Work Plan

To achieve the goals of the JAOME exercise, recognizing its comprehensive nature and mindful of resource constraints, a concept note was prepared for the Joint Annual Operations Monitoring Exercise 2022. The concept note underwent a thorough development, review, and approval process involving stakeholders. This inclusive approach ensured a consultative and participatory engagement, aligning the exercise with the collective vision.

The planning of the JAOME exercise was methodically organized through the utilization of a Gantt chart. This approach facilitated the scheduling of key activities, which were further segmented into manageable work packets with well-defined outputs and clear timelines. Essential planning components encompassed strategic meetings to formulate a robust road map, meticulous mapping of all projects and investments to establish the sampling framework, and the creation of comprehensive training materials to orient enumerators effectively. This structured planning methodology aimed to streamline the execution of the JAOME exercise, promoting efficiency and accuracy throughout the process.

During the planning of the exercise, the WaterFund's Planning and Quality Management department in close collaboration with the Programmes departments formed a JAOME committee to deliberate on the approach and strategy for the undertaking the JAOME. Consultative meetings were held throughout the planning period to determine the timeframes for the exercise as well as the budget of the exercise.

The JAOME committee members were tasked to compile the lists of projects to be visited during the exercise. The list was to comprise all the completed projects that had been implemented and completed between 1st July, 2017 and 30th June, 2022. The compiled project list was then shared with County Resident Monitors and Resident Engineers for review to ensure that the project funded scope and the implemented scope are accurately captured. Based on the validated project's information, the JAOME committee then clustered the projects and developed a field plan and logistics based on the proximity of the projects to be able to capture all the project within the allocated time.

2.2 Review of Data Collection Tools

The data collection tools were reviewed for efficacy as they had been used to undertake similar exercises of JAOME. The review was aimed at incorporation of the lessons learnt from the use of tools including; simplifying and making the tools relevant to the objectives of JAOME thus making them easier to be utilized by the enumerators.

The reviewed tools (General form and the investment form) were then preloaded with projects' information in readiness for use during the field work.
The general form includes questions on governance, financial management and beneficiaries of the project. The General Form is as shown on Annex 1.

The investment form had specific questions on the completion status, condition, maintenance, operational status, operations responsibility of each investment; revenue collection, number of beneficiaries, service reliability, with specific questions on Gender Equality and Social Inclusion (GESI). The data structure for the investment types in the investment form is presented in Annex 2.

In addition, a nationwide map of the previous data collection exercises was prepared and shared in KML format that could be opened on any device that has a Google Earth application. The map was an additional tool for guiding enumerators in identifying project locations for easier directions as well as planning of ground logistics.

2.3 Training of Enumerators

The purpose of the training was for re-orientation of the data collection teams comprising of WaterFund Officers, County Resident Monitors and Resident Engineers to ensure quality of data collected. Since most of the enumerators had participated in the previous exercise, a re-fresher training was conducted in a one-day workshop that focused mainly on the following pertinent areas:

1) Technical aspects investments,

2) Installation and walkthrough of the data collection App,

3) Operations field plans and logistics,

4) Security precautions, cross-cutting issues and roles of different actors

2.4 Field Planning and Logistics

Detailed field plans were prepared prior to actual field exercise with the cluster teams expected to share their revised field plans based on the approved general

field plan for quality assurance by the P&QM department. This was to ensure that the plans were practical and fitted into the emerging conditions of the field exercise. The revision was done in liaison with the respective CRMs and Resident Engineer based on availability of Implementing Partners.

The field plans were key in tracking the progress during field work and in reallocation of resources as and when a need arose. The security intelligence information was also obtained well in advance particularly for areas prone to insecurity.

The organization of the field survey entailed the formation of a team based on roles and responsibilities that were agreed upon as follows:

1. **Coordinator:** to be responsible for overall coordination, final budget, plans, authorizations and official communications to stakeholders
2. **Cluster Team Leaders:** will be responsible for coordination of field data collection within clusters; directly responsible for data quality, completeness and transmission; overseeing field operations including transport coordination and authorization, team security and communication; data cleaning prior to analysis; ensuring timeliness and adherence to field schedules; simultaneous formulation of issue logs during data collection; conducting orientation training for CRMs/REs; and cluster specific reporting.
3. **Field Officers:** participating in formulation of field schedules; data collection and team performance valuation; responsible for provided field equipment; and assisting in data cleaning.
4. **County Resident Monitors and Resident Engineers:** liaison and advance communication with projects prior to visits; identification of investments within the cluster; participating in formulation of field schedules; data collection and team performance valuation; and security assessments and advise prior to field visits.

The field teams were organized into 11 clusters based on proximity of the projects with each cluster being led by a team leader to ease movement of the cluster teams. Logistically, the clusters were allocated a vehicle each and wherever there were challenges, additional support was provided and the team facilitated in achieving the set milestones. The reporting structure was such that the team members reported to cluster team leader whom then reported to the JAOME coordinator through daily reports.

The clusters were 11 teams as per table 1 below:

Table 1: List of Counties per cluster and number of sampled projects per County

TEAM	County	Rural	WRI	Urban	RBF	Total
TEAM 1	Kwale	18	3	-	-	21
	Mombasa	-	-	1	-	1
	Kilifi	1	-	3	-	4
	Taita Taveta	4	-	2	-	6
	Makueni	-	-	4	-	4
	Kajiado	-	1	4	-	5
	Kitui	-	-	3	-	3
TEAM 2	Machakos	-	-	4	-	4
	Kiambu	-	-	1	-	1
	Nairobi	-	-	1	-	1
TEAM 3	Garissa	11	-	1	-	12
	Tana River	5	5	1	-	11
	Wajir	10	1	-	-	11
TEAM 4	Lamu	8	2	1	-	11
	Mandera	2	2	-	-	4
	Baringo	1	-	-	-	1
	Nakuru	-	-	5	1	6
TEAM 5	Samburu	-	-	1	-	1
	Marsabit	3	1	-	-	4
	Isiolo	7	2	-	-	9
	Laikipia	9	5	2	-	16
TEAM 6	Tharaka Nithi	14	8	3	-	25
	Embu	-	6	1	2	9
TEAM 7	Meru	-	19	1	-	20
	Kirinyaga	-	11	2	-	13
	Nyandarua	-	-	5	-	5
TEAM 8	Nyeri	-	17	3	2	22
	Muranga	-	12	1	1	14
	Nyamira	-	-	1	-	1
	Kisii	-	-	1	-	1
	Migori	12	3	1	-	16
	Homa bay	-	-	3	-	3
TEAM 9	Kisumu	-	-	1	1	2
	Siaya	-	-	1	-	1
	Busia	-	-	1	-	1
	Bungoma	-	-	2	-	2
	Kakamega	-	-	1	-	1
	Uasin Gishu	-	-	1	-	1
	Nandi	14	4	1	-	19
TEAM 10	Kericho	-	-	3	-	3
	Bomet	-	-	1	-	1
	Narok	4	2	-	-	6
	Trans Nzoia	-	-	1	-	1
TEAM 11	Turkana	9	-	2	-	11
	West pokot	2	-	2	-	4
	TOTAL	**134**	**104**	**73**	**7**	**318**

2.5 Project Selection and Sampling of Investments

The sampling frame, first employed in JAOME 2017 was designed such that each year 33 percent of the projects are visited and with the 33% rotating so that all of the projects are visited once within the three years. However, in the JAOME 2022 a census approach was adopted implying that all projects completed under various investments including Rural, Water Resources, Urban and Results Based Financing between 1st July, 2017 and 30th June, 2022 were targeted.

Table 2: Projects per financial year

PROJECTS PER INVESTMENT WINDOW						
Year	Year of Completion	Rural Projects	Water Resources	Urban Projects	RBF Projects	Total projects
1st year	1st July 2021 – 30th June 2022	7	2	2	0	
2nd year	1st July 2020 – 30th June 2021	35	23	4	1	63
3rd year	1st July 2019 – 30th June 2020	19	22	11	5	57
4th year	1st July 2018 – 30th June 2019	43	14	20	1	78
5th year	1st July 2017 – 30th June 2018	30	43	36	0	109
		134	**104**	**73**	**7**	**318**

It was important to set a target of monitoring all the completed projects within the defined period. This was taking into consideration the fact that the GGEP, WLP, Covid-19 Emergency Response Project, Output Based Aid and J6P had closed whereas UPC and UBSUP had completed KfW Phase III and were transitioning to KfW Phase IV disbursements while IFAD was nearing its closure. The table below summarizes the sampling frame for the JAOME 2022 calculated as 318 projects.

Table 3: Projects per programme per investment window

PROJECTS PER PROGRAMME PER INVESTMENT WINDOW					
Programme	Rural	WRI	Urban	RBF	Total
AoD	-	-	-	1	1
Covid-19_ERP	-	-	1	-	1
DERP	6	-	-	-	6
EDE CPIRA	8	1	-	-	9
EU_SHARE - MTAP II	20	-	-	-	20
GGEP	23	13	-	-	36
IFAD	-	72	-	-	72
J6P	71	18	-	-	89
OBA	-	-	-	6	6
UBSUP	-	-	37	-	37
UPC	-	-	35	-	35
WLP	6	-	-	-	6
TOTAL	**134**	**104**	**73**	**7**	**318**

Under each project, there are a number of project components or investments. For some investment types, the number of funded investments included such a large number that it was not feasible to visit all of them. These included: Individual connections, institutional connections, consumer meters and household toilets. It was thus agreed that for institutional connections and consumer meters, a sample 5-10 investments per project would suffice and for household toilets, a sample of 3-5 toilet blocks per project.

2.6 Data Collection, Data Verification and Submission
Prior to JAOME exercise, the forms were reviewed and test runs were undertaken to ensure that all hitches are addressed. The questionnaires were designed with self-checking mechanisms to prevent obvious errors and data quality checks to make the information generated in the analysis more reliable and verifiable.

During data collection, team leaders ensured daily screening and verification of all the data collected during the day before actual submission. Daily submissions were emphasized to reduce the risk of data loss and also give near real-time progress of the various cluster teams.

In as much as the team leaders were tasked to verify the collected data before submission, data cleaning of the submitted records was also a critical step of the process. This was premised on the fact that teams were collecting multiple data hence the probability of error was likely to occur thus data cleaning was necessary to correct such errors.

2.7 Analysis and Reporting
The analysis framework mainly focused on the sustainability of investments and projects under the various investment windows and programmes. In addition, the analysis also had the perspective of ranking the counties based on their Sustainability Index score. The sustainability index (SI) was developed as a key performance metric to facilitate assessment and monitoring of sustainability of investments in the Counties. It is a statistical measure describing the sustainability of investments for each County. For the purposes of the assessment of outcomes and outputs of the investments, sustainability was defined as the ability of an investment to realize the objectives within 5 years of operation. The Sustainability Index comprised of four categories- the Functionality (Operational Status) of an investment, Revenue Collection, Age and Survival rate (Longevity), and the Condition of the investment. The SI function is specified as:

SI=f (FR, RC, AS, GC)

Where:

SI is the Sustainability Index

FR is the Functionality (Operational Status) of an investment

RC is the Revenue Collection

AS is the Age and Survival/ Longevity of an investment

GC is whether the investment is in Good Condition

The Sustainability Index score is between 0 - 100%, with 100% depicting a high sustainability rate of the investments. The highest weight (50%) was allocated to revenue collection given that without revenue collection, the investments hardly have long term sustainability. Functionality, also referred to as operational status, is a key attribute to describe the aspect of the investment ability to provide the services and was allocated the weight of 25%. The age and survival rate (Longevity) of the investment which ascertains existence of investment was allocated a weight of 15%. The condition of an investment was allocated weight of (10%) since the condition is important and essential in enhancing the usability and sustainability of the facility. The indicators, definition, formula and weight are presented in table 4 below:

Table 4: The four categories of Sustainability Index

Indicator	Definition	Formula	Weighting in Index
1. Revenue Collection	Indicates if water charges are collected.	Calculated as a percentage of investments with revenue collection from total number of investments. This is limited to investments that are expected to collect revenue, namely: Distribution systems; intakes; water resources management structures; livelihoods; Public Sanitation Facilities (PSFs), and; Decentralized Treatment Facilities (DTFs).	50%
2. Functionality of the investment	The percentage of investments that are operational.	Percentage of investments that are fully operational from the total number of investments.	25%
3. Age and Survival (longevity) of an investment	The percentage of investments that are still operational after 2 years since completion.	Percentage of investments that are operational and are over 2 years old out of all the investments of the age over 2 years.	15%
4. Condition of an Investment	The percentage of operational investments that are also in good condition.	Investments that are in good condition and operational divided by total number of investments.	10%
Total			100%

2.8 Dissemination of Results

The enhanced accessibility of JAOME reports on diverse WaterFund platforms in easily shareable formats has significantly increased the consumption of these reports. As the coordinating department, the Planning and Quality Management team is committed to ensuring the seamless publication and widespread dissemination of the report to stakeholders.

The findings from JAOME underscore the necessity for additional data collection and in-depth analytical work. It is imperative to thoroughly investigate the questions raised by JAOME to refine WaterFund support, aiming at bolstering the sustainability of investments. These results play a crucial role as a feedback mechanism for informing the appraisal, selection, and implementation processes for investments, contributing to a more informed and effective decision-making framework.

3

STUDY FINDINGS

CHAPTER 3: STUDY FINDINGS

During the joint annual operations monitoring exercise 310 projects were monitored comprising a total of 3068 investments (i.e., individual project components) out of which 3014 were found to be complete translating to 98% as shown in the figure 1 below.
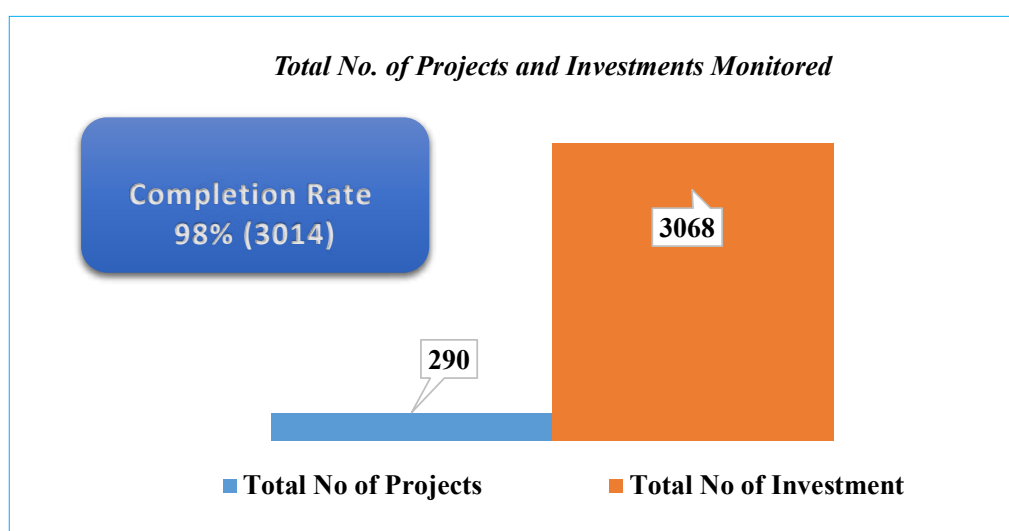
Figure 1: Total projects, investments monitored and overall completion rate

The 3,068 investments shown in figure 1, included 140 investments under Results Based Financing (RBF), 975 under the Urban Investment Programme (UIP), 1,476 under Rural Investment Programme (RIP) and 477 under Water Resources Investments (WRI).

3.1 Completion Status

The projects implemented in the year 2019 and 2020 (43 and 56 projects respectively) were all 100% complete at the time of the monitoring. Additionally, in 2018, 122 out of 124 projects were complete which translates to 98% project completion rate. The two incomplete projects were as a result of consumer metres that had not been installed. Moreover, in 2021, there were 47 out of 48 projects marked as complete recording a 98% completion rate. The incomplete project had 4 meters, 3 water resources infrastructures and 2 water kiosks that were said to be incomplete due to lacking of a water source.

In 2022, a notable achievement was marked with the completion of 17 out of 19 projects, resulting in an impressive 89% completion rate. Unfortunately, two projects could not reach completion due to instances of vandalism during the implementation period. For a visual representation of the annual completion rate, please refer to Figure 2.
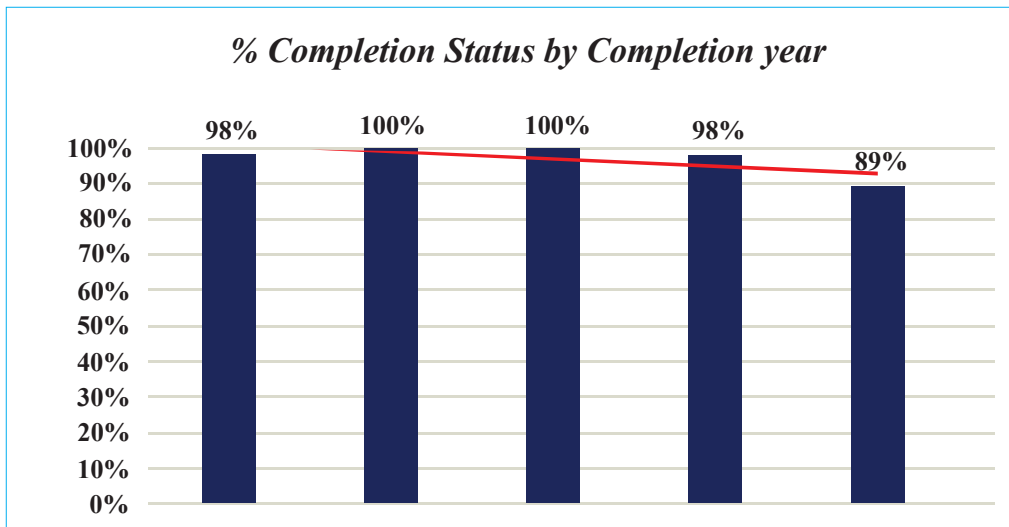
Figure 2: Completion status by completion year (2018 – 2022)

3.2 Completion status by category

As highlighted in figure 3 below, Investments under the Sanitation category recorded the highest completion rate of 100%, followed by Water supply at 99% and lastly Water resources at 96%. The distribution of investments under water supply, sanitation and water resources categories were as follows; Water supply had 1,644 investments, Sanitation had 803, and Water Resources had 619 Investments.
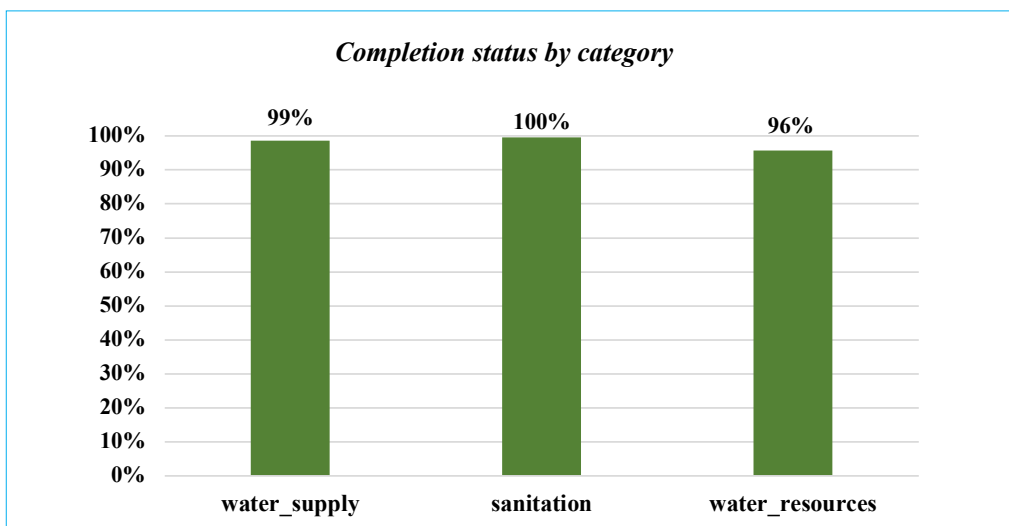
Figure 3: Completion status by category

3.3 Completion status by programme

In relation to specific programme performance, AOD, Covid – 19 ERP, EU Share, and OBA recorded a completion rate of 100%. These were followed by J6P, GGEP and UBSUP that recorded an outstanding performance of 99% in project completion.

This was also closely followed by UPC at 98%, EDE CPIRA and WLP at 97% while IFAD had 94% completion rate. DERP recorded the least completion rate of 78%. The figure 4 below highlights programmes completion rate.
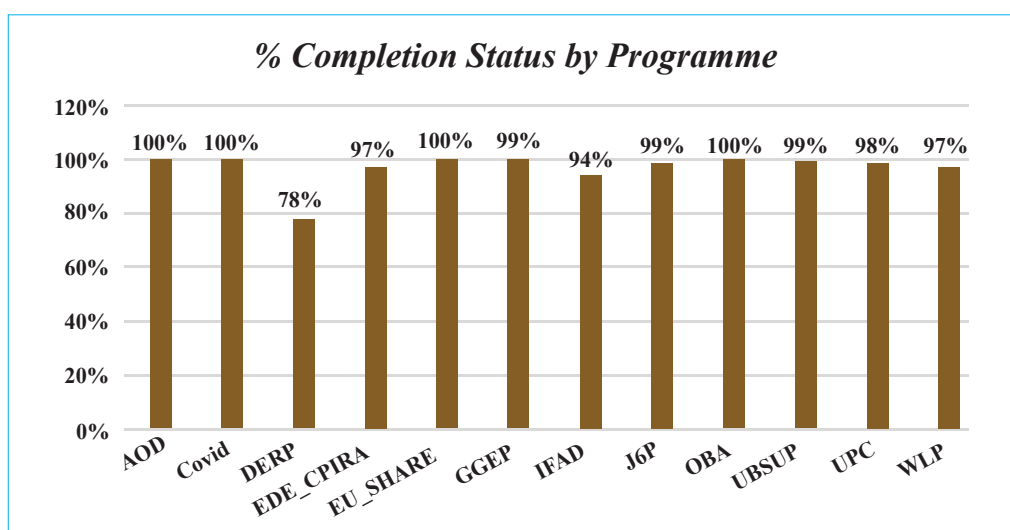
Figure 4: Completion status by programme

3.4 Geographical Coverage

The investments have a good geographical coverage in terms of county distribution. All counties were reached except for Elgeyo Marakwet and Vihiga which didn't have projects or investments within the target period. As per the table 5 below, 1,476 out of 3,068 of the investments monitored (48%) were under Rural Investments Programme (RIP) while 975 out of 3,068 investments (32%) were the Urban Investments programme (UIP), whereas 477 out of 3,068 (15%) were Water Resources Investments programme (WRI) and lastly 140 out of 3,068 (5%) were of the Results Based Financing programme (RBF). The table below indicates the county – wise distribution of investments as per the four investment windows.

Table 5: Number of investments monitored per county during JAOME 2022

County	Completion Rate (%)	Complete Investments	Total	RBF	RIP	UIP	WRI
Baringo	100%	1	1	0	1	0	0
Bomet	100%	6	6	0	1	5	0
Bungoma	100%	25	25	0	0	25	0
Busia	100%	51	51	0	0	51	0
Embu	98%	105	107	24	0	40	43
Garissa	100%	72	72	0	65	7	0
Homa Bay	100%	65	65	0	0	65	0
Isiolo	100%	55	55	0	54	0	1
Kajiado	100%	32	32	0	6	26	0
Kakamega	100%	40	40	0	0	40	0
Kericho	98%	60	61	0	0	61	0
Kiambu	100%	17	17	0	0	17	0
Kilifi	100%	39	39	0	0	39	0
Kirinyaga	94%	110	117	0	0	33	84
Kisii	100%	34	34	0	0	34	0
Kisumu	100%	88	88	13	0	75	0
Kitui	100%	54	54	0	0	54	0
Kwale	99%	78	79	0	78	0	1
Laikipia	100%	141	141	0	76	30	35
Lamu	98%	116	118	0	90	7	21
Machakos	100%	31	31	0	0	31	0
Makueni	100%	18	18	0	0	18	0
Mandera	100%	25	25	0	25	0	0
Marsabit	100%	12	12	0	11	0	1
Meru	93%	94	101	0	0	4	97
Migori	100%	173	173	0	143	10	20
Mombasa	100%	10	10	0	0	10	0
Muranga	99%	73	74	22	0	5	47
Nairobi	100%	13	13	0	0	13	0
Nakuru	100%	65	65	34	1	30	0
Nandi	98%	270	276	0	263	1	12
Narok	97%	64	66	0	58	2	6
Nyamira	100%	22	22	0	0	22	0
Nyandarua	100%	27	27	0	0	27	0
Nyeri	99%	142	143	43	0	48	52
Samburu	100%	11	11	0	0	11	0
Siaya	100%	27	27	0	0	27	0
Taita Taveta	100%	21	21	0	18	3	0

County	Completion Rate (%)	Complete Investments	Total	RBF	RIP	UIP	WRI
Tana River	95%	136	143	1	124	14	4
Tharaka Nithi	97%	144	149	0	71	42	36
Trans Nzoia	90%	18	20	0	0	20	0
Turkana	98%	353	362	3	349	6	4
Uasin Gishu	100%	21	21	0	0	21	0
Wajir	100%	42	42	0	41	0	1
West Pokot	93%	13	14	0	1	1	12
	98%	3014	3068	140	1476	975	477

The map below shows the geographical coverage of investments in the 45 counties during the monitoring exercise.
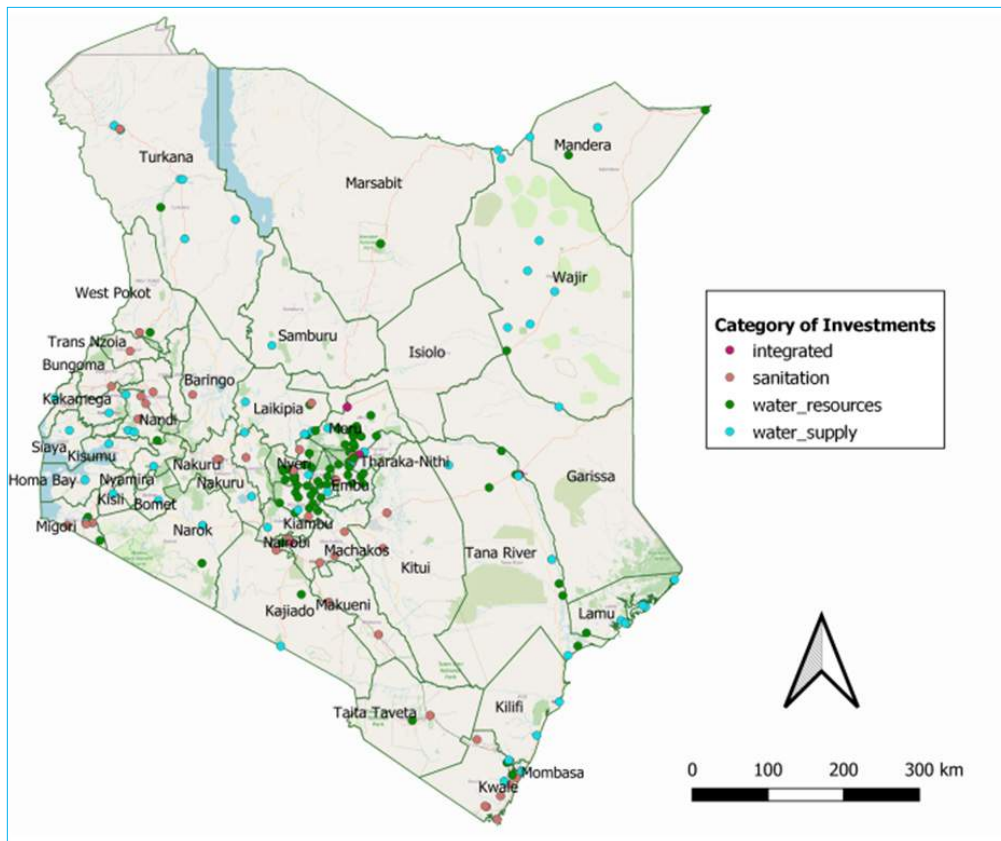
Figure 5: Geo-locations of the monitored investments per category of investments

3.5 Operational Status

The target is to have at least 95% of all infrastructure fully operational and in good technical condition by the end of 5 years. At the time of visit an average of 76% of projects were found to be operational with an average of 82.1% of the investments operational. As shown in figure 6, only 8% of the projects and 9.1 % investments were found to be non-operational across all programmes.

An investment was considered operational if it was fully operating at the time of visit; temporarily stopped if the structure was functional but not utilized, for example if the water source was temporarily dry, partially operational if some components were operating while others were not, and non-operational if the investment was completely non-functional due to not being operated\ used or the water source had permanently dried.
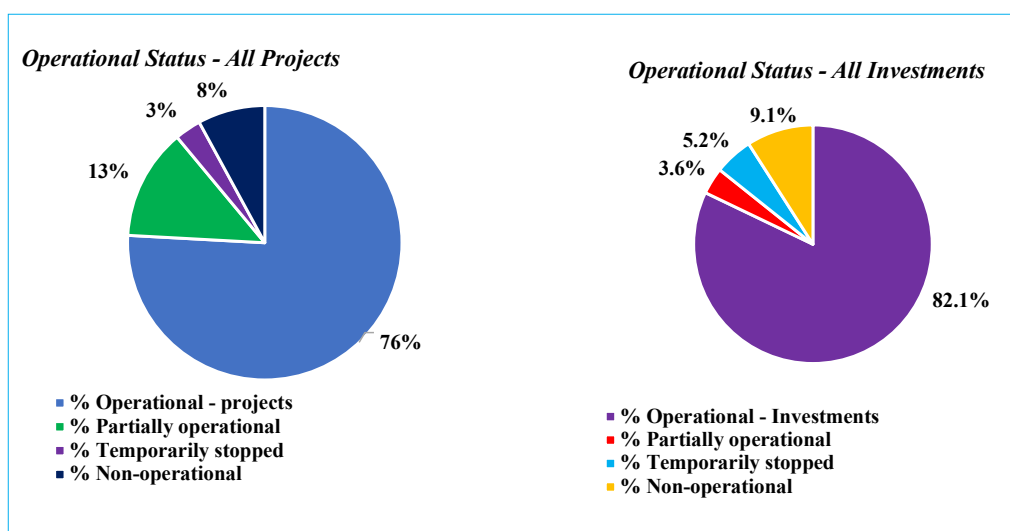
Figure 6: Overall operational status of projects and investments

3.6 Operational status of projects by completion year

As observed in the chart below, 79% of projects that were implemented in 2018 and 2019 were operational while 2020 and 2021, 71% and 73% of projects that were implemented were operational respectively. For projects that were implemented in 2022, only 68% were found to be operational. This is because only 19 projects had been completed at the time of monitoring out of which 13 were operational.
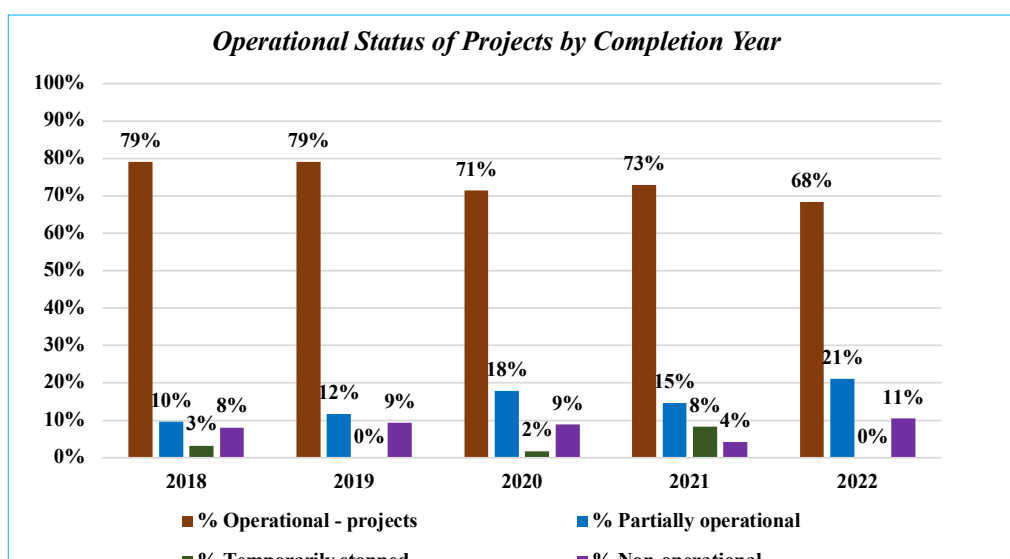
Figure 7: Projects operational status from 2018 to 2022

The operational status of projects by category is shown in figure 8 below.
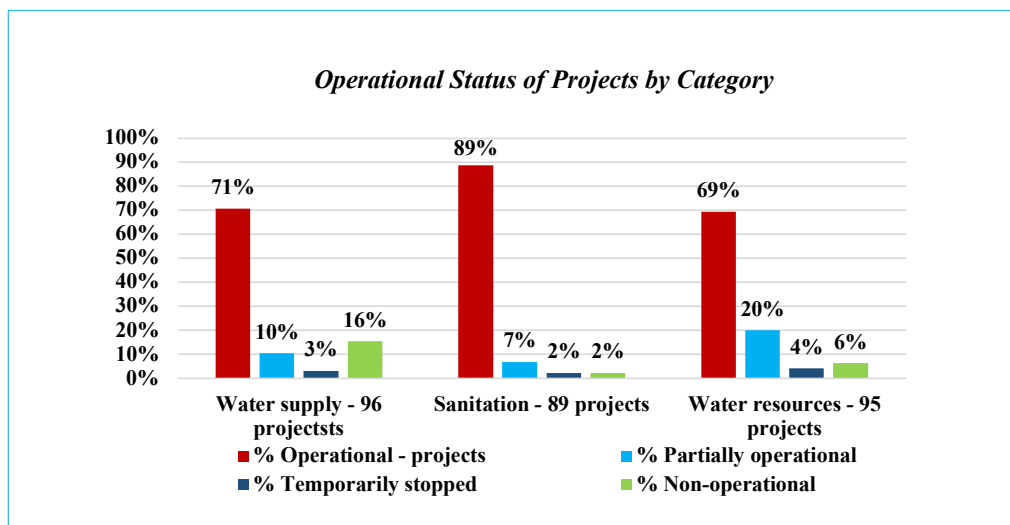
Figure 8: Operational status of projects by category

3.7 Operational status of investments

The operational status of investments implemented in 2020 recorded the highest number of operational status at 91%, while 2021 recorded the least at 73% as shown in the figure 9 below:
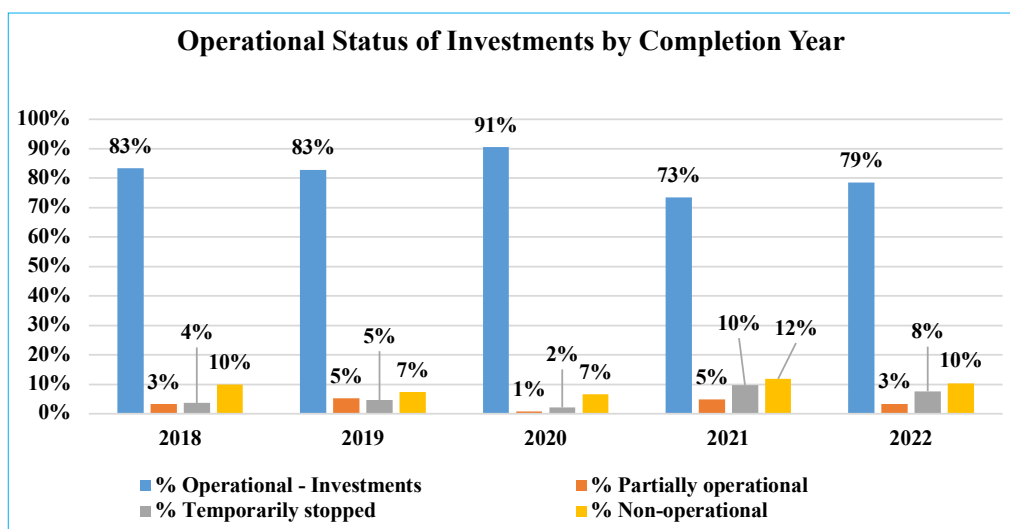
Figure 9: Investments operational status by completion year

3.8 Operational status by investment window

The figure 10 below shows that 98% of the RBF investments were operational followed by UIP at 90% and WRI at 80% whereas RIP registered the least operational percentage of 76%. This is due to issues with operational responsibility, vandalism and natural/climatic causes.

Operational Status of Investments by Investment Window
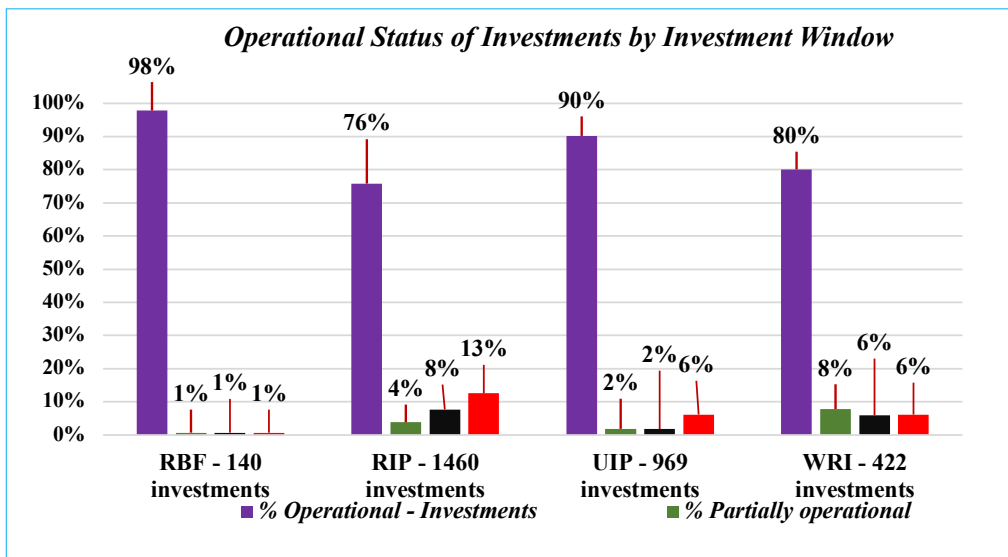
Figure 10: Investments operational status by investment window

As highlighted in figure 11 below, Investments under the Sanitation category recorded the highest operational status of 91%, followed by Water supply at 79% and lastly Water resources registered the least operational status of 76% due to natural/climatic causes.

Operational Status of Investments by Category
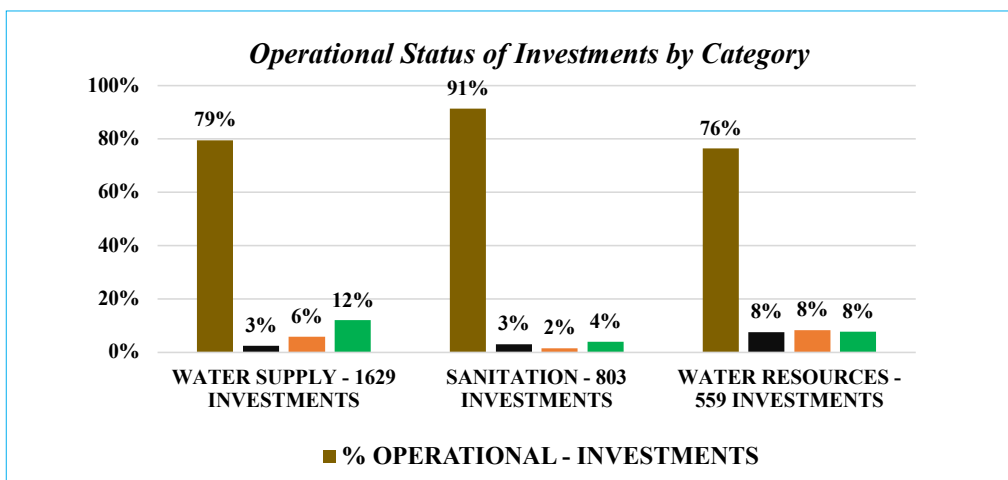
Figure 11: Investments operational status by category

3.9 Operational status by programme

The performance of the individual programmes in terms of operational status for the investments is presented in figure 12 below. The investments under AOD, DERP, Covid-19_ERP and OBA recorded operational levels that surpassed the expected 95% target. In relation to the specific programs, the Joint Six Programme (J6P) had highest number of investments monitored with a total of 756 investments, followed by GGEP 365 investments and IFAD 307 investments whereas AOD and Covid-19 ERP had the least number of monitored investments with 12 and 10 investments respectively.
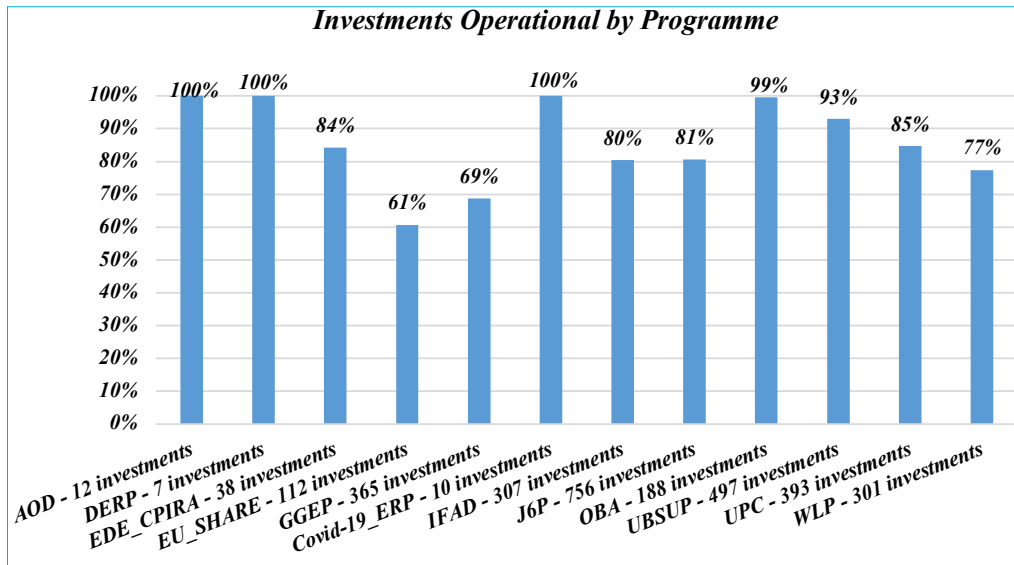
Figure 12: Investments operational status by programme

1. **AOD**: Under Aid on Delivery programme, one project was found to be fully operational, which had 12 investments that were 100% operational.

2. **DERP**: The Drought Emergency Response Programme had 7 investments that were 100% operational. All the projects for this programme were funded in 2018 and majority of the investments were intakes or storage tanks.

3. **EDE_CPIRA**: The Ending Drought Emergencies: Climate Proofed Infrastructure programme had 38 investments visited out of which 84% were operational.

4. **EU_SHARE**: The Medium-Term Arid and Semi-Arid Programme had 112 investments and 61% were found to be operational at the time of visit.

5. **GGEP**: The Green Growth and Employment Programme had 365 investments and 61% were operational.

6. **Covid-19_ERP**: Covid-19 Emergency Response Programme was implemented as Nairobi Emergency Response Project with 10 investments that were 100% operational.

7. **IFAD**: The International Fund for Agricultural Development Programme had a total 307 individual investments monitored and 80% were found to be operational.

8. **J6P**: The Joint Six Programme had 756 investments that were monitored and 609 out of 756 investments were operational which represents 81% of the total.

9. **OBA**: Output Based Aid programme had a total of 188 investments out of which 99% were found to be operational at the time of visit.

10. **UBSUP**: The Upscaling Basic Sanitation for the Urban Poor had a total of 497 investments monitored and 93% were found to be operational.

11 **UPC**: For the Urban Projects Concept 393 investments were monitored whereby 85% of were found to be operational.

12 **WLP**: The Water and Livelihood Programme had 301 investments monitored and 77% of were recorded as operational.

3.10 Operational status per County

Table 6: Investments operational status percentage per county

County	Operational	Partially operational	Temporarily stopped	Non-operational
Baringo - 1 investments	100%	0%	0%	0%
Bomet - 6 investments	33%	0%	0%	0%
Bungoma - 25 investments	100%	0%	0%	0%
Busia - 51 investments	98%	0%	2%	0%
Embu - 107 investments	80%	7%	1%	0%
Garissa - 72 investments	61%	1%	8%	0%
Homa Bay - 65 investments	95%	2%	2%	0%
Isiolo - 55 investments	78%	13%	2%	0%
Kajiado - 32 investments	94%	0%	6%	0%
Kakamega - 40 investments	100%	0%	0%	0%
Kericho - 61 investments	89%	0%	0%	0%
Kiambu - 17 investments	88%	0%	0%	0%
Kilifi - 39 investments	69%	0%	21%	0%
Kirinyaga - 117 investments	76%	6%	3%	0%
Kisii - 34 investments	91%	6%	0%	0%
Kisumu - 88 investments	100%	0%	0%	0%
Kitui - 54 investments	93%	4%	4%	0%
Kwale - 79 investments	68%	6%	5%	0%
Laikipia - 141 investments	84%	9%	3%	0%
Lamu - 118 investments	86%	3%	3%	0%
Machakos - 31 investments	97%	0%	3%	0%
Makueni - 18 investments	100%	0%	0%	0%
Mandera - 25 investments	16%	0%	0%	0%
Marsabit - 12 investments	58%	17%	8%	0%
Meru - 101 investments	82%	1%	3%	0%
Migori - 173 investments	74%	3%	8%	0%
Mombasa - 10 investments	100%	0%	0%	0%
Muranga - 74 investments	69%	5%	5%	0%
Nairobi - 13 investments	100%	0%	0%	0%
Nakuru - 65 investments	97%	2%	0%	0%
Nandi - 276 investments	86%	4%	3%	0%
County	Operational	Partially operational	Temporarily stopped	Non-operational

Narok - 66 investments	73%	0%	5%	0%
Nyamira - 22 investments	95%	5%	0%	0%
Nyandarua - 27 investments	100%	0%	0%	0%
Nyeri - 143 investments	89%	2%	2%	0%
Samburu - 11 investments	0%	0%	0%	0%
Siaya - 27 investments	96%	0%	0%	0%
Taita Taveta - 21 investments	81%	5%	0%	0%
Tana River - 143 investments	51%	1%	24%	0%
Tharaka Nithi - 149 investments	79%	6%	1%	0%
Trans nzoia - 20 investments	75%	15%	0%	0%
Turkana - 362 investments	75%	4%	10%	0%
Uasin Gishu - 21 investments	100%	0%	0%	0%
Wajir - 42 investments	64%	0%	24%	0%
West Pokot - 14 investments	71%	7%	7%	0%

3.11 Operational Status of Water Supply Investments

Out of 91 water supply projects that were monitored had a total of 1,644 investments whereby 79% were operational as illustrated in the figure 13 below.
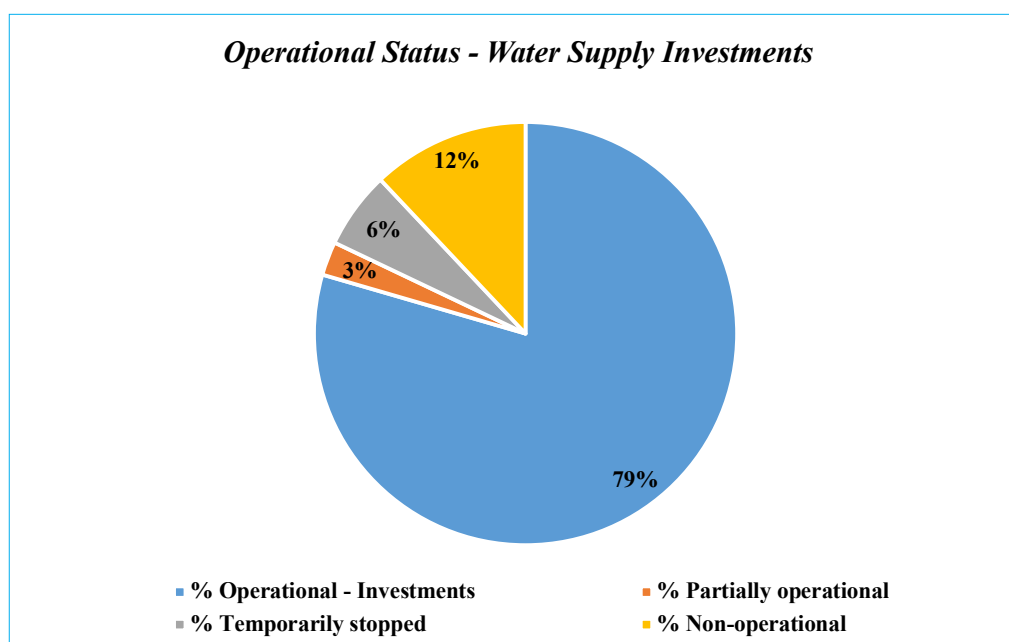
Figure 13: Operational status of Water Supply Investments

The investment type that had the highest percentage of operational investments was pipeline appurtenances with a score of 88%, followed by building investment type that comprises of fencing, laboratories and pump houses which scored 83% and rainwater harvesting which mostly comprises of roof catchments and storage tanks with a score of 79% as detailed below.
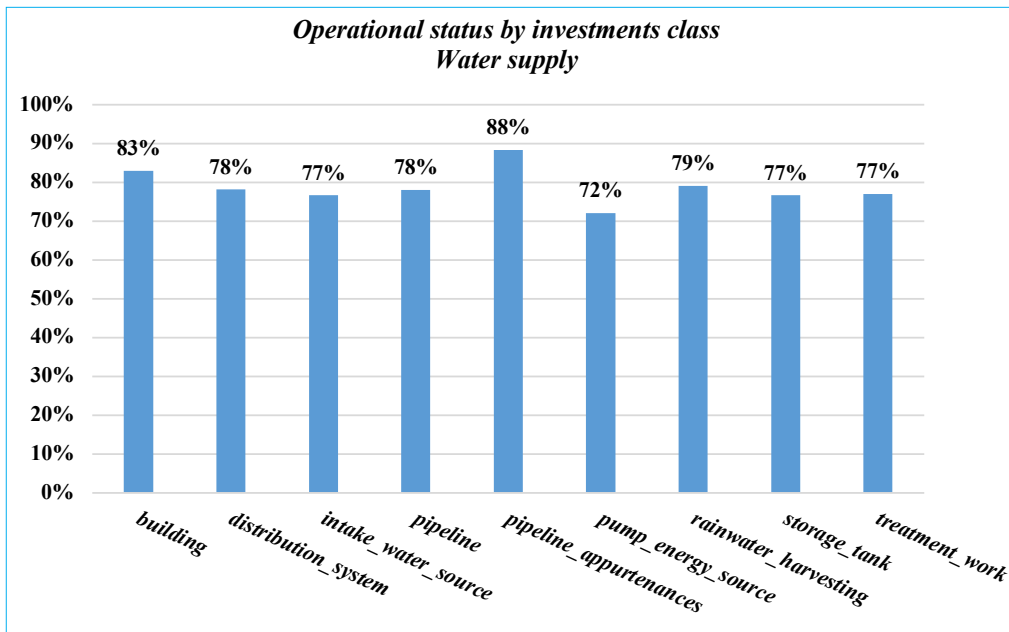
Figure 14: Operational status by investments class - Water Supply

As shown below, consumer meters, sectional steel tanks, elevated concrete tanks, reinforced concrete tanks were the individual investment types that scored above the 95% operational investments target.
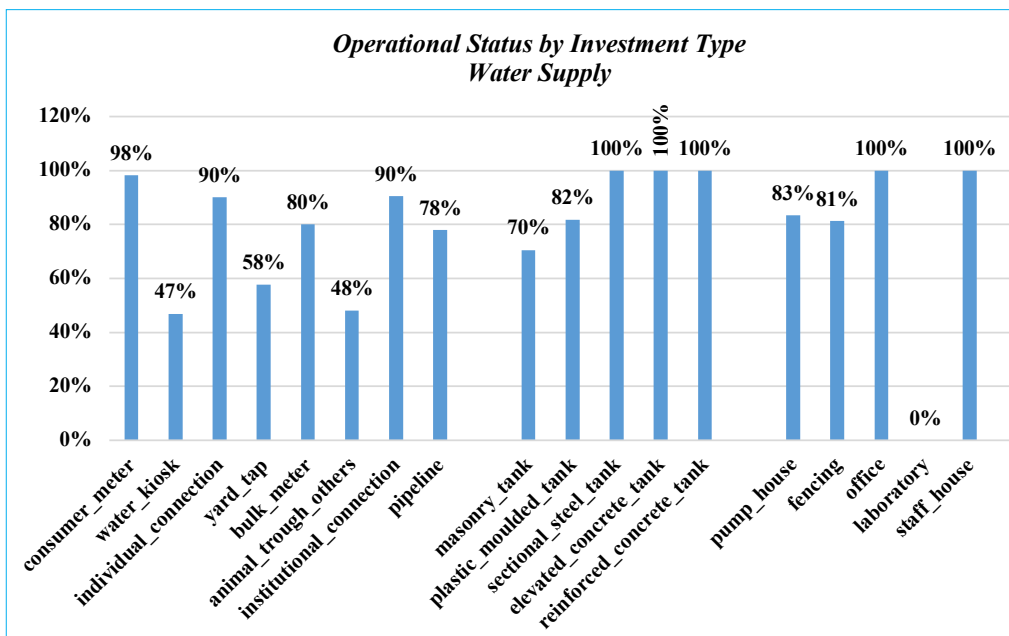
Figure 15: Operational status by investment type - Water Supply

3.12 Operational Status of Sanitation projects

During the joint annual operations monitoring exercise 89 sanitation projects were monitored and 79 were operational translating to 89% operational status as detailed in figure 16 below.
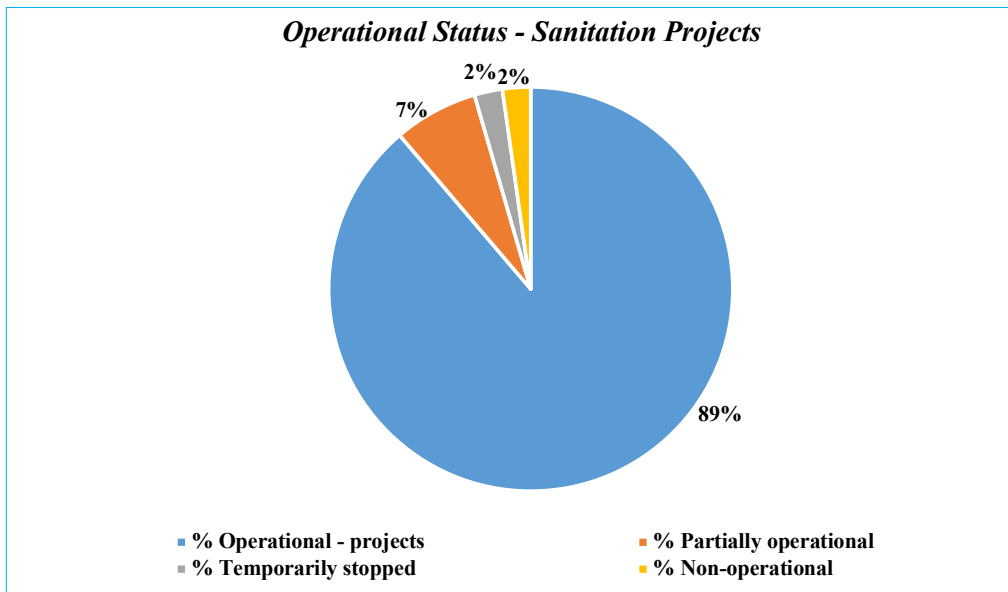
Figure 16: Operational status of Sanitation Projects

3.13 Operational Status of Sanitation Investments

At the time of monitoring, 803 sanitation investments were captured out of which 734 were found to be operational. This translates to 91% operational status which could be attributed to the fact that most sanitation projects require low maintenance costs compared to water supply and water resources investments.
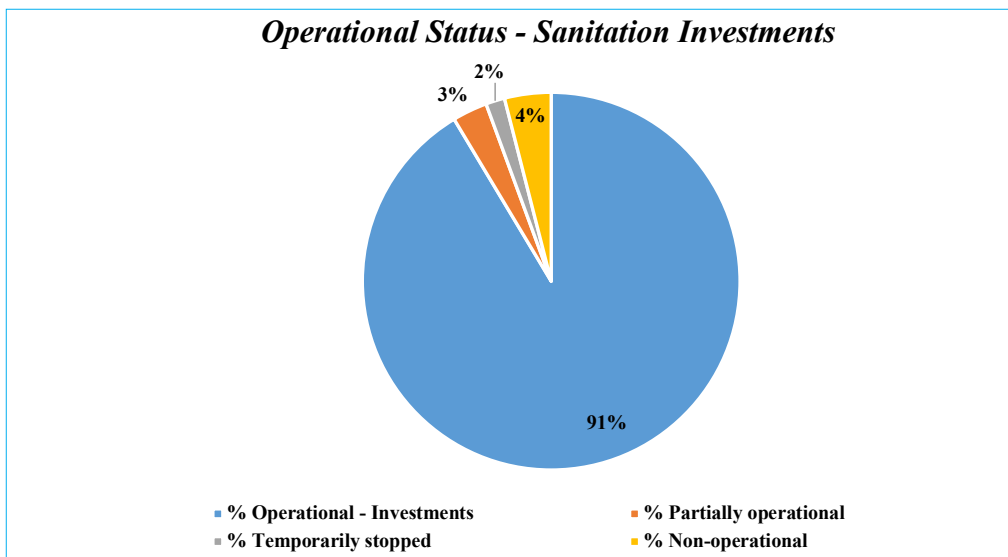
Figure 17: Operational status of Sanitation Investments

The household sanitation investments had the highest success rate of 92% being operational followed by institutional sanitation at 90% and community sanitation facilities at 88%. Meanwhile, 86% of the DTFs and 76% of the public sanitation facilities were found to be operational.
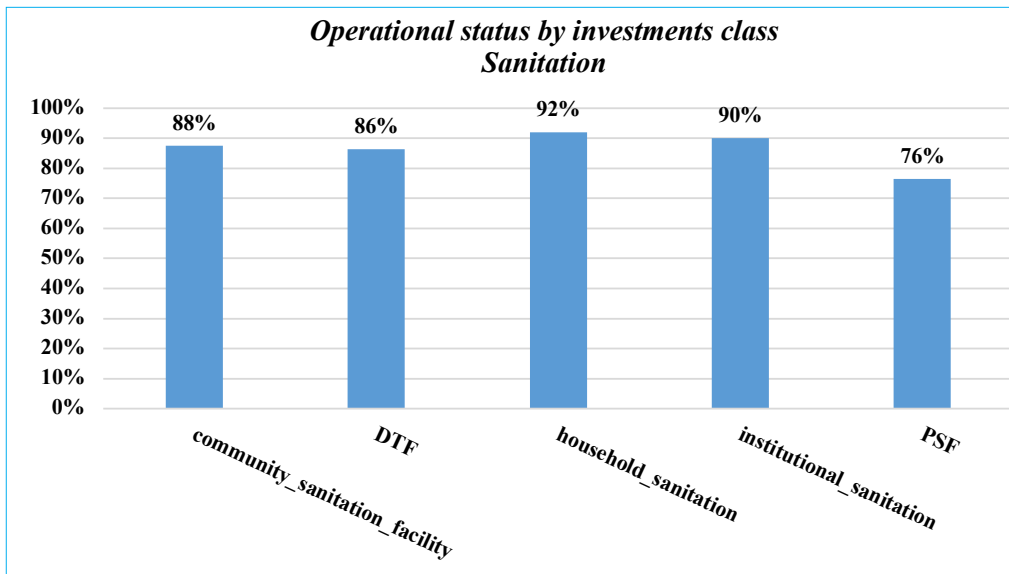
Figure 18: Operational status by investments class - Sanitation

3.14 Operational Status of Water Resources Projects

During the monitoring exercise, 95 water resources projects were monitored out of which 66 were found to be operational which translates to 69% operational status. In addition, 20% were found to be partially operational, 4% temporarily stopped and 6% non-operational as detailed in figure 19 below.
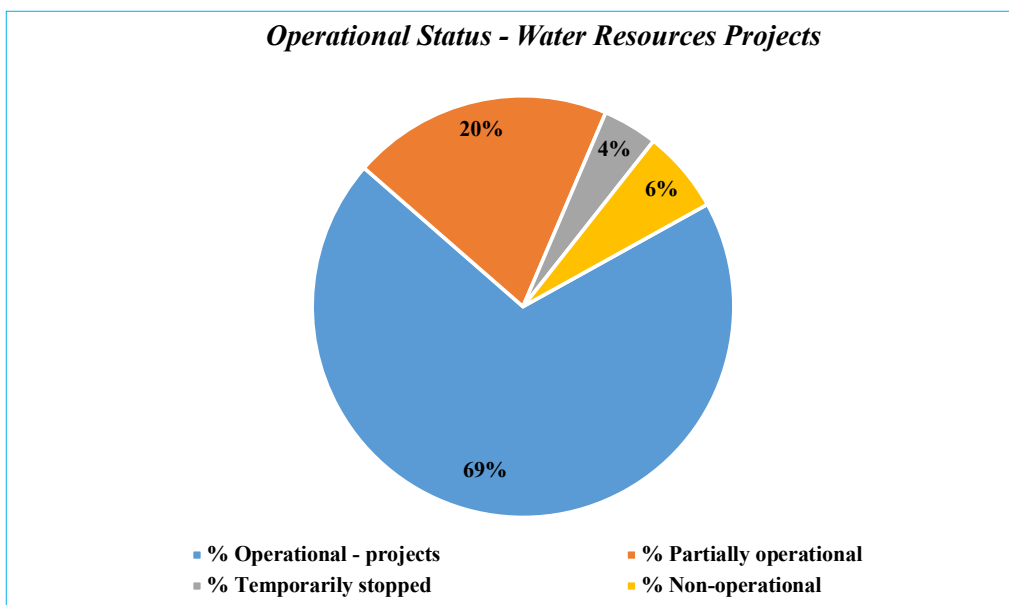
Figure 19: Operational status of Water Resources Projects

3.15 Operational Status of Water Resources Investments

There was a total of 619 water resources investments out of which 76% were operational whereas 8% were partially operational, temporarily operational and non-operational as shown in figure 20.

Operational Status - Water Resources Investments

8%

8%

8%

76%

- % Operational - Investments
- % Partially operational
- % Temporarily stopped
- % Non-operational
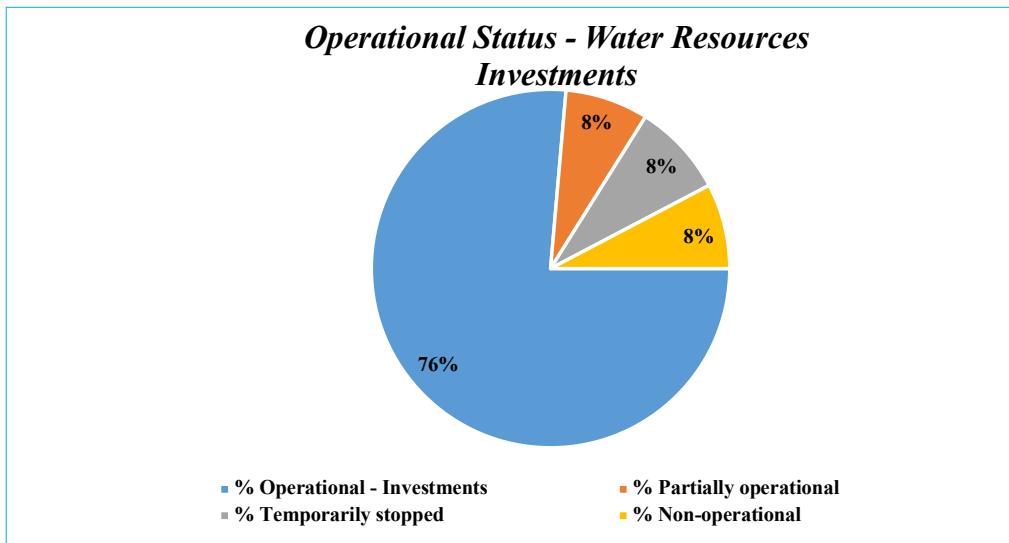
Figure 20: Operational status of Water Resources Investments

Water resources management infrastructures had the highest score for djabias at 88% operational followed by spring protection and rain water harvesting tanks that scored 79%. The operational status of rainwater harvesting pans and livestock troughs relies on the seasonal rainfall. Therefore, the lower operational status percentages as shown on figure 21 are attributed to the fact that at the time of the exercise there was prolonged drought in the country.

Operational status by investment class Water Resources

rwh_tanks	rwh_pans	spring_protection	livestock_troughs	rwh_djabias_berkad	rwh_sand_sub_surface_dams
79%	31%	79%	46%	88%	73%
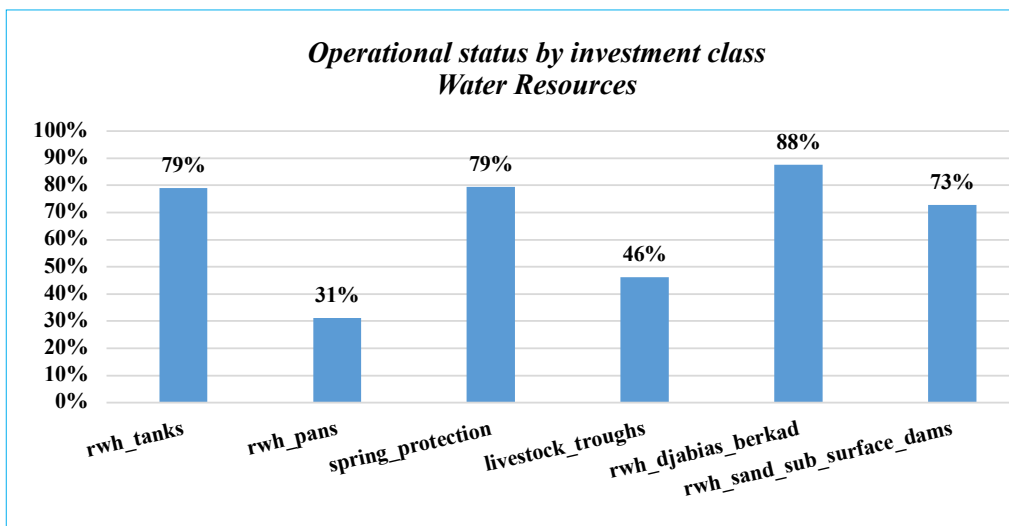
Figure 21: Operational status by investment type - Water Resources

3.16 Reasons for projects/ Investments being partially operational / non - Operationa

REASONS FOR INVESTMENT NOT BEING FULLY OPERATIONAL

- Other 8%
- Community conflict 3%
- Blockages (sanitation) 1%
- Natural / climatic causes 15%
- Issues with operational responsibility 16%
- No demand / under-use 6%
- Poor structural integrity 6%
- Inaccessible for users 2%
- insecurity 1%
- Water source / connection unreliable / lacking 30%
- Vandalism 12%
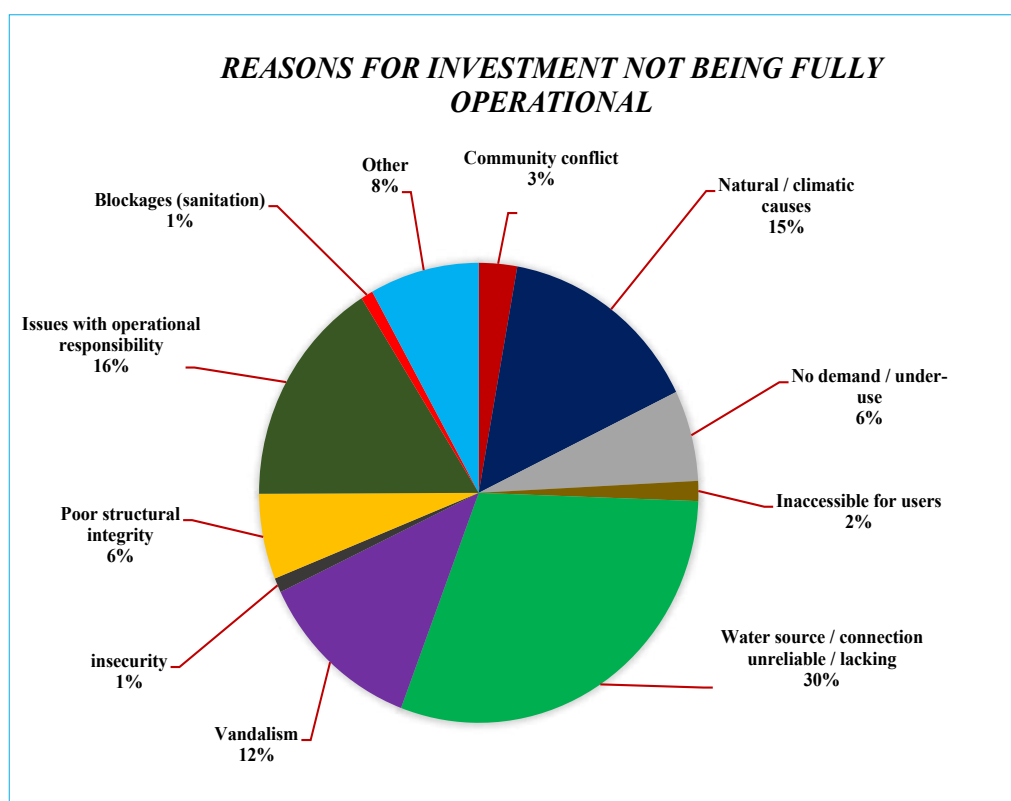
Figure 22: Reasons for investments not being fully operational

3.17 Regression Analysis

Further regression analysis was conducted to establish the relationship and association between the various factors that influence operational status of investments. Multiple linear regression was used and the following results were obtained.

Table 7: Regression analysis on factors influencing operation status of investments

Residual Standard Error	Degree of Freedom	Multiple R - Squared	F-Statistics	P - value
0.02883	31	0.659	4.609	0.0002364

From the analysis, it can be concluded that the aforementioned factors significantly influenced operational status of the projects due to the estimated p-value of 0.0002364 which indicated significance. Furthermore, the estimated R – Squared value of 0.659 indicated that 65% of the variation in the partial operational status of the projects could be attributed to these factors and that only 35% could be attributed to chance. From the analysis, issues with operational responsibility, insecurity and vandalism were estimated to be the most influencing factors as

they recorded the most significant p-values of 0.000302, 0.023163 and 0.038117 respectively. Equally, poor structural integrity, blockages, and contractual issues with operator were estimated to be the least influencing factors as they recorded insignificant p-values of 0.824571, 0.816152 and 0.719873 respectively.

The correlation matrix below indicates positive correlations with a blue scale while negative correlations are indicated with a red scale.
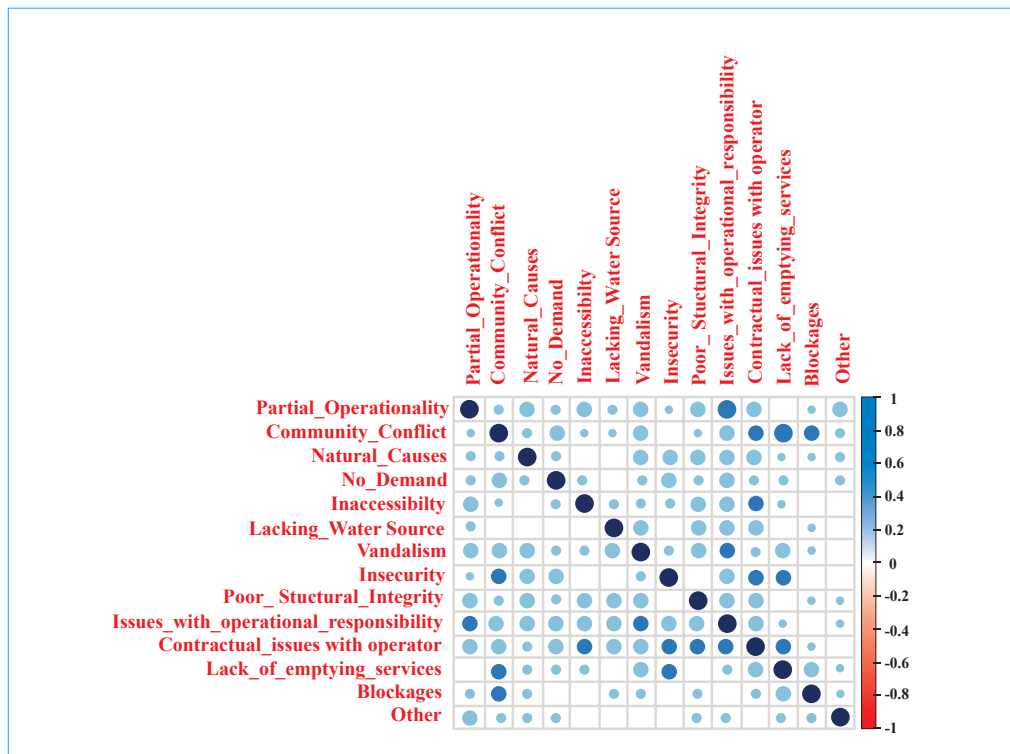
Figure 23: Investments operation status vs factors influencing operation status

As observed in the figure 23, issues with operational responsibility appeared to have the strongest positive correlation with operational status of investments. This was closely followed by vandalism, inaccessibility, and natural causes / climatic effects.

3.18 Technical Condition, Quality, Repair and Reliability

This section elaborates the technical and physical aspects of monitored projects, with a focus on technical quality of the schemes; branding; perceived water quality, water quantity, water at intakes, storage tanks, distribution systems and water resources management structures, hygiene levels and availability of hand washing facilities at sanitation infrastructures.

The technical quality of the schemes is assessed using four parameters: Condition, Quality of works, Need of repair, and Reliability. In the assessment, 67% of the monitored investments were found to be in good condition, while 71.2% of the investments had good quality of works and only 12% of the investments need repairs whereas 64% were found to be regularly reliable.
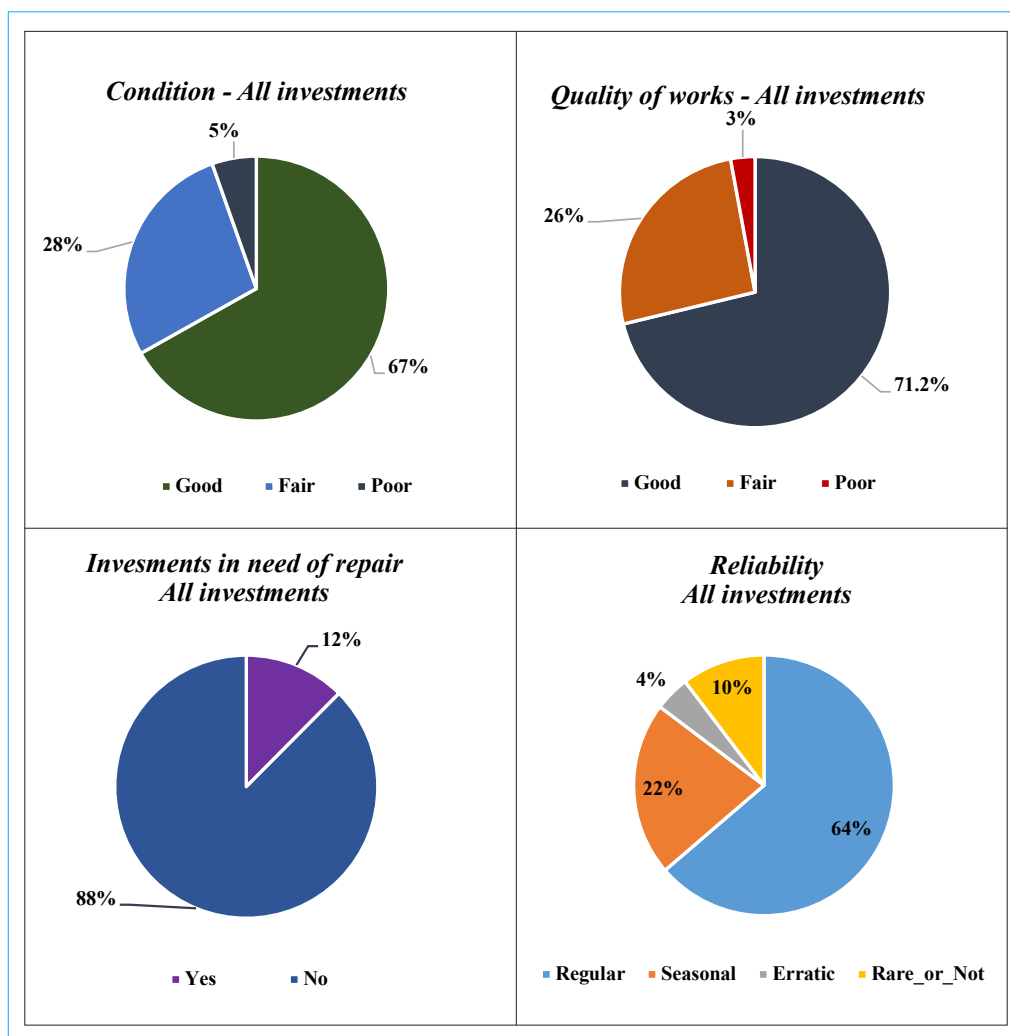
Figure 24: Condition, Quality of works, Need of repair and Reliability

3.19 Condition per Investment Window

In the assessment of the technical condition, investments under Results Based Financing recorded the highest score of 71% followed by Rural Investment Programme and Water Resource Investment at 67% while Urban Investment Programme registered the least score of 66% as shown in figure 25 below.
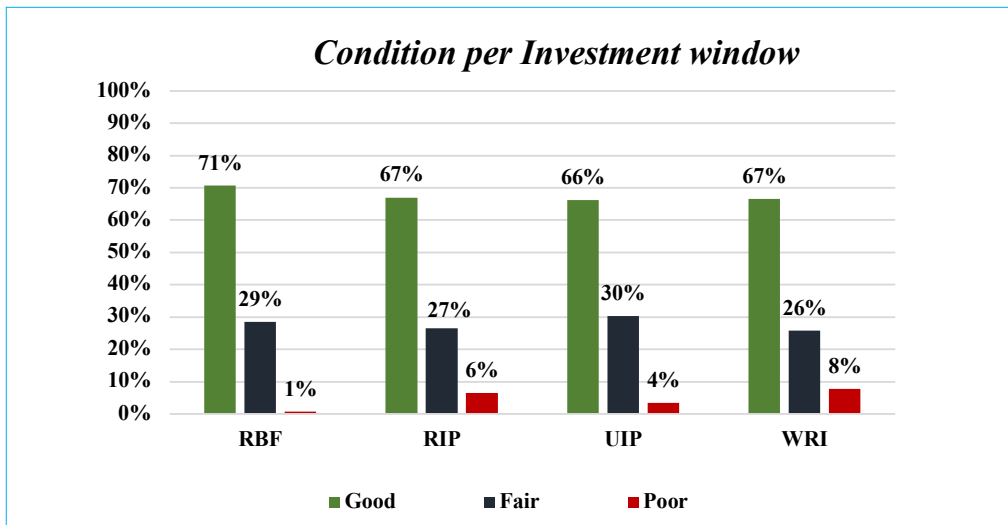
Figure 25: Condition of investments by investment window

3.20 Quality per Investment Window

In the evaluation of the technical quality, RBF investments recorded the highest score of 81% followed by WRI, UIP and RIP which scored 72%, 71% and 70% respectively. This outstanding performance was attributed to the approach adopted such as standardised designs and recruitment of quality assurance monitors to provide supervision in the implementation of projects.
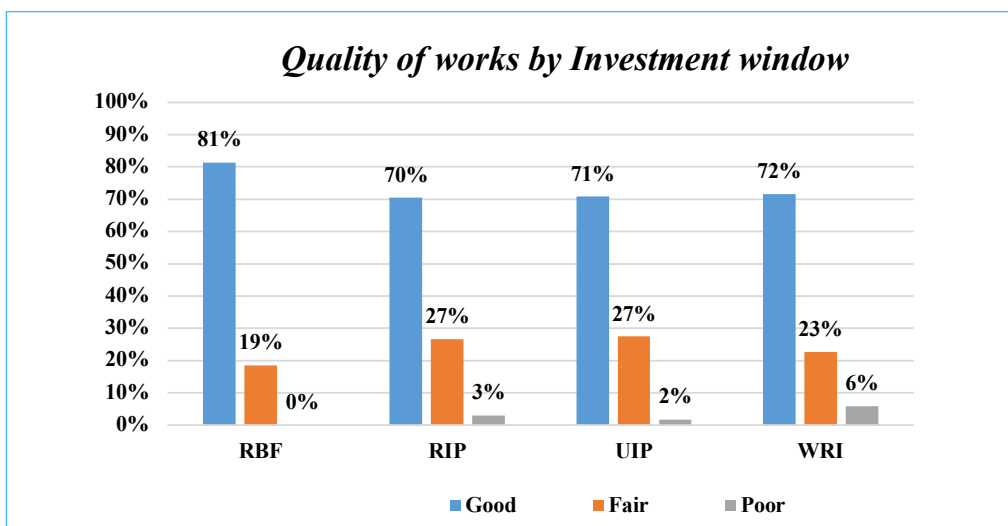
Figure 26: Quality of works by investment window

3.21 Need of Repair per Investment Window

Out of the total investments in need of repair, 15% were rural investments, 9% urban investments, 13% water resources investments, and 4% result-based financing investments. It is notable that RBF had the lowest percentage of investments

that need repairs followed by UIP. The results are attributed to the fact that Water Service Providers (WSPs) have better operations and maintenance approach as well as a better ability to afford the cost of repairs. Majorly, investments in need of repair are due to natural/climatic causes, vandalism by wild animals and operational responsibility issues.
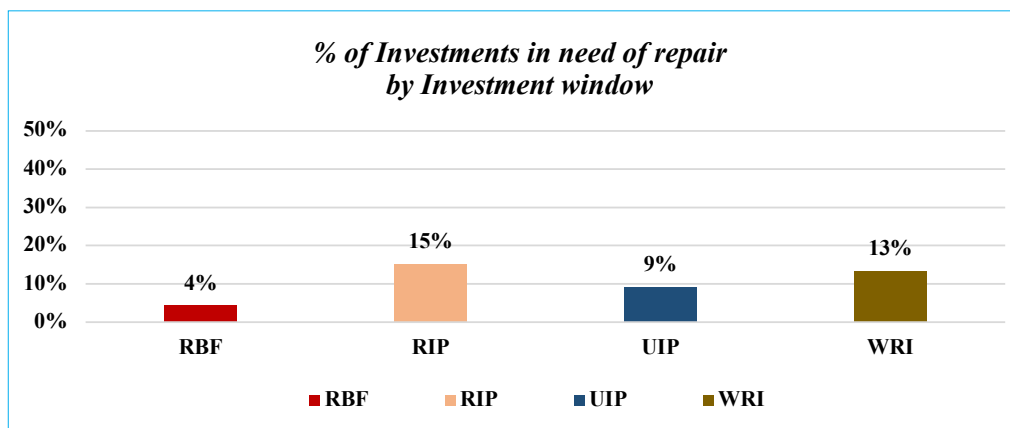
Figure 27: Percentage of investments in need of repair by investment window

3.22 Reliability per Investment Window

In terms of reliability by investment window it was found that UIP, RBF and RIP had the highest score of 71%, 67% and 66% respectively whereas WRI had the lowest score of 45% which was prompted by temporarily stopped infrastructure due to natural/climatic causes, vandalism by wild animals and lack of operations maintenance. The higher reliability scores are attributed to water supply investments, mostly individual and institutional connections.
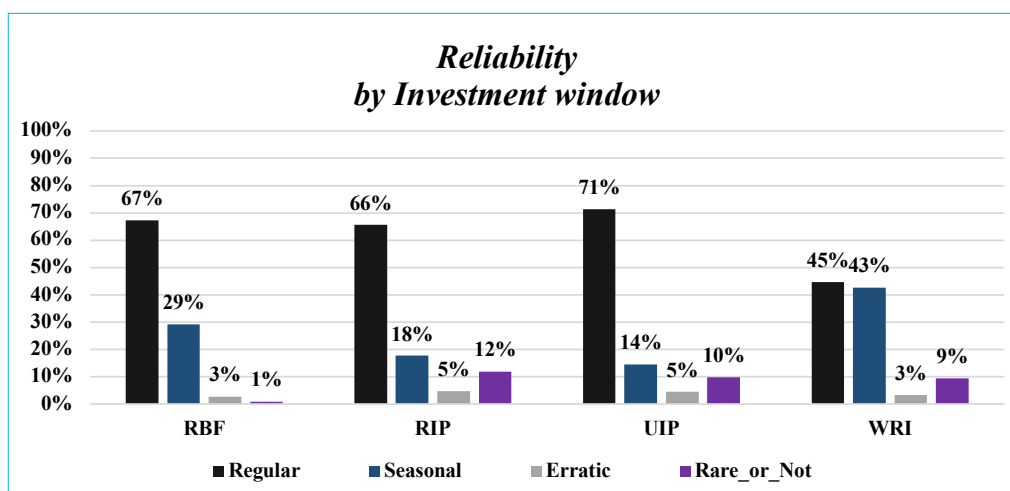
Figure 28: Reliability by investment window

3.23 Branding

It was found that 56% of the investments monitored were branded. However, only 37% of the investments had branding in good condition. The question on branding was asked for 2,590 investments excluding investments that were not expected to have branding e.g., individual connections, riparian pegging and fire-breaks, installation of early warning systems, tree pruning and grass strips.

3.24 Branding of investments by Investment Window

The RBF Investments had the highest score of branded investments compared to other investment windows, and the highest percentage of branding in good condition.
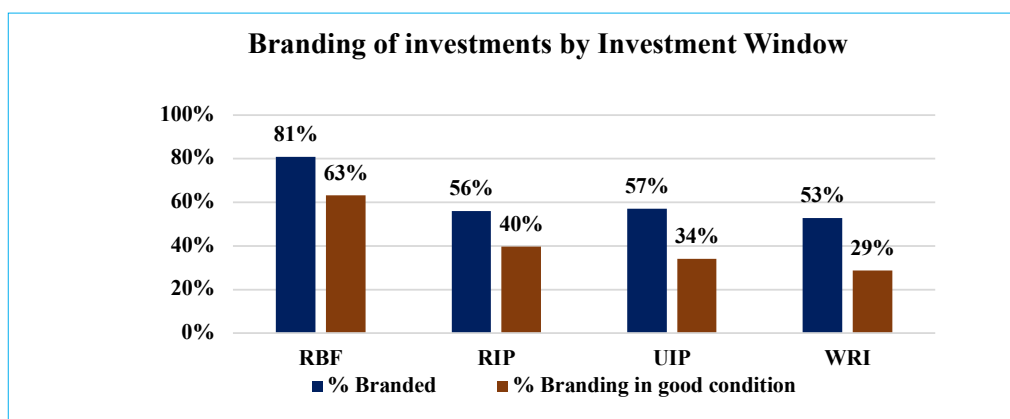
Figure 29: Branding of investments by Investment Window

3.25 Branding of investments by Programme

AOD Programme project and investments had the lowest proportion of investments with branding in good condition. This is due to the fact that the project and investments were not expected to have branding, they were mainly on pipelines and individual connections.
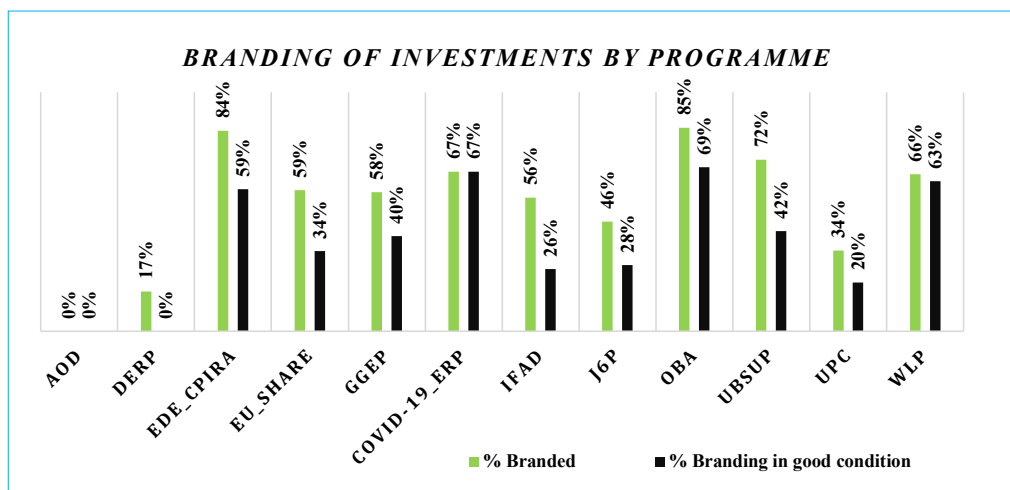
Figure 30: Branding of investments by Programme

3.26 Water Quantity and Water Quality

The water quantity and quality were assessed for water distribution systems, water sources/intakes, storage tanks and water resources management structures. It was found that 20% of the investments had abundant water quantity whereas 37% had enough water.

The investments types with the highest scores of "Abundant" water quantity include individual connections, hand dug well, spring protection, elevated concrete tank and reinforced concrete tanks.

Water Quantity of Investments

13% · 20% · 10% · 19% · 37%

■ Abundant   ■ Enough   ■ Limited   ■ Shortages   ■ Permanently_dry
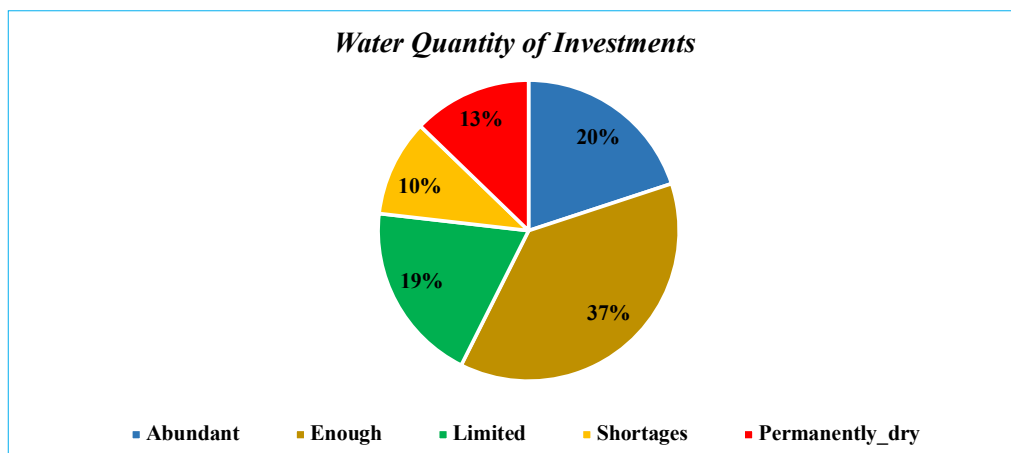
Figure 31: Water Quantity of investments

The quality of water was only assessed through physical observation and feedback from respondents wherein 29% reported very good water quality and 42% had good quality. Only 1% was recorded as having poor quality water. There was 16% of the investments wherein the water quality was captured as unknown. This may require water quality tests to be conducted to establish the quality and document if the water is fit for human consumption.

Water Quality of Investments

1% · 16% · 29% · 13% · 42%

■ Very_good   ■ Good   ■ Fair   ■ Poor   ■ Unknown
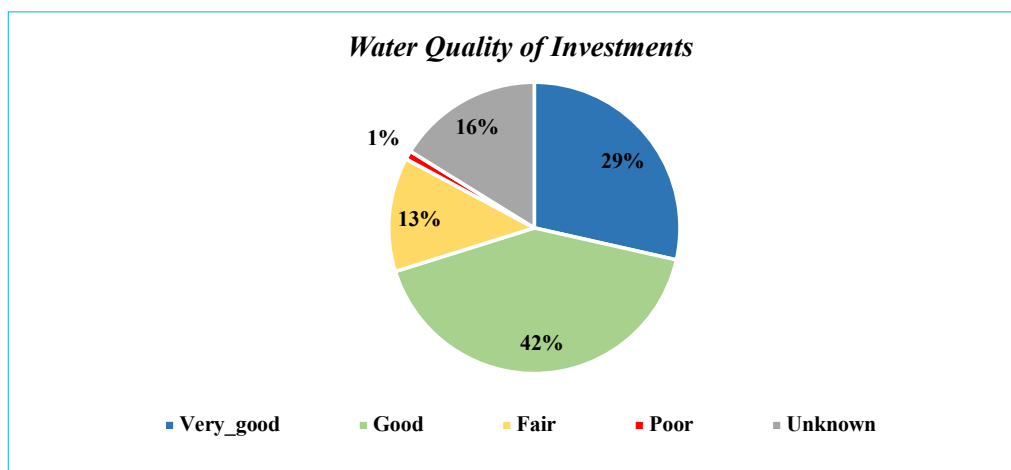
Figure 32: Water Quality of investments

3.27 Sanitation and Hygiene

The three key parameters that were observed regarding the quality of the sanitation facilities were: hygiene levels, availability of handwashing facilities and distribution of HIV materials.

Among the sanitation projects, 46% had good hygiene levels whereas 48% had fair hygiene levels. The urban investments had slightly better hygiene levels than the Rural Investments. Additionally, it was found that 5% of the facilities had HIV/Hygiene material and 27% had handwashing facilities. The sanitation facilities that lacked handwashing components was as a result of lack of reliable water source as shown in Figure 33 below.
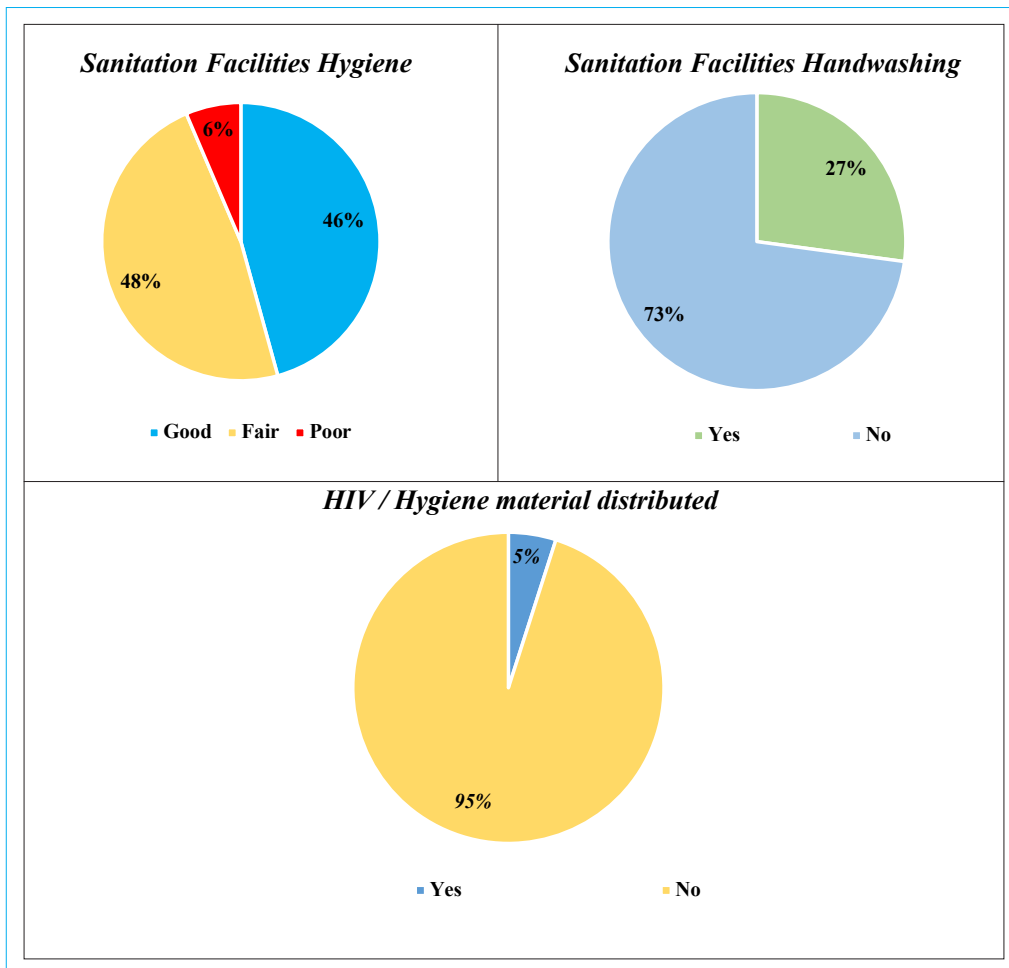
Figure 33: Hygiene levels, handwashing facilities and distribution of HIV materials

In comparing the rural and urban sanitation investments, the urban sanitation facilities had slightly better hygiene levels as shown in Figure 34. It is worth noting that urban sanitation projects were mainly household sanitation which had clear operation and maintenance.
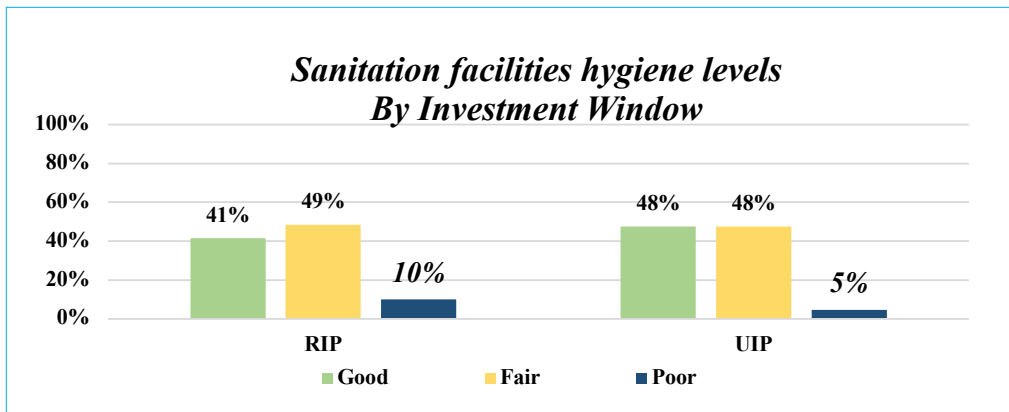
Figure 34: Sanitation facilities hygiene levels by Investment Window

In the assessment it was found that household sanitation had the best hygiene levels with a score of 47%. Community sanitation facilities had 44% whereas Institutional Sanitation Facilities had 42% as detailed in figure 35 below.
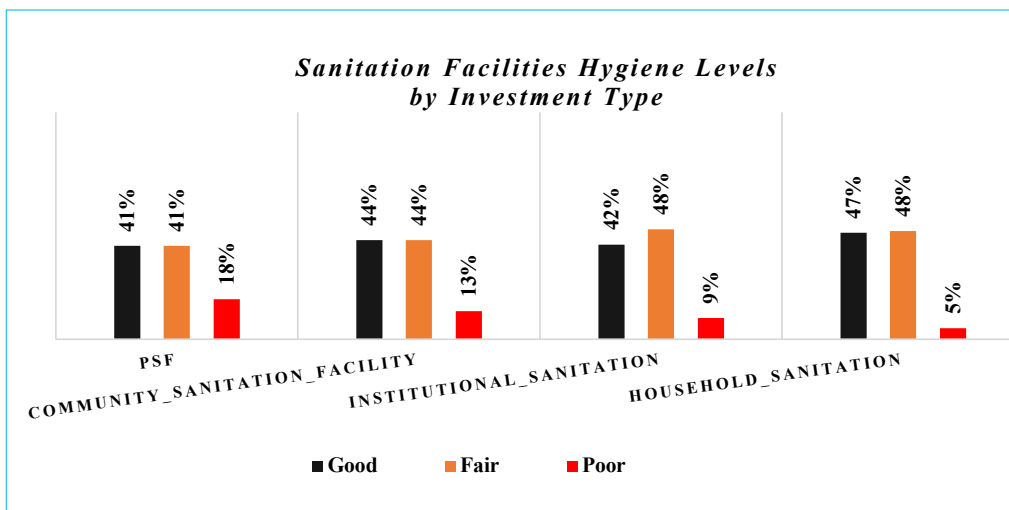
Figure 35: Sanitation facilities Hygiene Levels by investment type

The Public Sanitation Facilities (PSF) registered the highest percentage on availability of handwashing with a score of 76%.
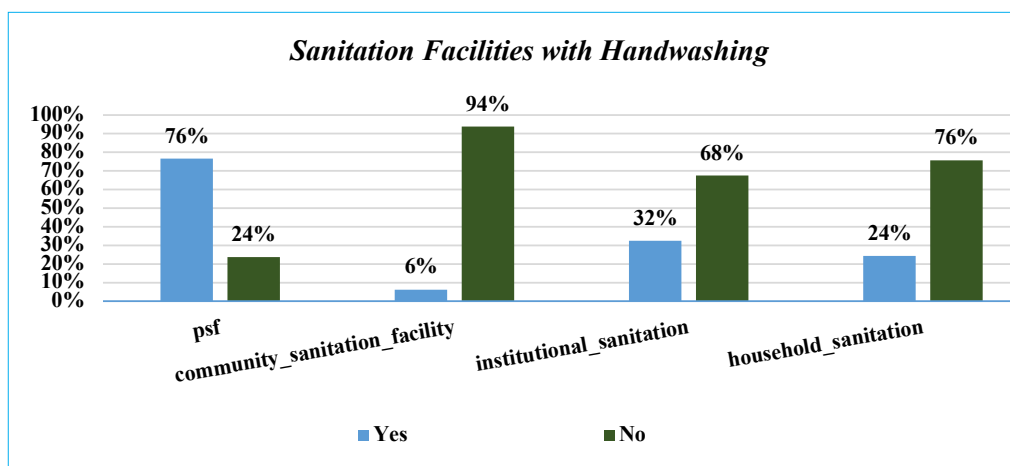
Figure 36: Sanitation facilities with Hand Washing

3.28 Revenue Collection

Revenue collection is a key aspect for enhancing the sustainability of investments and it was therefore allocated a higher weight in determining the Sustainability Index where applicable. Among infrastructures expected to generate revenue are animal troughs, stand pipes, water kiosks and communal water points. In addition, DTFs and PSFs were also assessed on revenue generation as well as energy saving jikos, bee hives, fish ponds, djabias, rainwater harvesting pans, sand dams, rainwater harvesting tanks, spring protection and tree nurseries.

The study revealed that 43% of projects and 45% of investments were found to be collecting revenue. The revenue collection is highest in the RBF and urban investments as a result of being managed by established WSPs., while water resources and rural investments have a lower revenue collection since they are majorly run by WUAs, CBOs, WRUAs or CFAs. These entities have weaker governance structures and are at times run by volunteers.
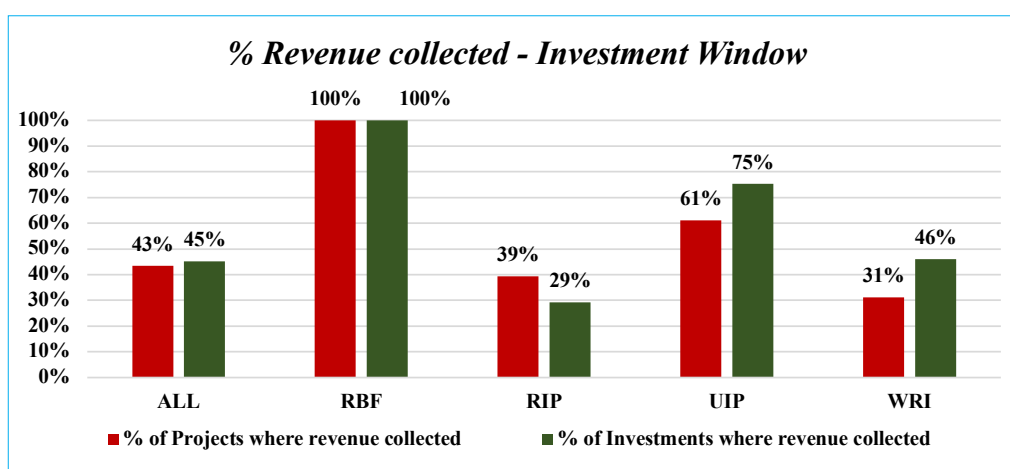
Figure 37: Percentage of Revenue collected by Investment Window

Sanitation investments scored 87% revenue collection rate whereas water supply and water resources scored 41% and 39% respectively as shown in figure 38 below.
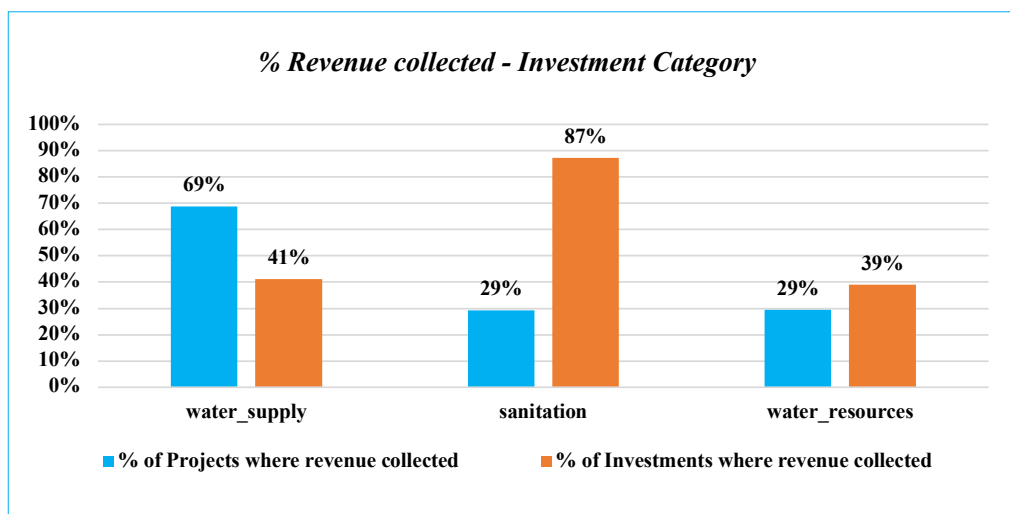
Figure 38: Percentage of projects and investments that collect revenue per category

The percentage of investments collecting revenue per programme are presented in figure 39 below. The investments with the highest percentages for revenue collection are under OBA and AOD with a score of 100% whereas the lowest are for GGEP and WLP that scored 20% and 30% respectively.
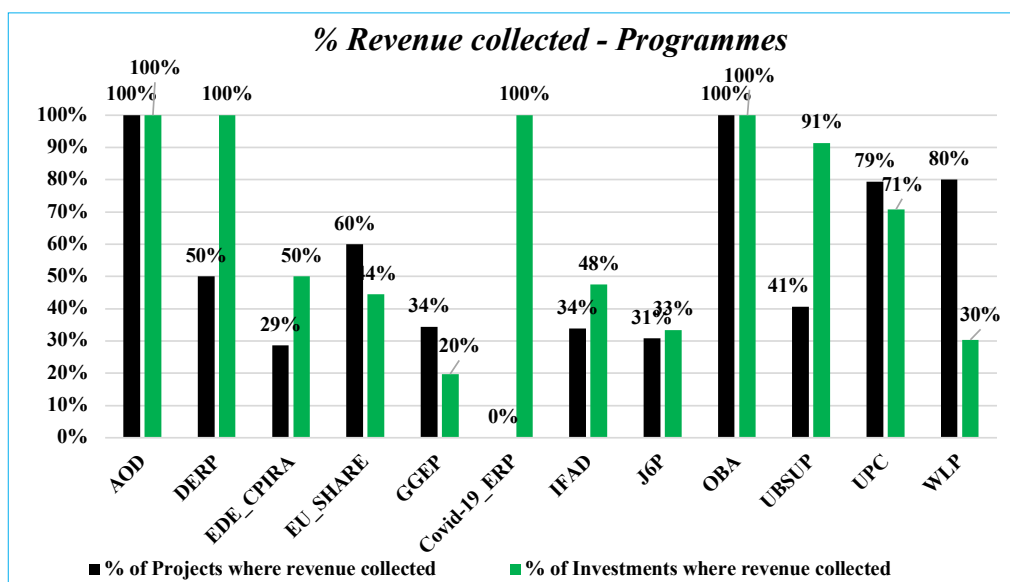
Figure 39: Percentage of projects and investments that collect revenue per programme

The study revealed that individual and institutional connections performed best on revenue collection with a score of 100% while water kiosks, yard taps and animal troughs scored 48%, 28% and 24% respectively as shown in figure 40

below. The low revenue collection percentages are due to infrastructures that are in need of repair or lack of a reliable water source/ connection.
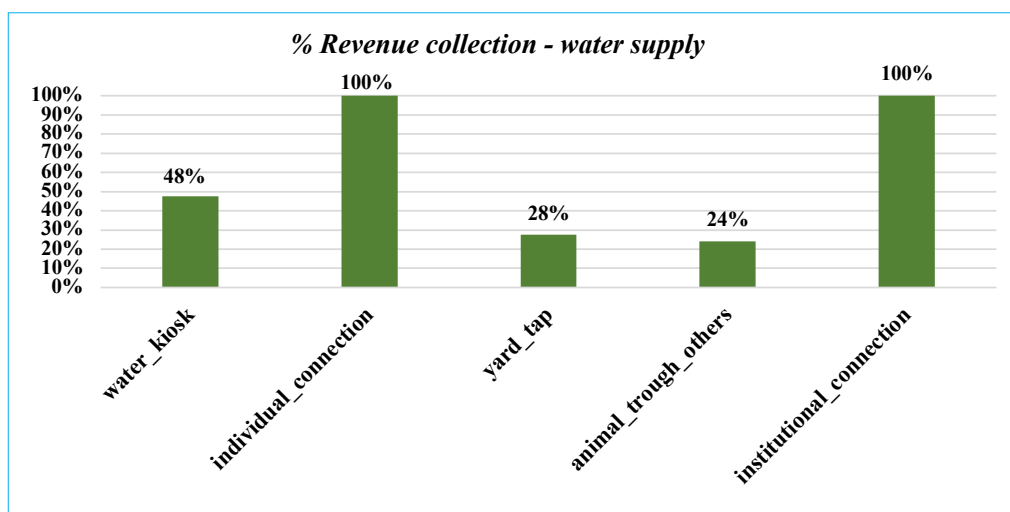
Figure 40: Percentage of projects revenue collection by water supply investment types

The study shown that sanitation investments that collected highest revenue were Decentralised Treatments Facilities and PSFs with scores of 95% and 76% respectively as shown in Figure 41 below.
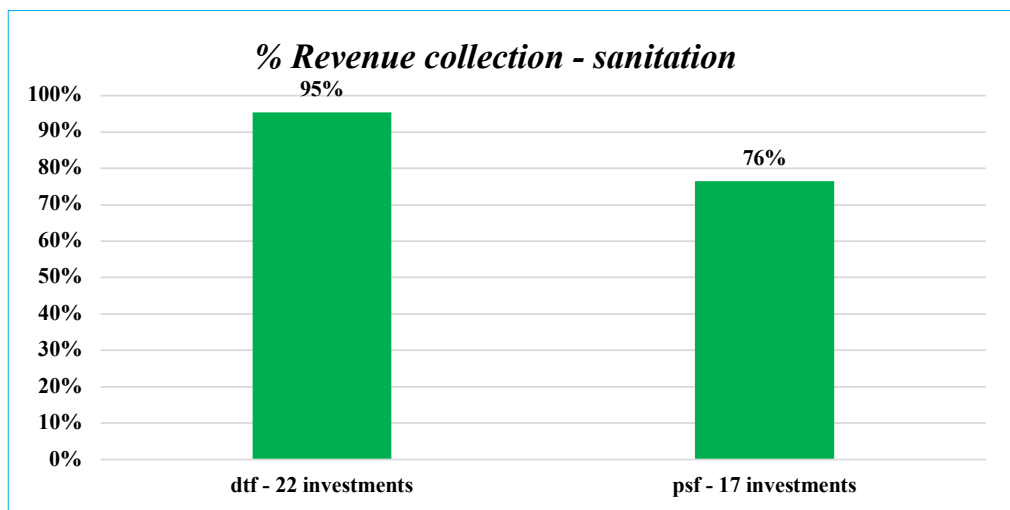
Figure 41: Revenue collection by sanitation investment types

The study shows the performance of revenue collection on water resources investments scored highest for unlined fish ponds and bee hives with scores of 50% and 44% respectively while lined fish ponds scored lowest percentage on revenue collection as shown figure 42 below.
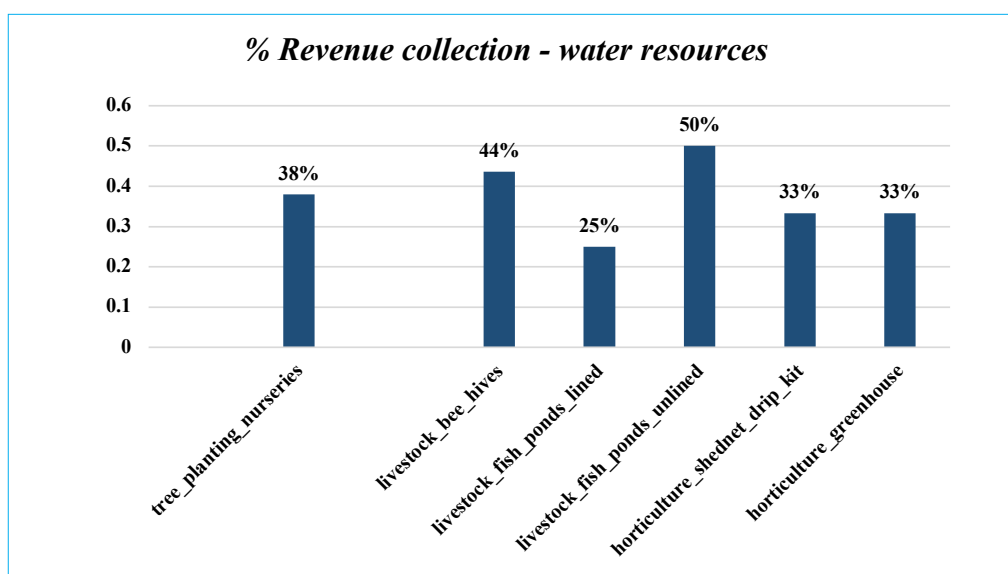
Figure 42: Revenue collection by water resources investment types

3.29 Beneficiaries

The data for beneficiaries was collected on specific investments including distribution systems (water kiosks, stand pipes, yard taps, other communal water points, individual connections, industrial connections and institutional connections) and sanitation (institutional sanitation, community sanitation, household sanitation and PSFs).

According to the data collected, the proportion of female beneficiaries are approximately 47% across all investments as shown on Table 8. In addition, the percentage of minors as beneficiaries for household sanitation is 25% and individual connections scored 36% of total number of beneficiaries. The exception is the institutional sanitation, which includes mostly schools, where the percentage of minors is as high as 95% of the total number of beneficiaries.

Table 8: Number of beneficiaries per investment type

BENEFICIARIES	No of invest-ments	Beneficiaries per invest-ment	Total number of beneficia-ries	Female beneficia-ries	Minors below 18
Water kiosk	162	525	84999	34415	17660
Yard tap	59	167	9866	5952	4657
Individual connection	262	26	6781	2973	2460
Household sanitation	527	35	18695	8064	4751
Institutional sanitation	192	288	55319	27989	52673
Community sanitation facility	16	149	2378	903	906
PSF	17	721	12260	8823	3075

NB: the beneficiaries for WRI investments such as tree planting or installation of early warning systems was excluded as it was difficult to capture accurate number of beneficiaries.

3.30 Cross-cutting issues

Gender Equality and Social Inclusion

The Gender Equality and Social Inclusion (GESI) aspects for the investments were captured by three main parameters, namely;

   i. Dis-aggregated data for number of beneficiaries for access points and public sanitation;
   ii. Whether or not the design of the facility had provision for People with Disability, gender and age specifically for water kiosks, yard taps and sanitation facilities;
   iii. Whether or not the operations responsibility of an investment had incorporated the participation of the Youth, Men, Women or People with Disability (PWD).

The dis-aggregated data for number of beneficiaries is as presented in table 8 in the previous section. The design of facilities should facilitate equitable access and use for women, men, minors and PWDs. The technical designs for sanitation facilities should reflect the needs of women and men and should address their specific needs and concerns. These concerns include siting of facilities, safety, security, health, hygiene, privacy and convenience. Poor design can affect everyone, they are groups of people who are more vulnerable than others and they include persons with physical challenges, pregnant women, children, the elderly and the sick.

Water collection responsibilities in most households are allocated to women and children and therefore, the technical designs for water kiosks should meet their needs. Any sanitation technology or water collection point thus must be assessed from the perspectives of gender equality and inclusivity. These aspects were covered during the training of the enumerators to ensure enumerators were aware of the aspects that they needed to look out for to observe whether or not a facility had provisioned for GESI.

Only 1% of the 140 RBF investments, 18% of the 1476 rural investments and 27% of the 975 urban investments had considered gender in their designs.
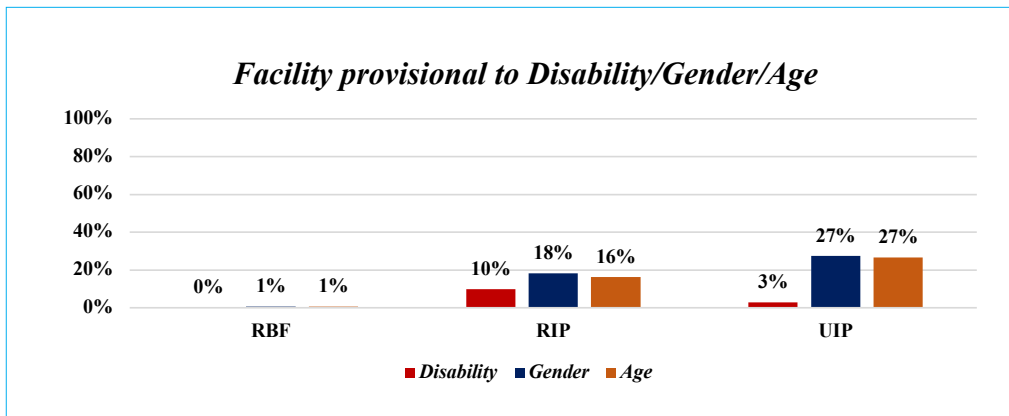
Figure 43: Provision for disability/gender/age by investment window

The distribution systems for water supply investments assessed for GESI included water kiosks and yard taps. The performance is presented in figure 44 below.
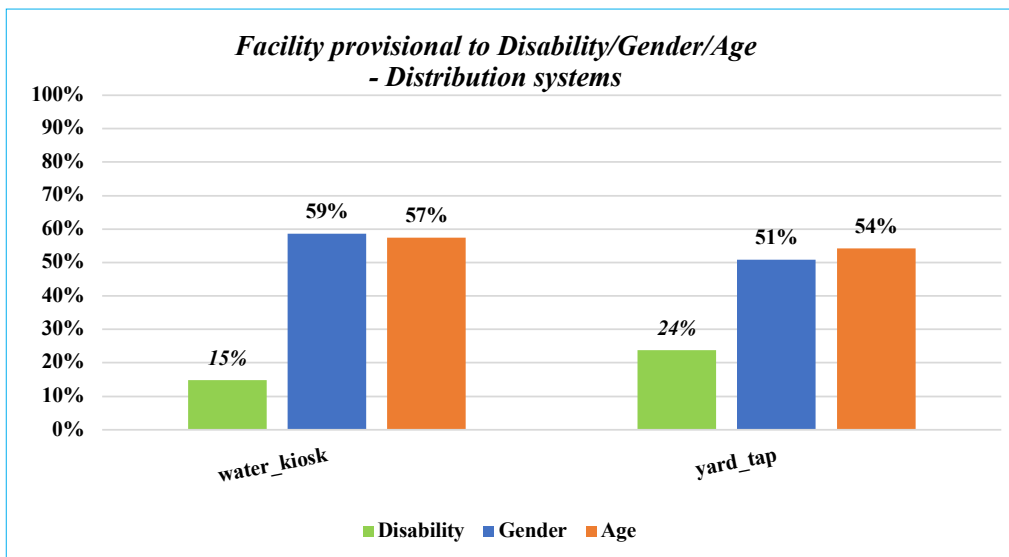
Figure 44: Provision for disability/gender/age by investment type – Distribution systems

In addition, the sanitation investments monitored were PSFs, community sanitation facilities, household sanitation and institutional sanitation facilities and the results are as shown below.
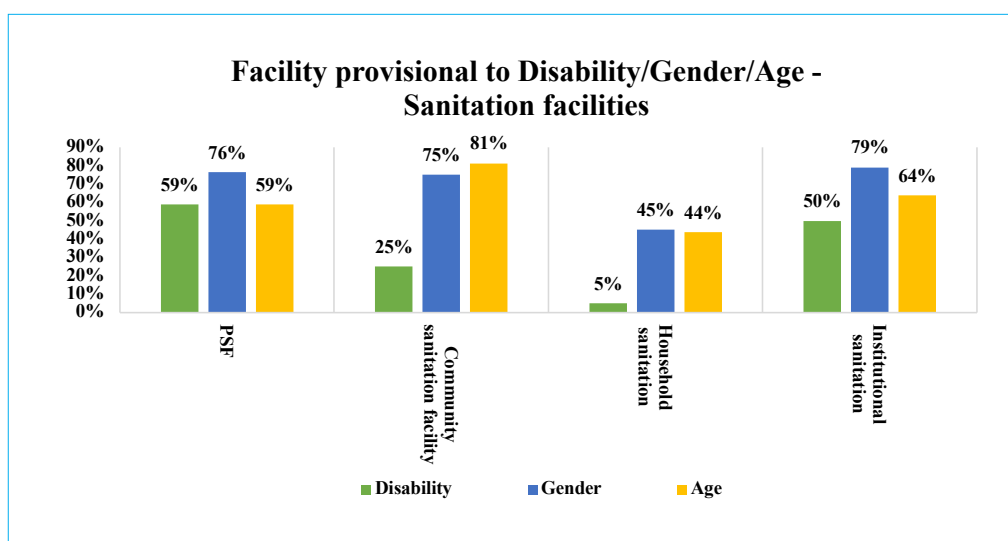
Figure 45: Provision for disability/gender/age by investment type – Sanitation facilities

UIP INVESTMENTS STATUS			
	% Operational Investments	Operational Total	Investments
TOTAL	82.1%	2,456	2991
BY INVESTMENT WINDOW:	BY INVESTMENT WINDOW		
UIP	90%	874	969 UIP - 969 investments
BY CATEGORY:	BY CATEGORY:		
Water supply	87%	385	444 Water supply - 444 investments
Sanitation	93%	489	525 Sanitation - 525 investments
	% Operational Investments	Operational Total	Investments
BY PROGRAMME:			
AOD	100%	12	12 AOD - 12 investments
UBSUP	93%	462	497 UBSUP - 497 investments
UPC	85%	333	393 UPC - 393 investments
BY YEAR:	% Operational Investments	Operational Total	Investments
2018	84%	366	4352018 - 435 investments
2019	94%	259	2752019 - 275 investments
2020	95%	211	2212020 - 221 investments
2021	100%	28	282021 - 28 investments
2022	100%	10	102022 - 10 investments
		874	**969**

As the Fund strives to provide an increased focus on enhancing gender equity and social inclusion and human rights-based approaches in the overall programme design, there should also be a target to enhance the involvement of women, youth and people with disabilities in the running and management of the schemes.

The study reveals that facilities are more commonly operational if primarily run by youth, followed by men and then women.

Only one of the monitored investments was primarily ran by people with disabilities but was non-operational at the time of visit as detailed in figure 46 below.
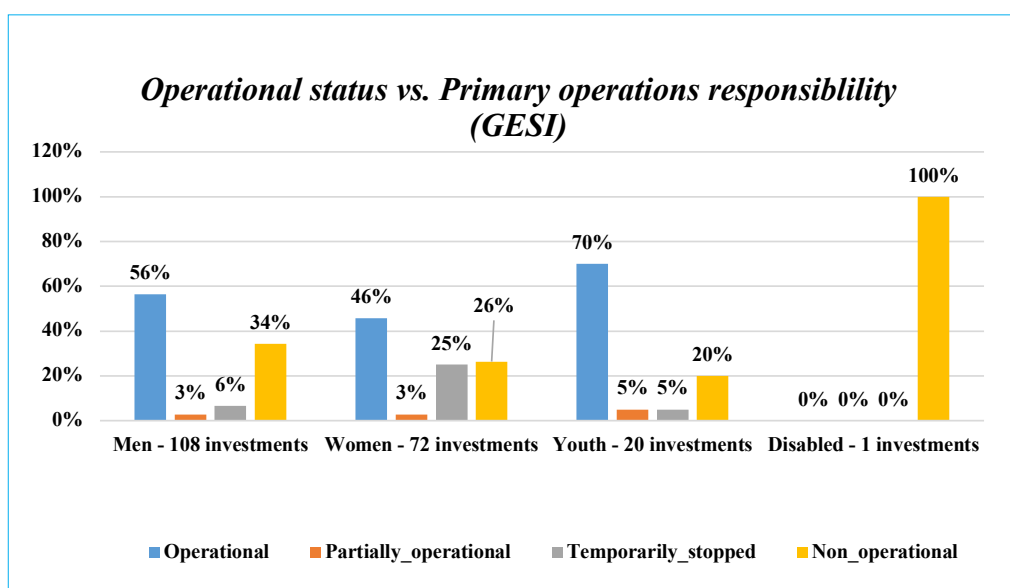
Figure 46: Operational status vs. Primary operations responsibility (GESI)

Table 9:Primary operations responsibility (GESI) by key investment type

Investments	Men	Women	Youth	Disabled	All
Water Kiosk	87	65	10	0	162
DTF	18	1	3	0	22
PSF	3	6	7	1	17
Total	108	72	20	1	201

The study revealed that only water kiosk, PSF and DTFs were run by operators. The water kiosk and DTF were majorly operated by men with highest percentage of 54% and 82% respectively whereas PSF was operated by youth and women with a percentage of 41%and 35% respectively.

The figure 47 below provides the details.
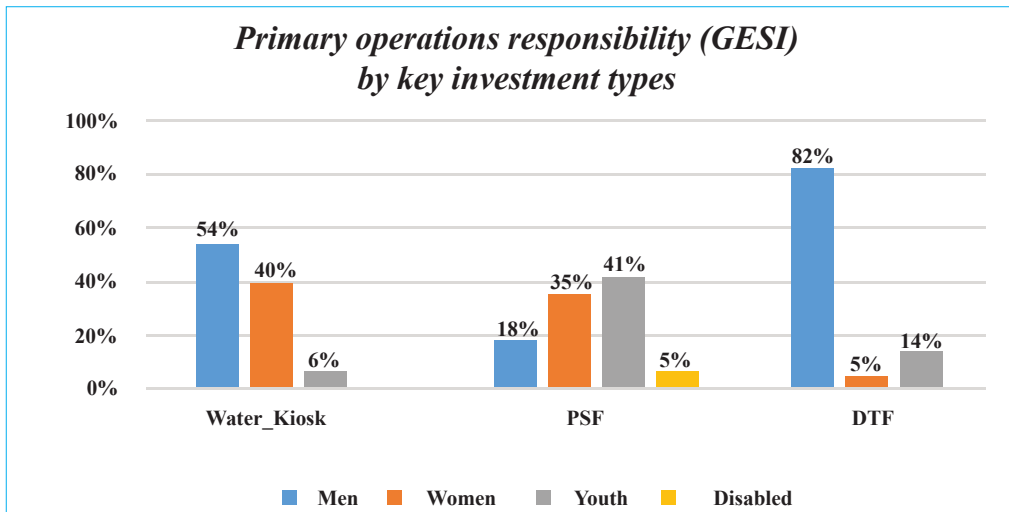
Figure 47: Revenue collection vs. Primary operations responsibility (GESI)

The investments being primarily run by youth also had a higher percentage of the revenue collection followed by investments run by men and women as shown in figure 47.
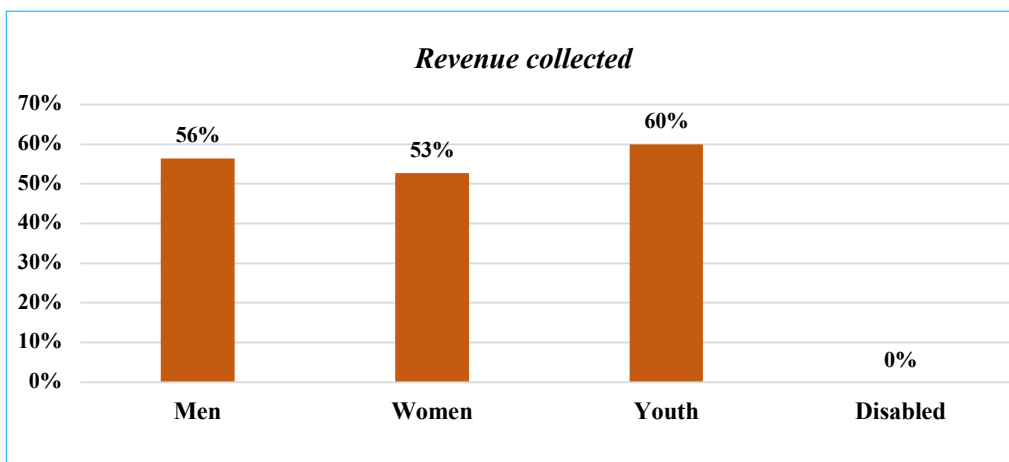
Figure 48: Revenue collection vs. Primary operations responsibility (GESI)

Governance and management of projects

55% of the 290 projects monitored during JAOME 2022 were managed by a committee, 25% by Board of Directors, and 19% by a managing director (MD). Only 2 projects were managed by volunteers and 1 by employees.
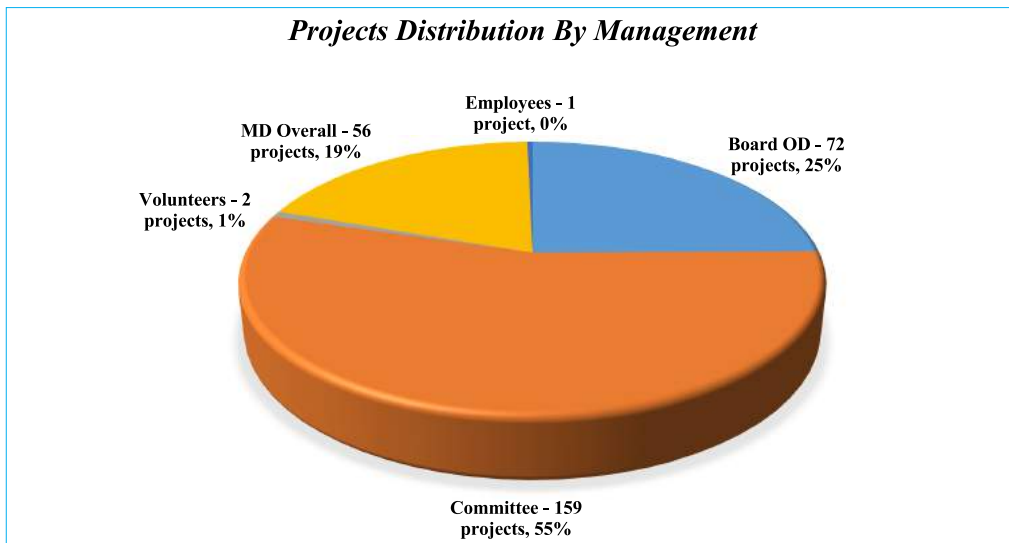
Figure 49: Management of projects

The report shows the investments managed by Board of Directors were 90% operational followed by 72% for investments managed by a committee and 70% for those managed by a Managing Director (MD) as depicted in figure 49.

The operational status for projects managed by an Employee registered 100% success however it is only 1 project out of the 290 visited thus a limited occurrence for drawing inference.
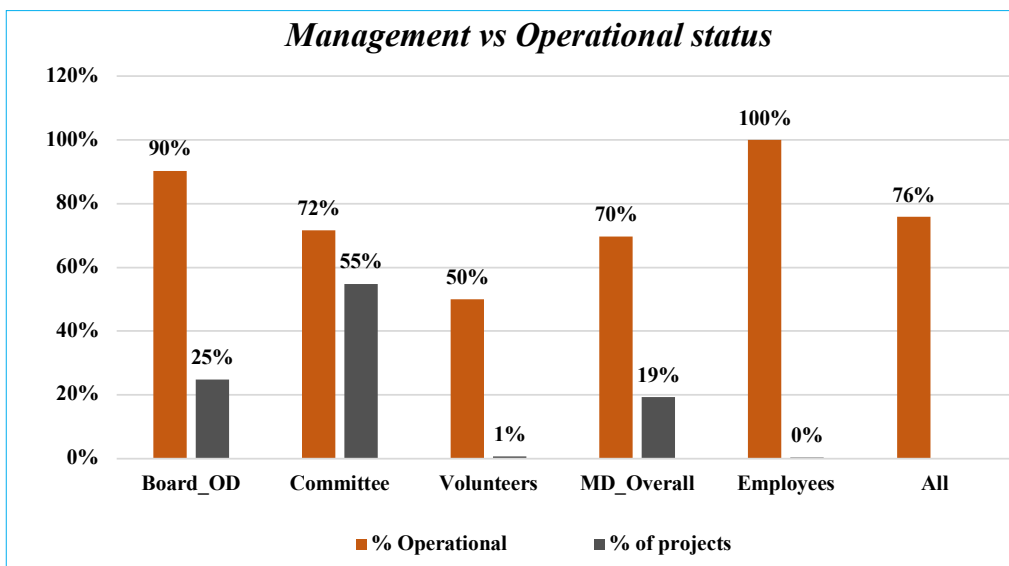
Figure 50: Management of projects vs Operational Status

During the study a comparison was made between revenue collection and management responsibility. The findings depict that those managed by the MDs had the highest score of 52% followed by projects managed by Board of Directors with a score of 50%.
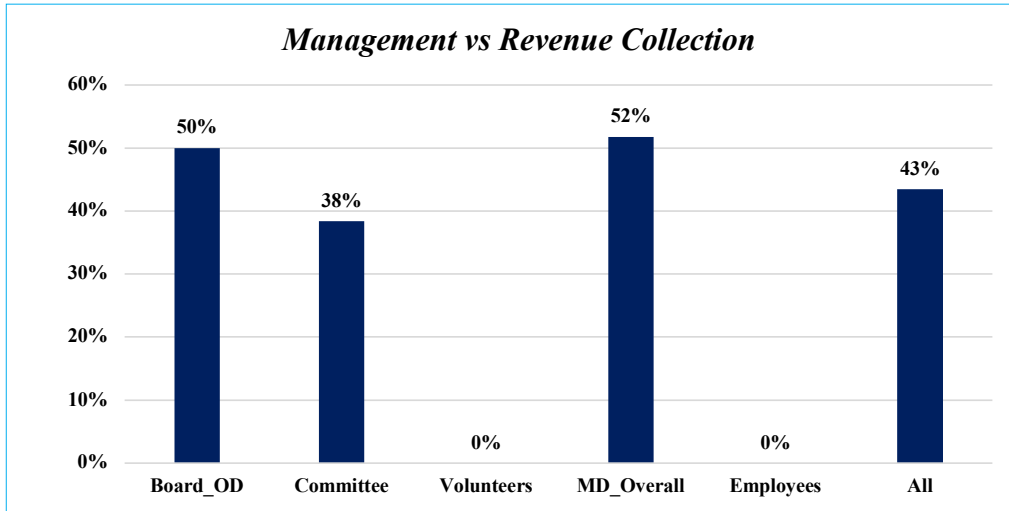
Figure 51: Management of projects vs Revenue Collection

Out of the 290 monitored projects, a total of 132 projects were found to be maintained by a committee whereas 102 projects were managed by WSP/WU/WRUA/CFA. Comparing the operational status versus maintenance responsibility, those managed by WSPs/WUs registered better performance than those projects run by a committee. In addition, projects managed by users had better operational status.
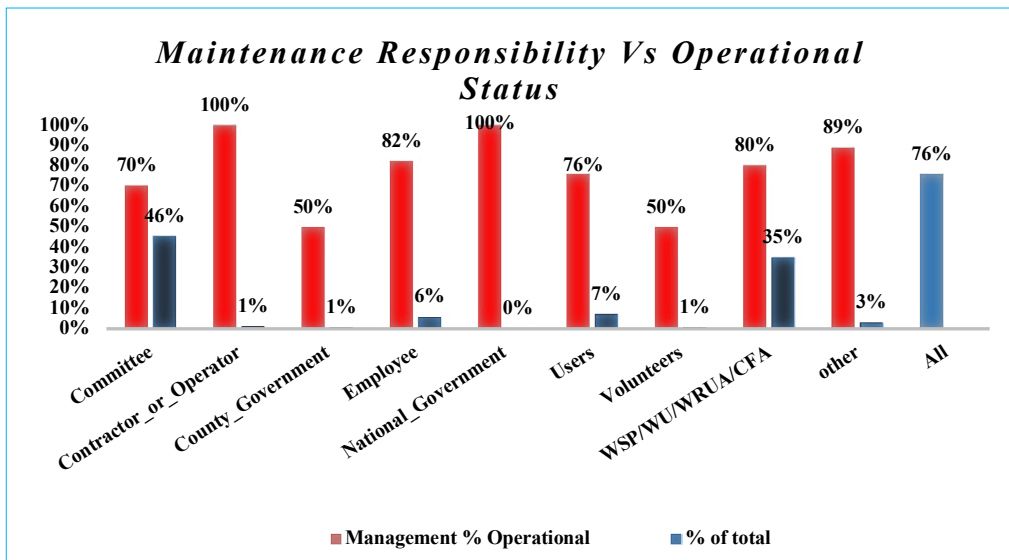
Figure 52: Operational projects by maintenance responsibility

In projects wherein the maintenance responsibility is handled by WSP/WU/WRUA/CFA, 52% were found to be collecting revenue followed by 50% for projects run by a committee as depicted in figure 52 below. Projects maintained by contractor and volunteer were one each and the 100% score would not be adequate for comparison with other projects.
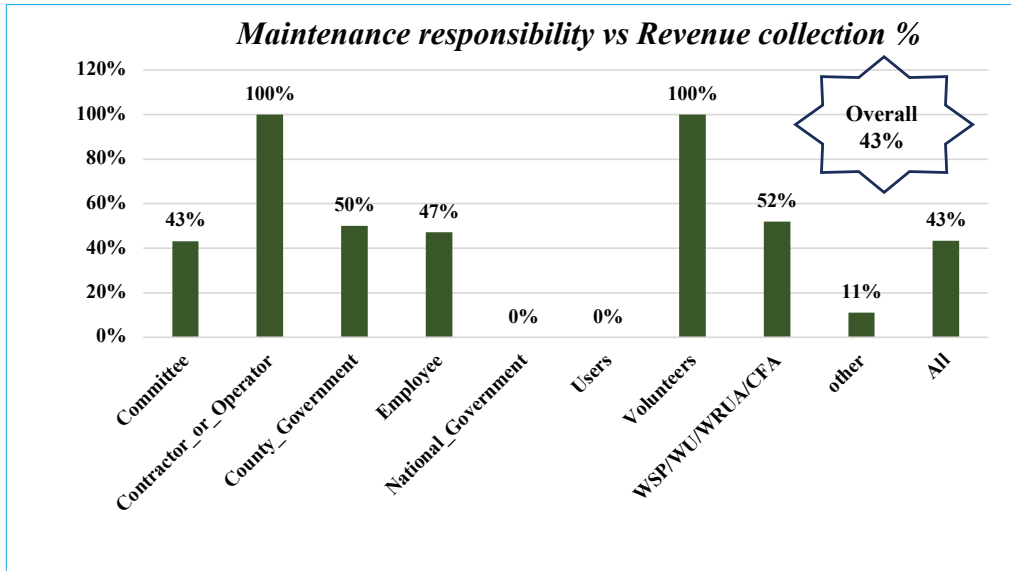
Figure 53: Revenue collection by maintenance responsibility

4

SUSTAINABILITY INDEX

CHAPTER 4: SUSTAINABILITY INDEX

Water is a scarce natural resource that plays an important role as an enabler of economic development. Water plays a pivotal role on social and political well-being of populations across the world and cannot be ignored as this has led to displacement of large populations. Water and Sanitation service provision for all as envisioned in the Sustainable Development Goal Six (SDG 6) reaffirms on the need to improve access but also in a sustainable manner through water resources conservation in the face of climate change.

As the global population continues to grow and urbanization accelerates, the demand for water is soaring, posing significant challenges to Water, Sanitation, and Hygiene (WASH) systems worldwide. Kenya is no exception. The growing demand for water and the need to explore how to strengthen WASH systems is essential to meet and overcome these challenges to ensure equitable access to clean water and improved sanitation for all.

The emphasis on sustainable water management which means using water in a way that meets current ecological, social and economic needs without compromising the ability to meet those needs in the future. This implies that water service providers and utilities should ensure that everyone has access to clean water and reasonable access to basic sanitation, but not at the expense of future generations.

WaterFund takes cognizance of the fact that projects sustainability is a critical component of realizing value for money and social integrity of all water and sanitation infrastructural investments. Over the years, WaterFund has continued funding the development and improvement of water supply schemes and sanitation as well as treatment facilities in partnership with county governments and other stakeholders. This has been in an effort to ensure sustainable schemes that serves the current and future population because continuous supply in desired quality and quantity is paramount to human existence.

The sustainability index (SI) was developed as a key performance metric to facilitate assessment and monitoring of sustainability of investments. This index was established since the JAOME in 2016, and has been calculated each year as a key quantitative performance measure to facilitate the assessment and monitoring of sustainability of investments to support progress evaluation over time and the development of appropriate response measures. For the purposes of the assessment, sustainability was defined as the ability of an investment to realize the objectives within 5 years of operation.

The Sustainability Index score is between 0% - 100%, with 100% depicting a high sustainability rate of the investments. The highest weight (50%) was allocated to revenue collection based on the fact that without revenue collection, the investment does not generate income for operations maintenance and this affects long term sustainability. The operational status is a key attribute to describe availability of the services and was allocated the weight of 25%. The age and survival rate of the investment was allocated a weight of 15%. The condition of an investment was allocated a smaller weight (10%) since the condition is, while important, it is expected that there is natural wear and tear with continued use of the investments. The four indicators that contribute to the sustainability index are:

Revenue Collection: % of investments collecting revenue (weight 50%);

Operational Status: % of investments operational (weight 25%);

Age-Survival: % of over two-year old investments still fully operational (weight 15%),

Good Condition: % of investments in good condition (weight 10%).

On the basis of the above criteria, Revenue Collection scored 23%, Operational status 20%, Age survival 12% and Good Condition 6% resulting in an overall SI score of 61%.
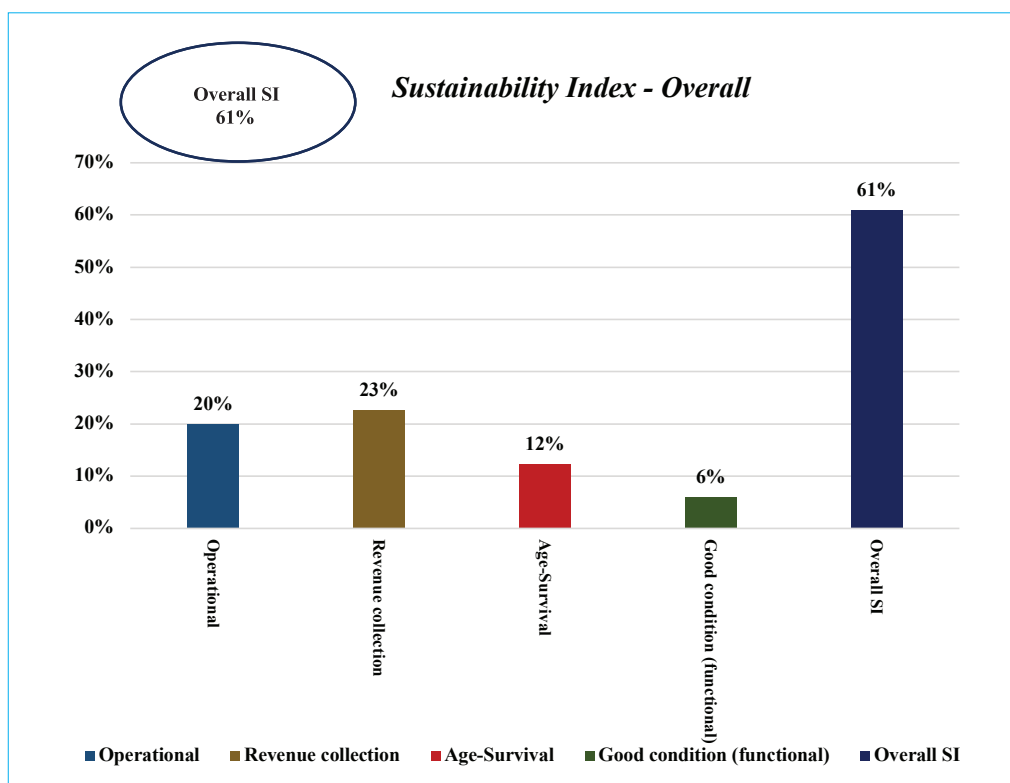
Figure 54: Overall Sustainability Index

4.1 County Sustainability Index

The County Sustainability Index (CSI) ranks all the Counties based on the index calculated for all the monitored investments (Rural, Urban, Water Resources and RBF) in each county. The CSI is calculated using the four indicators described above and the Overall SI score for JAOME 2022 was 61% which was an improvement of 1% compared to the Sustainability Index score of 60% for JAOME 2019. The results for all the Counties with more than 10 monitored investments are shown on figure 54.
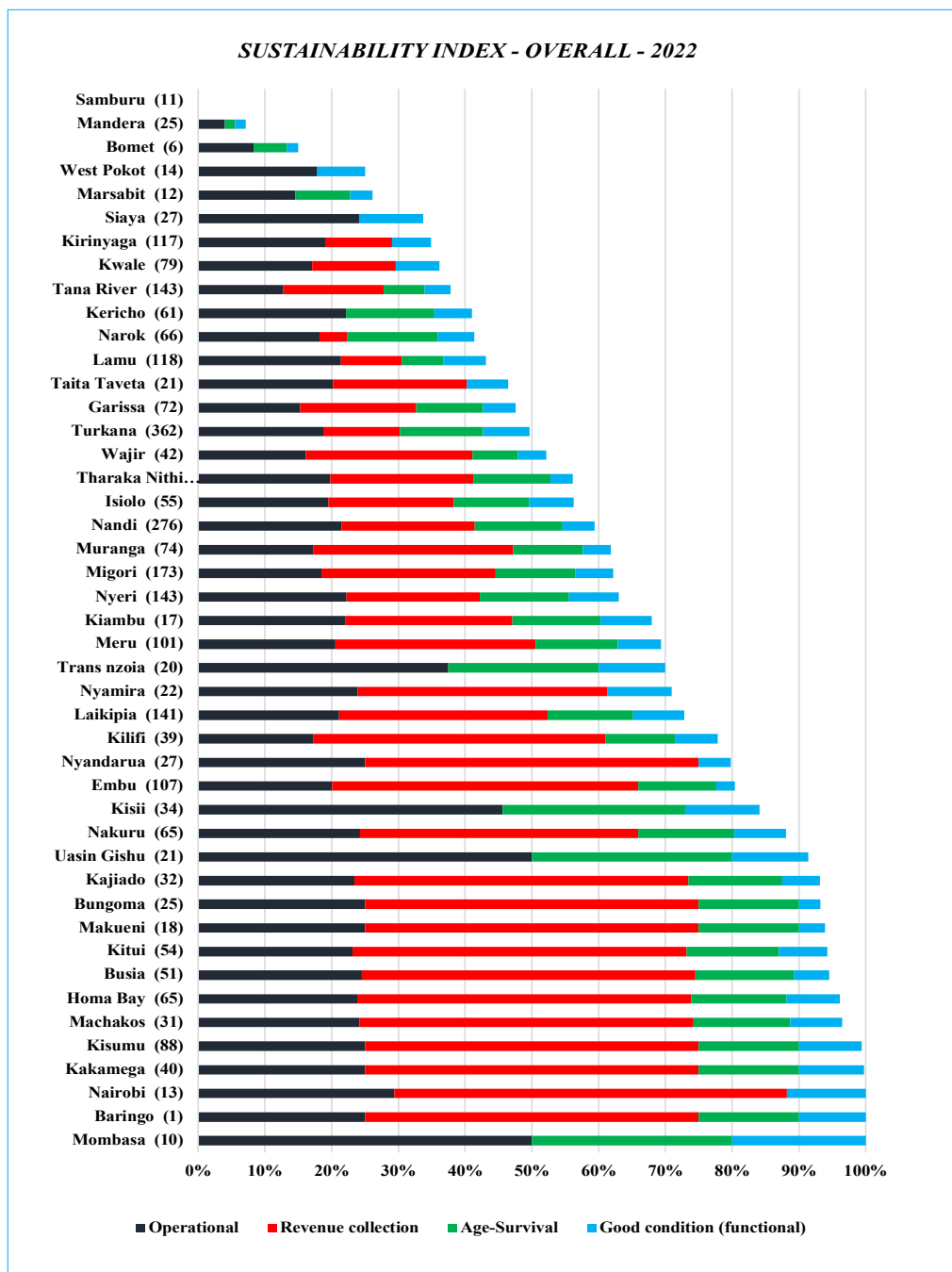
Figure 55: Overall Sustainability Index by county

The overall unweighted & weighted CSI for Urban Investments is presented in figure 55 below.
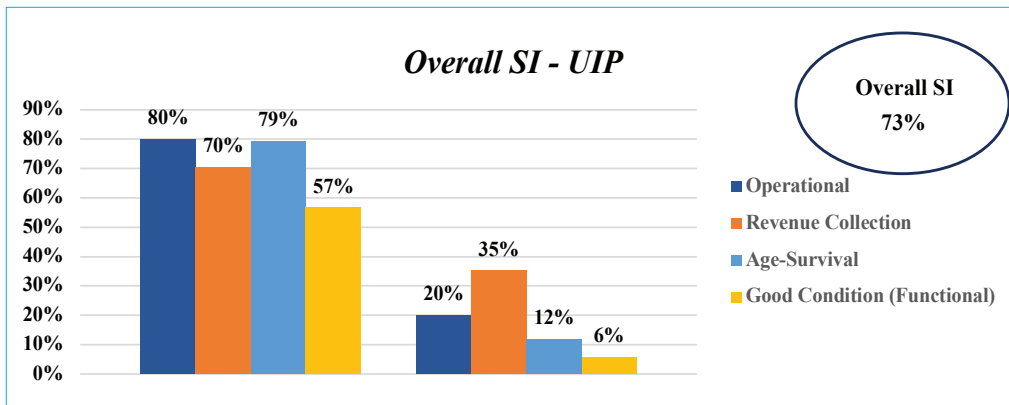
Figure 56: Overall sustainability index for UIP

The top five performers based on the sustainability criteria for urban investments were Mombasa (100%), Nairobi (100%), Kakamega (100%) and Kisumu (99%). Meanwhile, there were some counties with a score of less than 50% namely: Tana River, Laikipia, and Samburu. Counties with less than 10 monitored investments were excluded from the analysis.
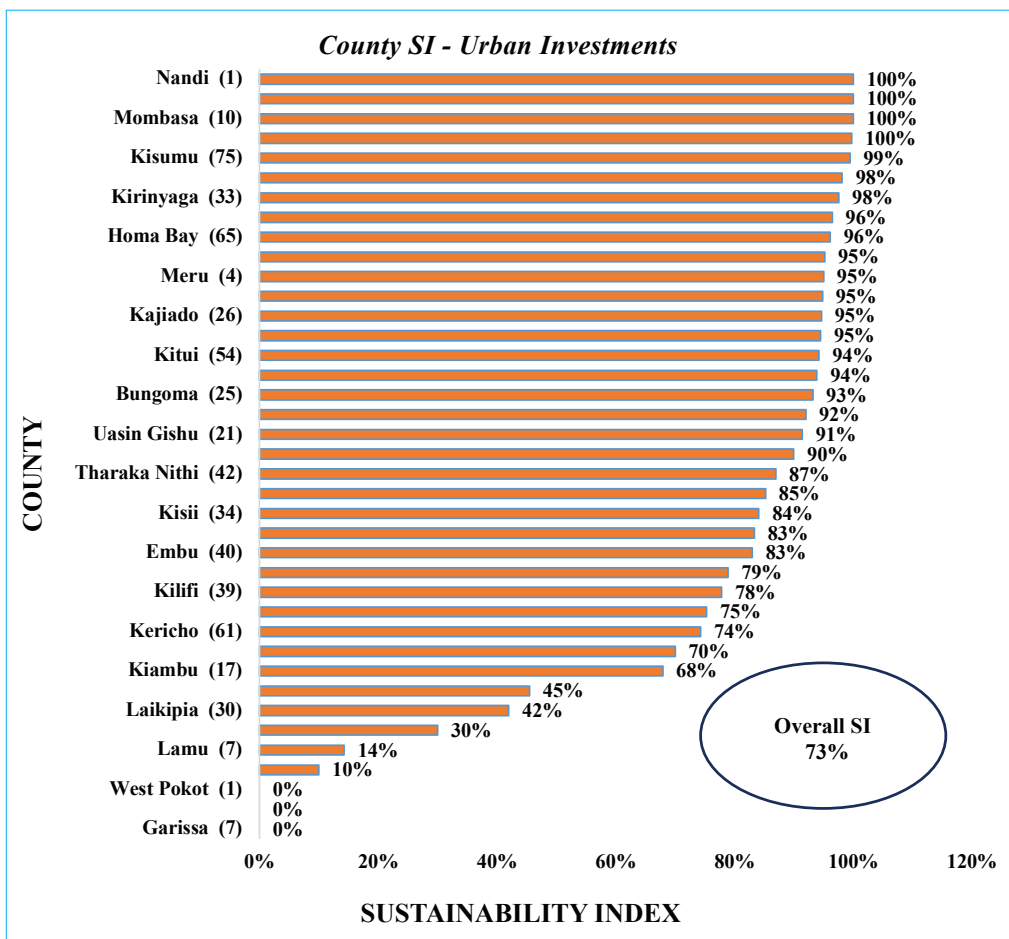
Figure 57: County sustainability index (CSI) for UIP
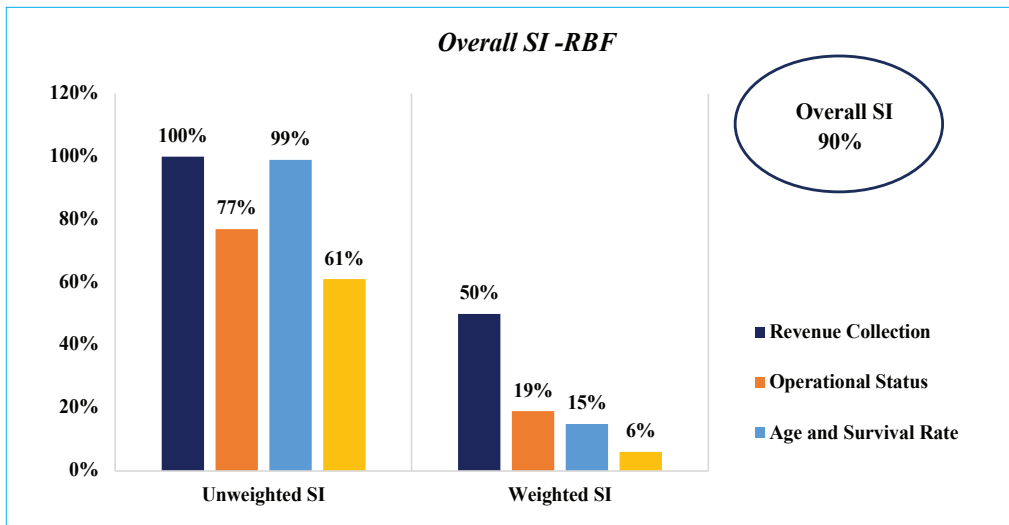
Figure 58: Overall sustainability index for RBF
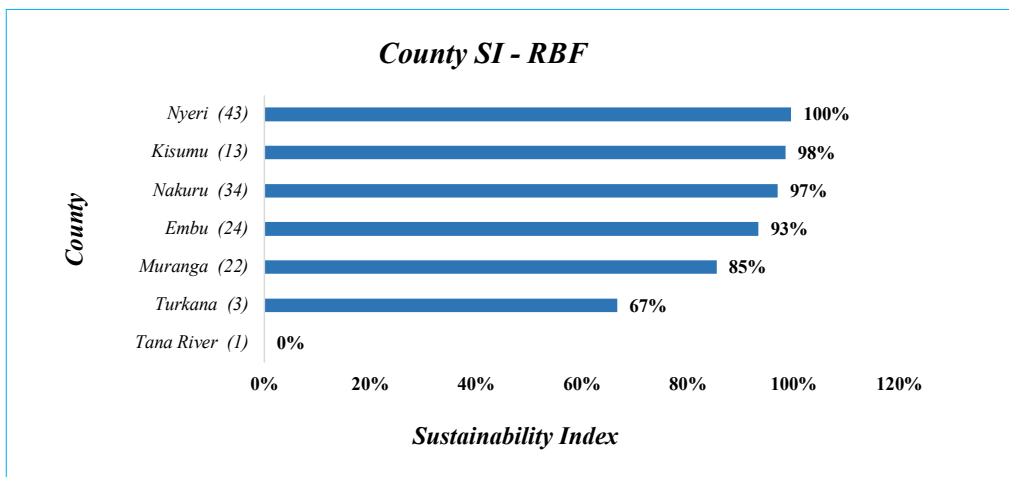
Figure 59: County sustainability index (CSI) for RBF

The best performers for rural projects were Laikipia (70%), Taita Taveta (68%), Kajiado (64%), Migori (61%), Nandi (59%). There were some counties with less than 10 monitored investments such as Baringo, Nakuru and Bomet should be excluded from the analysis despite their high scores.
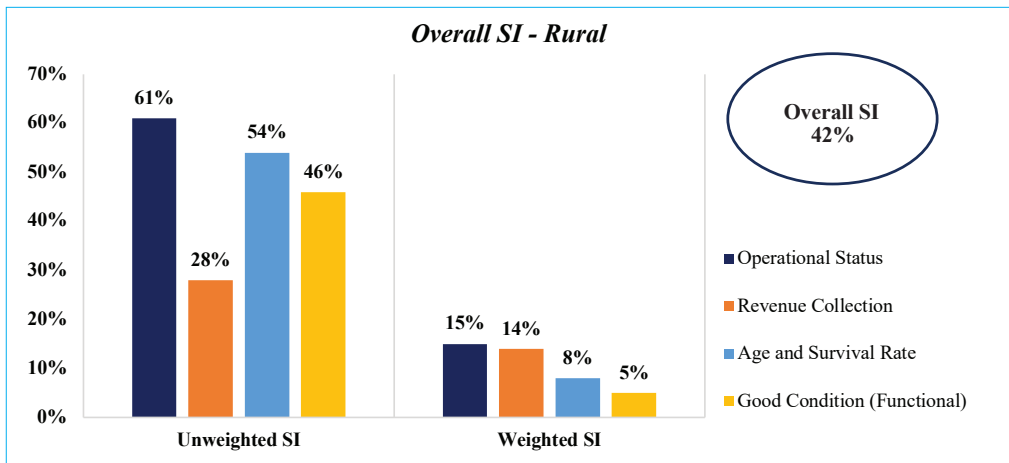
Figure 60: Overall sustainability index for RIP
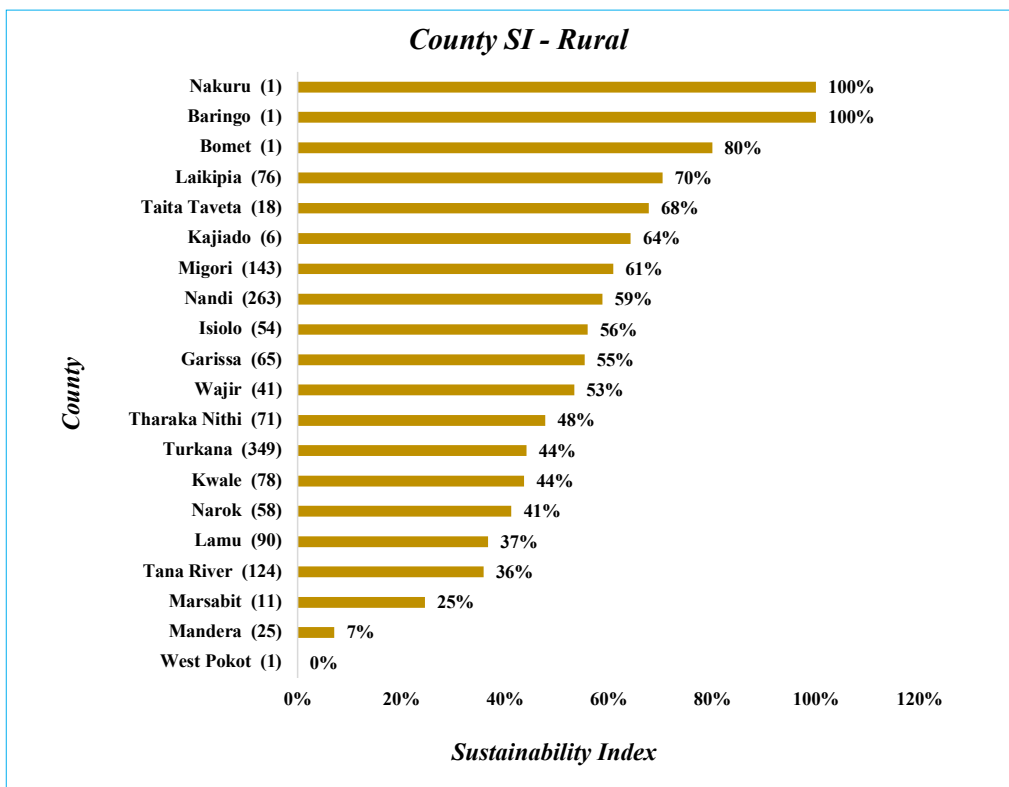
Figure 61: County sustainability index (CSI) for RIP

With regards to Water Resources Investments, the best performing counties were West Pokot, Tharaka Nithi and Laikipia. These Counties from the analysis reached a score of 70% or above excluding counties with less than 10 monitored investments.
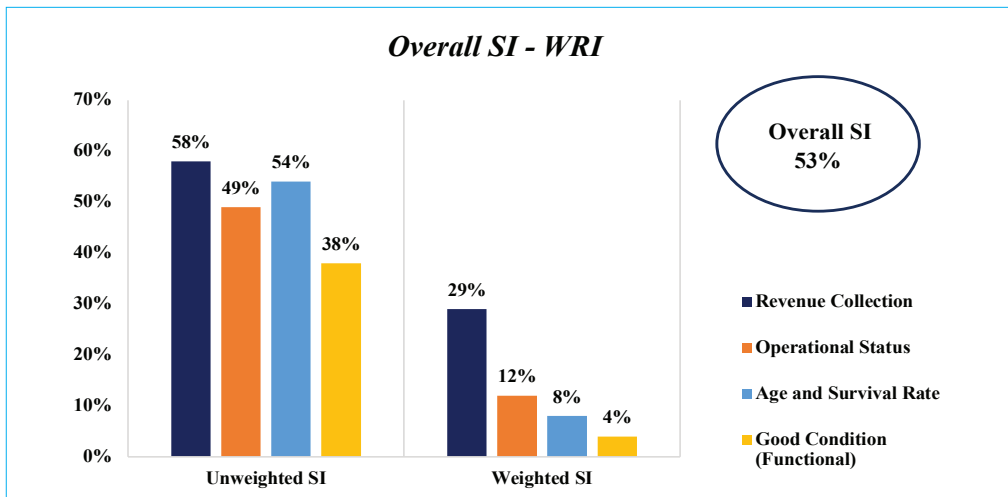
Figure 62: Overall sustainability index for WRI
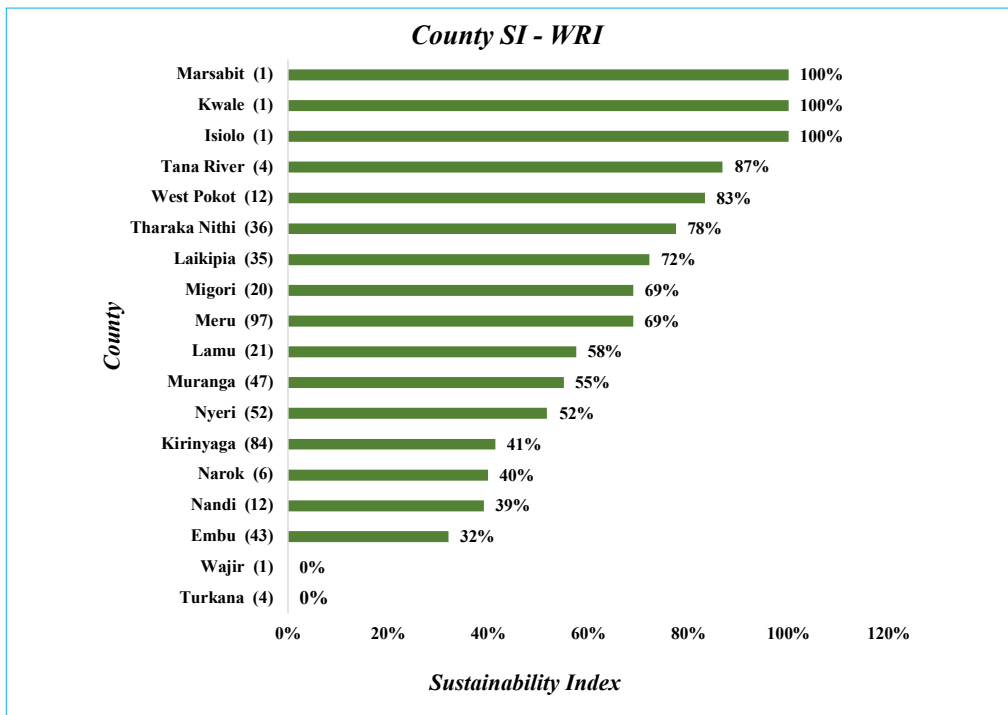
Figure 63: County sustainability index (CSI) for WRI

4.2 Sustainability Index by Investment Window

In overall, Results Based Financing window investments had the highest sustainability index (51%) followed by Urban window investments (46%), Rural Window Investments were at (38%) followed by the Water Resources Window Investments (37%). These findings could be attributed to the fact that Result Based Financing projects emphasizes on revenue collection for sustainability in addition, the urban projects are largely undertaken in areas with formal structures of management and governance (WSPs) compared to rural and water resources investments.
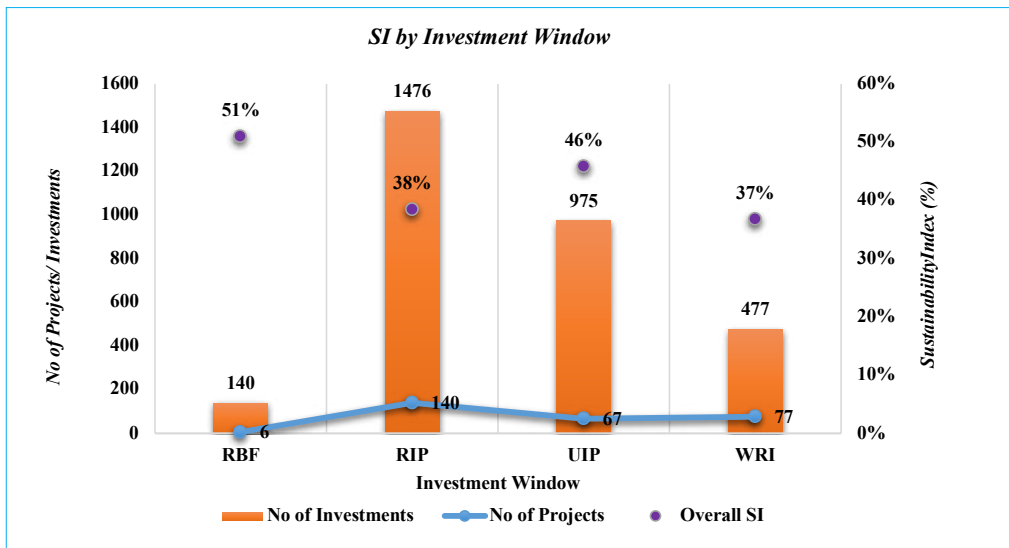
Figure 64: Overall sustainability index by Investment Window
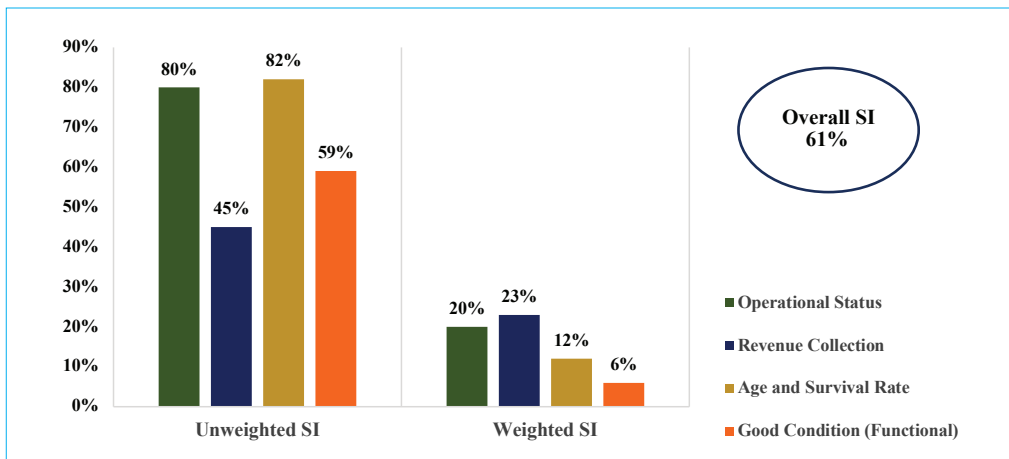
Figure 65: Sustainability index by Investment Window
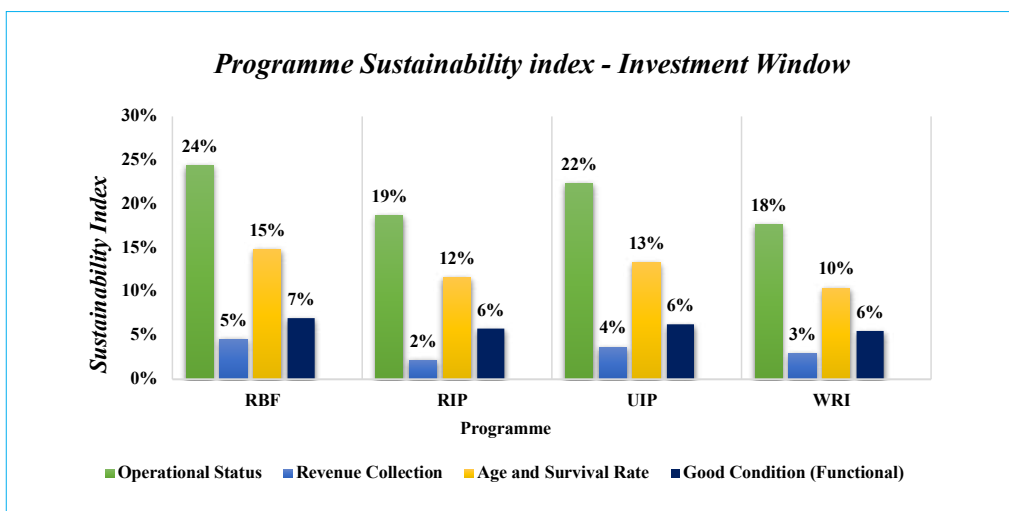
Figure 66: Sustainability index by programme

Sustainability by Investment window indicates that generally, RBF programs had higher levels of sustainability. This is confirmed by 98% being operational, 99% survival by age, and 70% are functional and in good condition. Overall RBF sustainability is 51%.

The lowest sustainability is depicted by WRI which has 71% operational, 70% survival by age, 55% in good functional condition and only 6% revenue collection. Overall, WRI have SI of 37%.

4.3 Sustainability Index by Programme
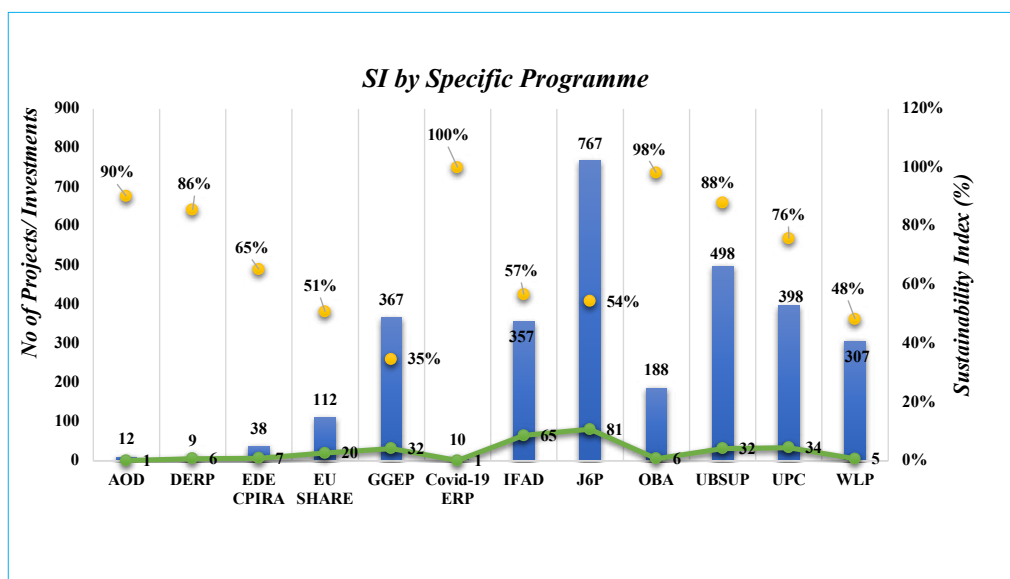
Figure 67: Programme specific Sustainability Index
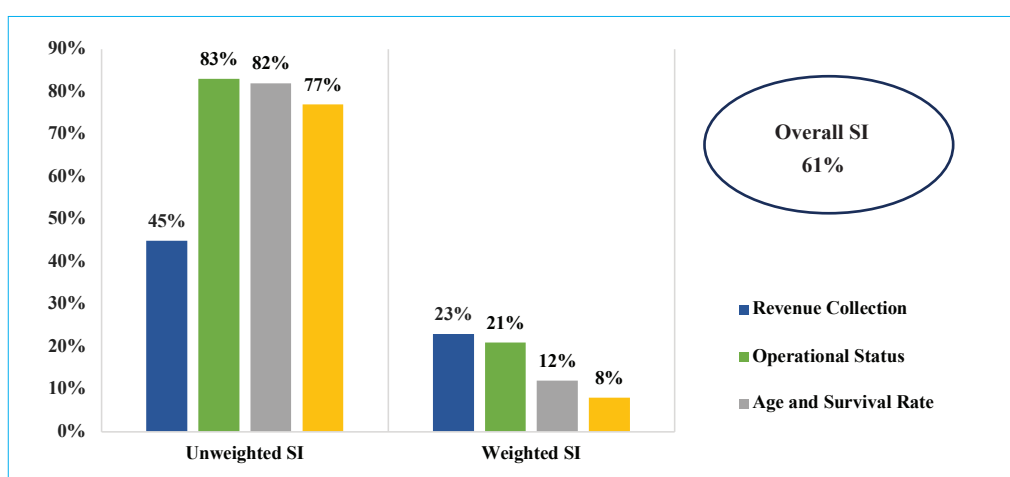
Figure 68: Overall sustainability index

SI by program indicates that Covid-19_ERP were 100% sustainable, followed by OBA at 99% and AOD at 90%. On the other hand, GGEP had the least sustainability index of 35%. Overall programme SI index was 63%.
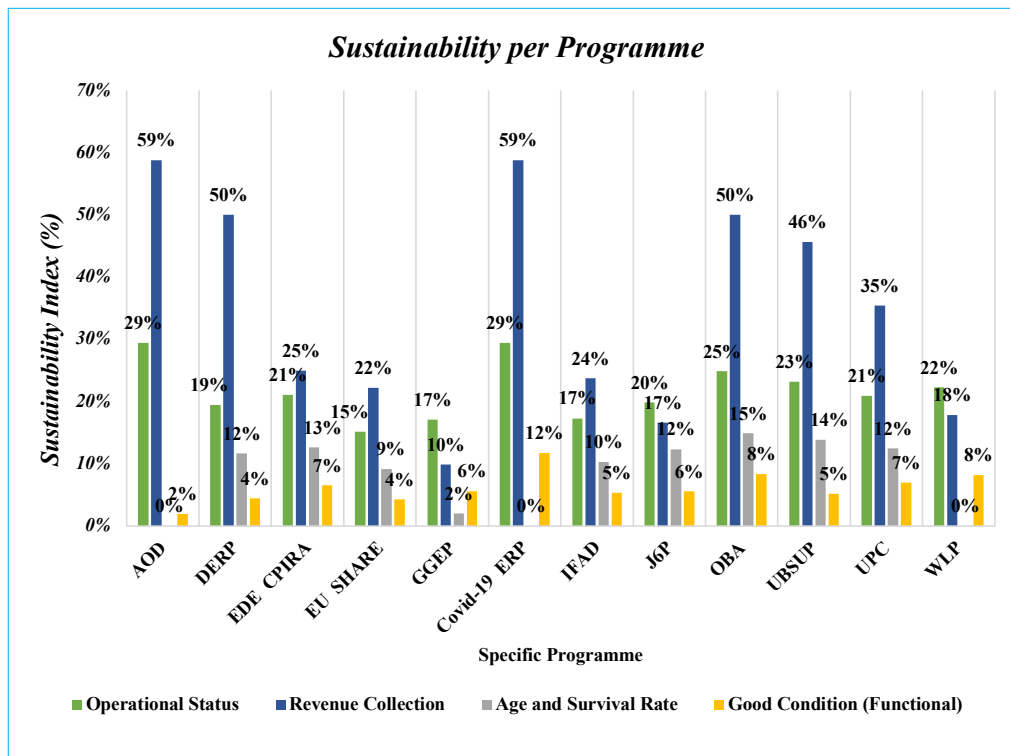
Figure 69: Programme specific Sustainability Index

4.4 Sustainability Index by Investment class
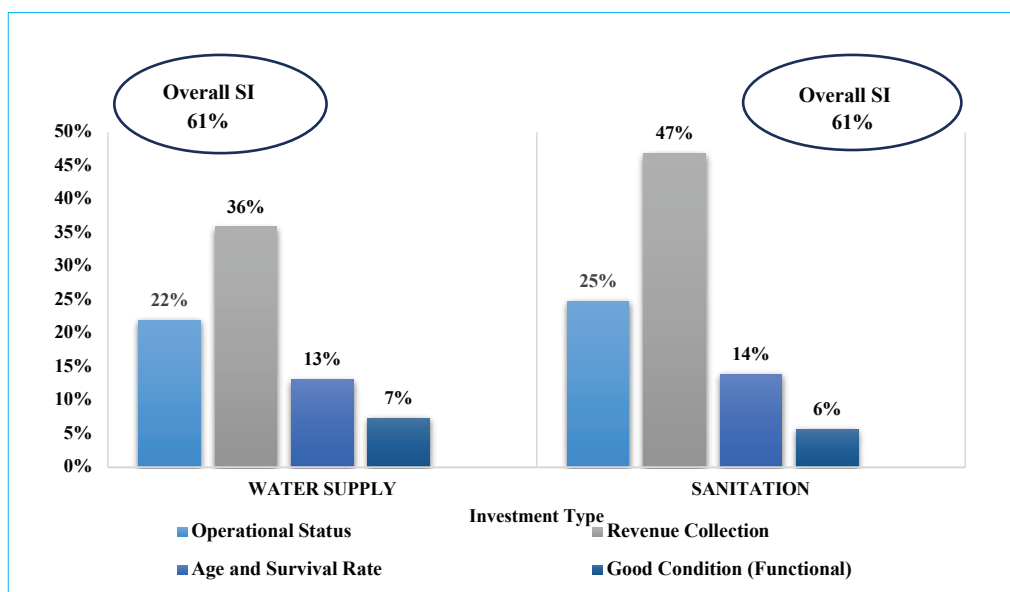
Figure 70: Sustainability Index by investment class
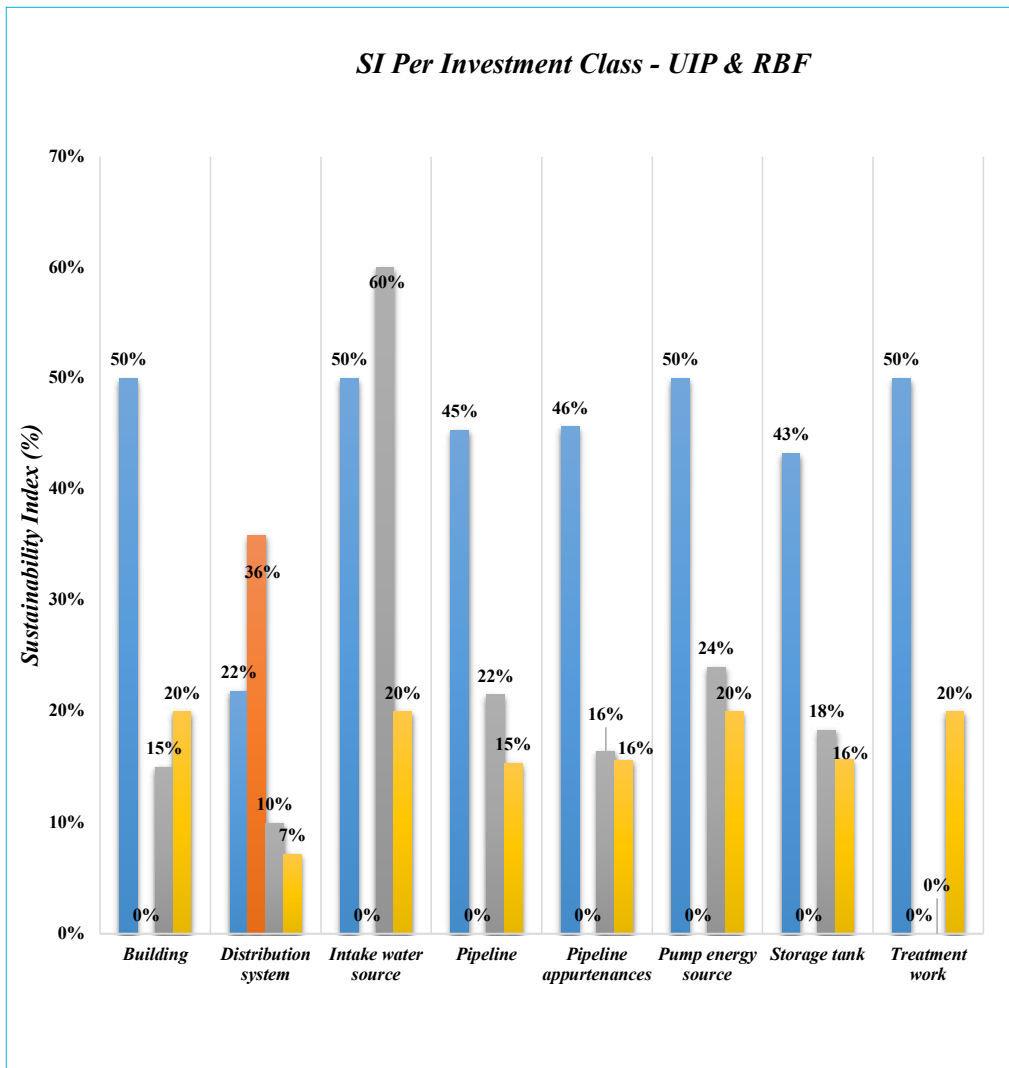
Figure 71: Sustainability index by investment class - Water supply (UIP & RBF)
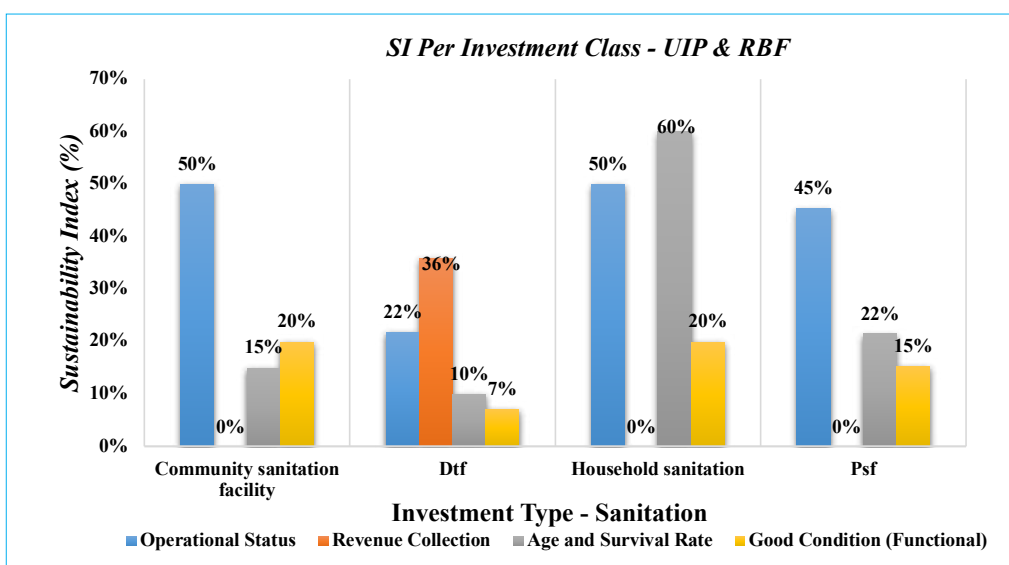
Figure 72: Sustainability index by Investment Class - Sanitation (UIP & RBF)

Community sanitation facilities were more sustainable with DTF's being the least sustainable. This may be attributed to the demand levels of existing community sanitation facilities due to lack of alternative sanitation options. On the contrary, DTF being the least sustainable attributed to low demands, associated costs and low revenue returns to the water utiliti
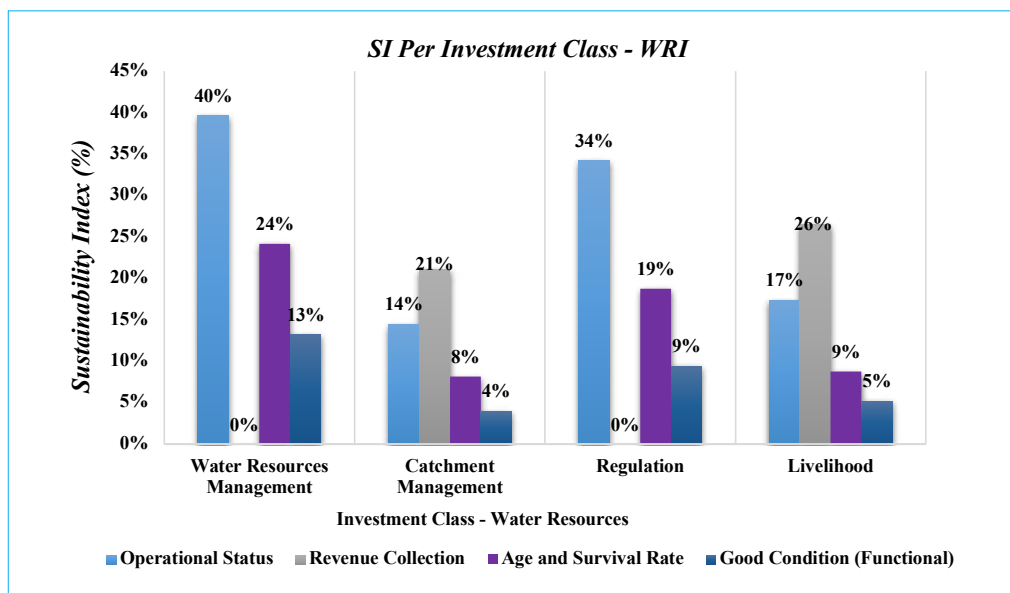
Figure 73: Sustainability index by Investment Class - Water Resources (WRI)
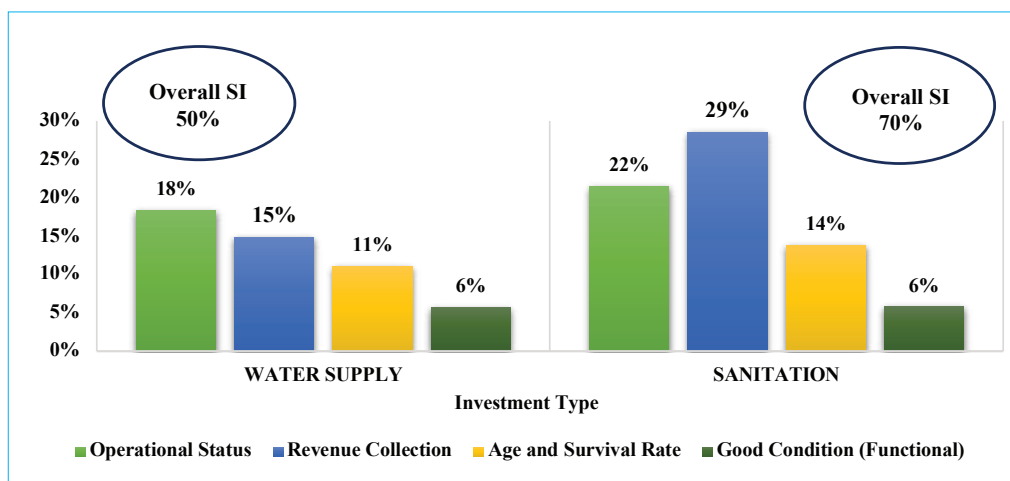
Figure 74: Overall sustainability index by Investment Class - Water Supply: Rural
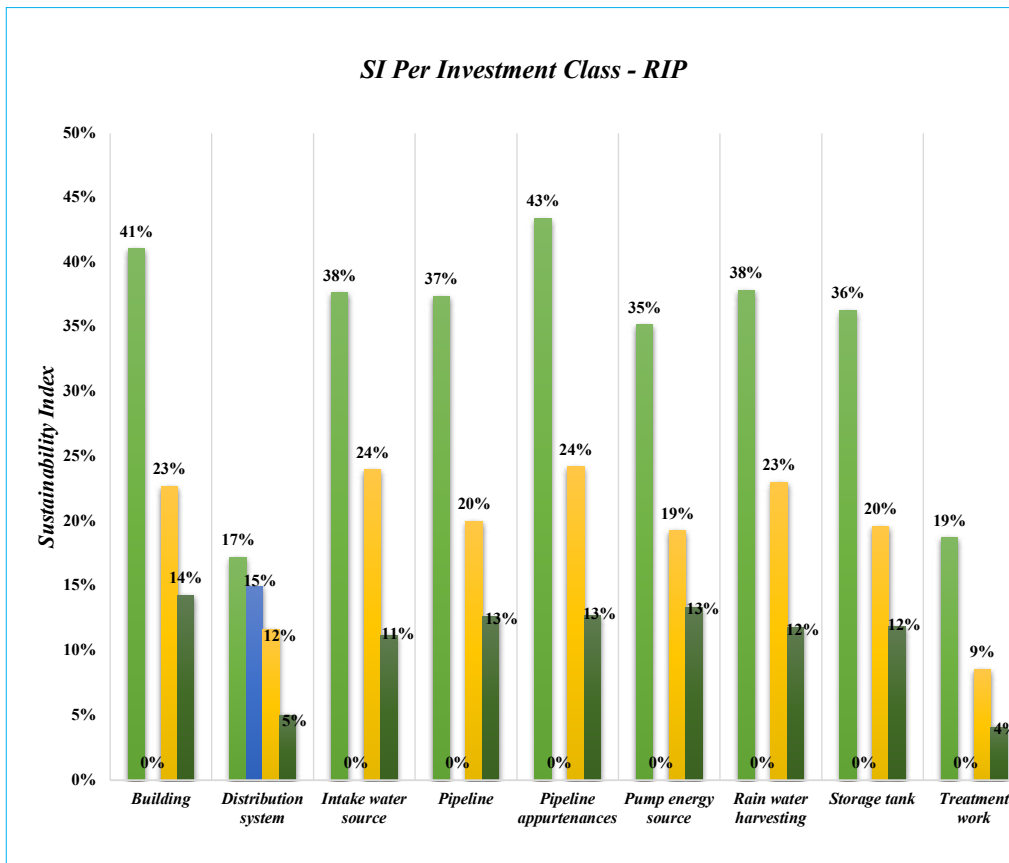
Figure 75: Sustainability index by Investment Class - Water Supply: Rural
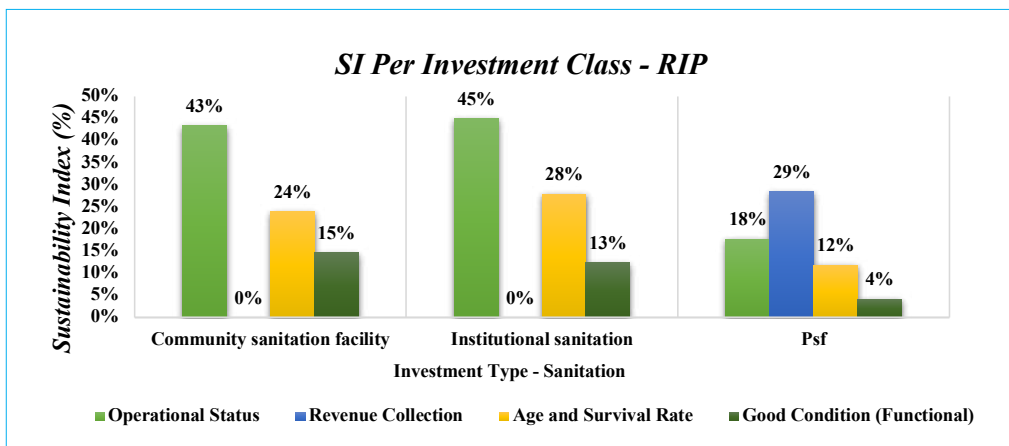
Figure 76: Sustainability index by Investment Class - Sanitation: Rural

4.5 Factors Affecting Sustainability of Projects and Investments

In order to understand why some projects and investments were not collecting revenue or non-operational, or had not met the age and survival or were not in good condition which directly and indirectly affects sustainability, there's need to pay attention to the following factors:
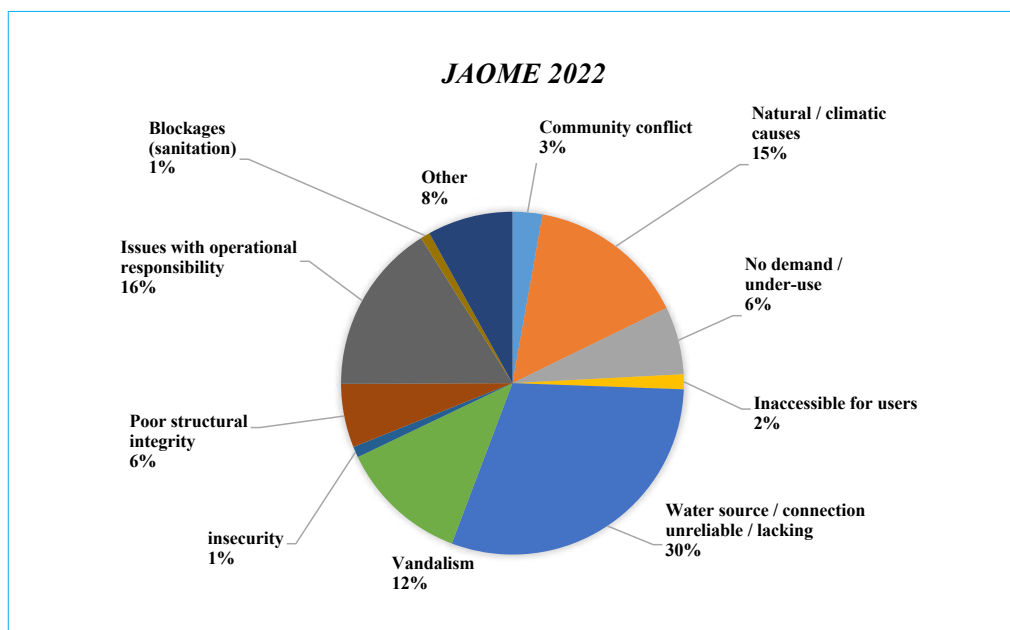
Figure 77: Sustainability index by Investment Class - Water Supply: Rural

For learning purposes, the JAOME 2022 findings can be compared to the reasons for investments not being fully operational during JAOME 2019 as shown below.
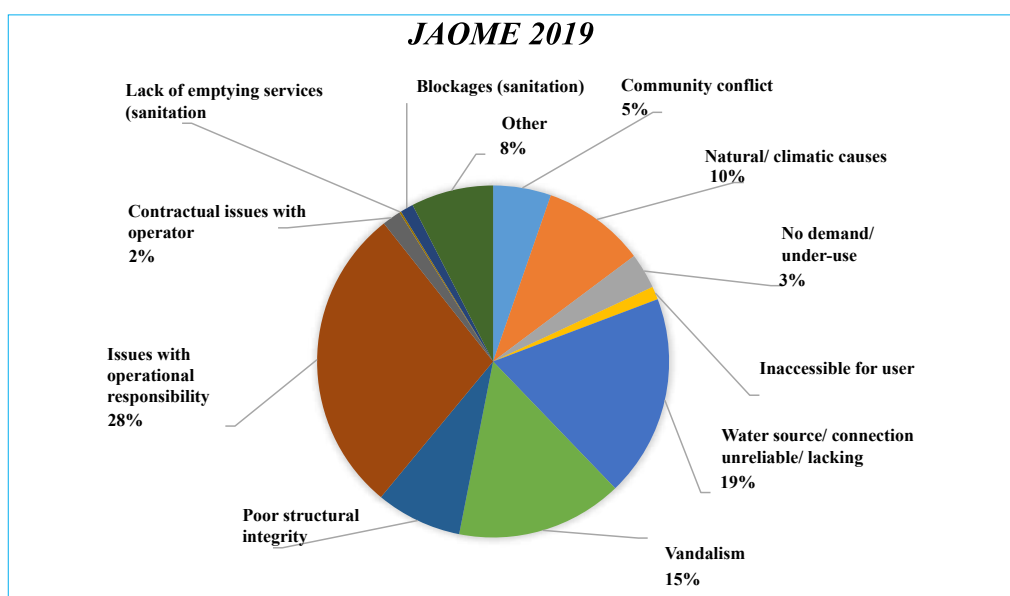
Figure 78: Sustainability index by Investment Class - Sanitation: Rural

With regard to sustainability, the findings highlight the following:

1) Non-operational projects increased from 8% in the year 2019 to 11% in the year 2022. The service level in 2022 of operational projects included water supply (71%), sanitation (89%), water resources (69%) and integrated projects (70%). The reduced operational level may be attributed to natural climatic causes which increased from 10% to 15% in 2019 to 2022 respectively. This is also evident by the proportion of non-operational projects in ASAL counties. These included Mandera (75%), Tana River (27%), Wajir (22%), West Pokot (33%) and Isiolo (25%).

2) Governance issues around management, operation and maintenance also improved from 2019 to 2022. This is evident from reduced vandalism from 15% in 2019 to 12% in 2022. Also, community conflicts reduced from 5% to 3% in the year 2019 and 2022 respectively. Further, issues with operational responsibility reduced from 28% in 2019 to 16% in 2022.

3) There has been a significant improvement in identifying sites for projects and investments, designs, quality of works and construction compliance. This is evident from the designs and structural integrity of both water and sanitation projects which improved from 8% in the year 2019 to 6% in the year 2022.

4) Water quality and quantity are parameters that indicated population satisfaction with water schemes. 76% of water schemes indicted adequate quantity of supply throughout the year with 84% registering above average to very good water quality. Supply levels at individual and institutional connections only indicated 5% being permanently dry. The above gives clear indication of improved capacity of water service providers being able to maintain good level of continuous supply of water in good quantity and quality.

5) Supply efficiencies and frequency may be correlated to levels of willingness to pay hence revenue collection. Of all water connections 69% pay for the services, while in sanitation and water resources use only 29% of each user pays for the services. Individual and institutional water connections make payments at almost 100%, while at water kiosks and yard taps are at 48% and 28% respectively. This indicates that beneficiaries prefer individual connections when compared to communal water points.

5

CHALLENGES FACED DURING JAOME 2022

CHAPTER 5: CHALLENGES FACED DURING JAOME 2022

There are challenges that were faced during the data collection process. These include logistics, communication, access to certain areas as well as data quality issues. It is important to recognize and address such challenges to ensure continuous improvement of the process as well as the completeness of the collected data. The challenges are detailed as follows:

5.1 Locating Projects

In some projects, the locations were situated in remote and hilly areas that were inaccessible by vehicles, leading to significant delays for the team to reach these project sites. This highlights the need for more vehicles in future exercises to ensure the team can access all projects efficiently and effectively. At the IP (Implementing Partner) level, certain team members lacked familiarity with projects implemented before their involvement or various staff had left the organizations. Thus, retrieving some information was a challenge and taking long to get a guide who knew the project locations.

Due to the worsening drought conditions in the country, some key informants earmarked for data collection and monitoring were unavailable. They had migrated with their cattle to find water and better grazing opportunities, particularly common among water users' committee members. However, representatives of the Implementing Partners were more readily available for engagement. Additionally, the projects encountered challenges with impassable roads and difficult terrains, making it even more arduous to access and oversee some investments.

5.2 Time and Distance

The team faced challenges in completing the data collection exercise as planned due to limited time, resulting from oversight in including the traveling day as a working day in the initial planning. This meant they had to start operations early in the morning and work late into the evening to gather the required data. The projects were situated far apart, and some investments within a single project were installed at considerable distances, making it difficult to cover a large number of projects in a single day. Additionally, meetings with county water executives and implementing partners further delayed fieldwork as a step for organizing field logistics.

The team experienced time constraints, leading to strenuous and extended working hours to meet their data collection targets. The counties' distant locations, coupled with rough and forested terrains, presented navigation challenges, resulting in significant time spent on the road while accessing project sites.

5.3 Insecurity

Insecurity was a significant concern during the project monitoring process. There were reported cases of insecurity, including a planned monitoring day coinciding with a terror incident. To ensure the safety of the team, they had to cancel their plans and reschedule the monitoring to more secure locations. However, this led to disruptions and hindered the team's ability to fully monitor all the sampled projects.

The security situation in some project sites was volatile, making it difficult for the team to access certain components of the projects. The uncertainty and potential risks associated with the security challenges further complicated the monitoring efforts. Thus, an adequate budget should be allocated to facilitate security arrangements during the exercise to ensure safety of the teams involved in the fieldwork.

In addition to the broader security issues, the team encountered a specific incident involving a village dweller who falsely claimed to be a village elder. This individual directed insults at the monitoring team without any apparent reason, creating an unpleasant and potentially confrontational situation during their fieldwork.

5.4 Lack of Respondents

The monitoring team faced multiple challenges during their assessment, including communities lacking of respondents about project funding or uncooperative households fearing an audit process. Occasionally, teams required to depend on local communities for locating investments whereas a majority of a community members were absent due to work.

Some community members refused to participate due to past experiences with NGOs not providing feedback. Non-operational project areas had high expectations from the study, while gatekeepers in some areas attempted to control the team's interactions for monitoring purposes.

5.5 Facilitation of Field Guides

Field guides were required during the exercise to enable easy location of investments and introduction to communities thus saving on time. Due to changes in staffing, information on projects implemented by specific staff could not be easily located. The team felt that the budget allocated was not sufficient to cater for guides familiar with the project sites.

5.6 Branding

One of the previously funded projects was rehabilitated by other NGOs which cannot be easily identified. It was advised that in such incidences either the external stakeholders should be given guidance on branding as per the standard WaterFund design.

5.7 Technical data collection tool

After successfully submitting the project, the enumerator is unable to make any edits to the data related to the project. In the event of an erroneous or mistaken submission, it cannot be rectified once sent.

5.8 Cultural and language barriers

In certain counties, the team faced challenges due to cultural and language barriers, impacting effective communication with the local communities. For instance, the team had to depend on interpreters to interact with the locals, resulting in a slowdown of the monitoring process.

Additionally, resistance from committee leaders, who were doubtful of the team's motives, posed difficulties in accessing project information and caused delays in the monitoring efforts.

6

LESSONS LEARNED

CHAPTER 6: LESSONS LEARNED

6.1 Process preparation

Monitoring of projects is a paramount aspect in planning for future projects. It helps in discovering shortfalls that should be avoided in future implementation of projects. Close monitoring is only effective when there are proper record keeping for future references when drafting a plan.

Data collection should be strategically planned to capture relevant information at various stages of project implementation. Baseline data should be collected before project implementation to establish a starting point, and periodic data collection should be conducted during and after project implementation to track changes in water and sanitation practices, community behaviour, and health outcomes.

The Planning and Quality Management department plays a significant role in coordinating these efforts. To ensure a smooth operation, the JAOME roadmap should be prepared at least three months in advance, and the necessary budget should be procured on time. This budget should cover the development of tools and real-time testing before the teams are dispatched for data collection.

6.2 Field plan

The team conducted an inception meeting to prepare for data collection, considering various scenarios related to working hours, the number of investments per project, travel distances between sites, and effective collection strategies. They also evaluated the option of starting from the furthest location and forming smaller teams for the task. With prior analysis of actual investments and terrain, the field plan and time allocation to clusters were made more practical and realistic with the help and support of the CRMs and WSP officials.The familiarity with the terrain and transportation options further enhanced the field plan's practicality. To ensure the participation of Project Implementing Partners, they should be contacted well in advance to avoid any delays caused by short notice.

County Resident Monitors (CRMs) should continue to be actively involved in the field planning process to accurately estimate distances and field days required for each investment. To facilitate their planning, specific information required from Water Service Providers (WSPs) should be made available to CRMs before their visits. To improve efficiency, CRMs should be involved in planning, and the data collection tool should be revised to collect only essential data for sustainability index determination.

6.3 Data collection tool

The current data collection tool has proven to be appropriate and user-friendly. However, further review is necessary to minimize the collection of data that does not contribute to the final reporting. Data collectors, trained on the data collection tools and methods, must adhere to strict protocols to ensure accurate and reliable data collection from the field. Effective data collection is crucial for the success of the exercise.

The choice of data collection questions should be guided by the specific objectives of the exercise, the nature of the data being collected, and the context in which the data is being collected. To avoid unnecessary repetitiveness and improve response rates, it's essential to use fewer, concise survey questions that are directly relevant to the project's goals. It is important to organize the information into paragraphs with relevant headings to make the questionnaire clearer and more concise and also to avoid unnecessary duplication of information.

The data collection tool should be improved to automatically filter the name of the constituency upon selecting a particular project and county. It should also allow the selection of multiple pictures.

6.4 Data Quality Checks and Submission

Collaborative teamwork and effective communication during data submission are essential to conduct quality checks before submission. Additionally, upgrading the application to allow full viewing and downloading of submitted data would aid in compiling the field report. Enumerators should receive adequate training to ensure a common understanding of the features of different projects and avoid repeated questions in the data collection process.

Ensuring the readiness of mobile devices was also highlighted, including loading them with internet credit and providing chargers to maintain sufficient battery power during field work.

6.5 Team work and cohesion

Its only through team work and coordination every team achieves the overall goal. Where team work is definite, work seems easier and interesting to all members hence increased productivity.

6.6 Condition of Investments

Generally, over 80% of projects were functioning well despite the prolonged drought and weak governance structures. There was clear evidence of non-involvement of county governments where projects were largely rural based but implemented by WSPs and handed over to the county government.

6.7 Community Participation in Project Implementation

Low community/beneficiary involvement in the projects from the initiation stage results in poor governance whereby only a few members of the community actively made decisions concerning project management. Community engagement is critical as a measure to protect project facilities from vandalism or theft and should be prioritized.

6.8 Quality of Works

There was evidence of poor workmanship. This may have resulted from design or poor use of low-quality materials such as concrete mix. This was evident from the materials such as gauges of barbed wires and chain-link used for fencing, construction blocks, class of concrete, low gauge of roofing sheets, unmatched solar capacity to pump rating and placement of the pipeline along road coverage.

6.9 Site Identification and Mapping of Investments

Identifying proper sites for projects and mapping of project investments is critical. For example, boreholes should be done with serious consideration of water levels during dry seasons. Further, proper mapping of all facilities should be conducted by implementers to prevent conflicts during road construction.

There were instances where pipelines were destroyed due to road construction works and there was no compensation. There is need to continuously seek approval from the necessary institutions while laying pipelines and indicating identifiers/marker post where lines a laid. Such will ensure compensation in case of destroyed lines or advance notice to move the lines.

6.10 Payment for Water Services

This has not been embraced as most water schemes are not generating revenue. All reported a tariff set but payment and collection of that water service revenue is not effective and thus when a project breakdown, they are not able to fix locally due to lack of expertise.

7

RECOMMENDATIONS

CHAPTER 7: RECOMMENDATIONS

The recommendations derived from the collected data are to inform future approaches for operations monitoring as well as investment planning. The data collected in the study is utilized to inform decision-making at all levels, including donors, policymakers, implementing partners and the beneficiaries. WaterFund utilizes the data to identify areas for improvement and guide future interventions effectively. The overall recommendations are as follows:

7.1 Project Design Informed by Data

All projects should be designed with sustainability in mind. This involves using appropriate technologies and materials, involving the community in the planning and implementation, and ensuring that the project can be maintained and serviced over time. The decisions about appropriate technologies should be informed by previous data analysis from the Joint Annual Operation Monitoring Exercise (JAOME).

Innovative design of projects while factoring issues such as climate proofing and green infrastructure components as well as the use technology such as zonal meters and smart meters for individual connections. Continuous improvement to include more climate smart designs and materials should be prioritized in all programming.

7.2 Policy Development

A clear policy should be developed by WaterFund to address the issue of community/WSP contributions towards Operations and Maintenance (O&M) costs of the projects.

7.3 Mitigating Climate Change

Climate change is a major driver that determines operational status of the existing infrastructural projects. Dwindling water sources due prolonged periods of drought resulted to several projects not being able to function optimally. More efforts in future programs require enhancing investments in water resources conservation and management to mitigate effects of climate change.

7.4 Improved Stakeholder Engagement

The beneficiary communities and county government are taking more responsibility in the management of the projects. This can be attributed to a more participative approach in joint projects identification, bringing in demand and ownership of the projects.

An improved stakeholder engagement approach will ensure that a robust management team is put in place to work earnestly to ensure accountability and transparency to the beneficiary population.

7.5 Continuous Capacity Building

Continuous capacity building to the water service providers on treatment and innovative ways of water supply including adoption on use of climate smart infrastructures should continuously be embraced especially for the weak utilities.

7.6 Strengthening of Governance Systems

The ability to ensure efficiency and reliability of services depends a lot on governance and management frameworks put in place. It is evident that with improved governance systems, there is less conflicts, supply efficiency, frequency and quality of water satisfies the consumer needs, hence their ability and willingness to pay promptly. Individuals and institutions are more willing to pay for water and sanitation services if the services provided are consistent and reliable. Future undertakings should ensure management of water schemes is strengthened to guarantee confidence from the consumers, hence inflow of revenues that ensures continuous operations and maintenance.

Water committees training is not adequate to enhance their capacity to manage rural water schemes. They lack motivation and thus need to closely work with the County government on future follow ups to ensure all projects and properly managed. Composition of committees should also include leaders like school heads and other professionals in the area to offer technical support or ideas on better ways to manage the systems. Governance issues should be thoroughly assessed and addressed in project implementation to avoid non-functioning management committees, conflicts of interest and poor leadership.

7.7 Gender and Age Disaggregation for Realistic Data

Data on gender and age should be carefully considered to ensure accuracy, especially for projects like spring protection and tanks where WRUAs might not have precise disaggregated information. When reviewing data on beneficiaries, gender and age disaggregation should be considered to ensure the data is realistic and meaningful. To improve data accuracy, such disaggregation criteria should be included in the project proposal and reporting formats.

7.8 Continued Monitoring

To institutionalize JAOME as a key process within WaterFund with support of all stakeholders, it is recommended that programmes progressively allocate funds towards the exercise. The funds should be post project activities as this exercise takes place beyond

the active projects period just as it is with Audit. WaterFund should continue operations monitoring to determine the sustainability index of the implemented project activities and identify future areas of intervention. For example, the data suggests that for the sustainability of WRUAs, the fund should ensure that livelihood activities are supported and accompanied with a sound business plan for income generation in the association. Further, in order to ensure project sustainability, the project exit strategies should emphasize on capacity-building measures for the realization of skilled operators and continuous retraining should be encouraged and implemented to enhance the skills of operators, users and project task teams.

CONCLUSION

In conclusion, the data plays a pivotal role in measuring effectiveness of projects and identifying areas for improvement, thereby contributing to the overall success and long-term impact of initiatives. Sustainable Development Goals (SDGs) are a set of global targets aimed at eradicating poverty, promoting social equality, and protecting the environment. By evaluating project sustainability and making necessary improvements, WaterFund aligns its efforts with the broader global agenda of sustainable development. Ultimately, the purpose of JAOME is to improve the lives of communities and the country as a whole by ensuring the long-term sustainability of projects. By enhancing access to clean water, improving sanitation facilities, and positively influencing health outcomes WaterFund's initiatives can have a lasting positive impact on the well-being of targeted communities which contributes to the country's development, leading to overall growth and prosperity.

The success of WaterFund financed projects heavily relies on the data collected through the JAOME exercise for Sustainability Assessment. This data provides valuable insights into the projects' performance, their impact on the target communities, and whether they are achieving their intended goals. By gathering and analysing relevant data, stakeholders can make informed decisions about future interventions and allocate resources more effectively. The data collected can be used to formulate strategies for enhancing project sustainability. By analysing the challenges and gaps identified in the data, stakeholders can develop appropriate measures to address them.

Strategies may include improving project design, enhancing governance structures, strengthening community involvement, and response to arising matters by reallocating resources to critical areas. The data allows project implementers, policymakers, and donors to assess whether the objectives set at the project's outset have been achieved or if adjustments are necessary.

The sustainability assessment enables stakeholders to understand the extent to which projects are meeting their intended outcomes, whether they are improving water access, sanitation practices, health outcomes, or other target areas.

Based on the lessons learned through the JAOME 2022, it is plausible to conclude that o sustainability of water and sanitation provision in hinged on stakeholder's participation in mobilization of resources for investments that promote the restoration and protection of freshwater ecosystems. This may involve measures such as reducing pollution, implementing sustainable land use practices, and creating protected areas for aquatic species. Additionally, adaption to the climate change crisis by improving water efficiency, investing in water infrastructure, and developing new water sources, which can involve measures such as implementing water reuse and recycling programs, upgrading water treatment facilities, and investing in desalination technologies.

The growing demand for sustained water and sanitation services is a formidable challenge that calls for immediate action and collaboration of all stakeholders. Strengthening water and sanitation systems in addition to sustainable water resources management is crucial to ensure that everyone has access to safe, clean water and improved sanitation facilities. By implementing sustainable practices, investing in infrastructure, and raising awareness, WaterFund ensures utilization of this precious resource for current and future generations.

The overall Sustainability Index of the various water, sanitation and water resources management initiatives undertaken through WaterFund financing and support has realized marginal improvement from 60% in 2019 to 61% in 2022. It is important to note that provision of water systems should not be left to water providers only, but the projects must ensure that they develop and enhance capacities of institutions through which the communities can manage the new system by it-self once the project support comes to an end.

ANNEXES

ANNEXES

ANNEX 1: JAOME GENERAL FORM DATA STRUCTURE

Page	Comments
Filtering Details	**Swipe left for more questions**

1.   Name of enumerator (1)
2.   Select a County (1)
3.   Select Name of Constituency *(in the background)*
4.   Select Name of Investment window (RIP, UIP, WRI, RBF) (1)
5.   Project name (1)
6.   Project Brief
7.   Year of completion *(in the background)*
8.   Programme *(in the background)*
    if RIP = (MTAP I, MTAP II, KWSP, J6P)
    if UIP = (UPC, UBSUP)
    if WRI = (IFAD, J6P, MTAP)
    if RBF = (AOD, OBA)
9.   Funding source *(in the background)*
10. Category (Water supply, Sanitation, Water resources) (1)
	Questions in this section are Mandatory.
	
	These are preloaded data.
	
	Select one option (1)
	
	Select more than one option (M)
	
	Text field (T)
	
	Numeric field (N)
	
	Radio button (R)

General Information	**Swipe**

1.   Name of Informant (T)
2.   Position of Informant (Official, Committee, User, Caretaker) (1)
3.   Phone number of informant (N)
4.   Is the overall project operational at the time of visit? (Operational, partially operational, temporarily stopped, Non-operational) (1)
    1. If Non-operational, how long has project been non-operational (months) (N)
5.   Does the project serve the intended target group? (Yes/No) (1)
6.   Target Beneficiaries (of Project)
    1. Total no. of people incl. children (N)
    2. No. of livestock (N)
7.   In case of Water resources: Catchment area (km2) (N)
8.   In case of Water resources: Does the WRUA/CFA have a copy of the SCAMP/PFMP? (1)
	Questions in this section are Mandatory.
	
	Select one option (1)
	
	Select more than one option (M)
	
	Text field (T)
	
	Numeric field (N)
	
	Radio button (R)

Financial and Management Information	Swipe

1. Total cost (Ksh) of project as per contract (incl. community contribution) (N)
2. Local Contribution (Labor, Cash, Materials, Land, None) (M)
3. Value of local contribution (Ksh) (N)
4. Governance/Management (Board OD, Board of Management, Committee, MD-Overall, Employees, Volunteers, Contractor) (1)
5. Registration Status (Self Help Group, CBO, Society, Company, Institutional, Other) (1)
6. Records are kept: (Regularly, Irregularly, Not kept) (1)
7. Strategic Plan: (Yes/No) (1)
8. Operations and maintenance (O&M) responsibility (Employee, Committee, Volunteers, Users, Contractor / Operator, Individual, Group, WSP/WU/WRUA/CFA, County Government, National Government, Donor, Other, specify) (1)
   • Total number of people responsible for O&M (N)
   • Number of women responsible for O&M (N)
9. O&M cost, approx. annual (Ksh) (N)
10. Does the project collect revenue? (Yes/No)
11. In case of Water supply: Average water tariff (Ksh/m3) (N)
12. In case of Sanitation: Sanitation charges? (yes/no)
13. In case of Sanitation: Average sanitation tariff (Ksh/use) (N)
14. Project income, average. annual (Ksh) (N)
15. Operation cost coverage =income/ cost*100 (0.00%)
	Questions in this section are Mandatory.
	
	Select one option (1)
	
	Select more than one option (M)
	
	Text field (T)
	
	Numeric field (N)
	
	Radio button (R)

Photo	**Swipe**
Take a Photo of project office	Section is mandatory. Please Take a good picture
GPS Location	
Take GPS location of project office NB: Wait till it indicates the accuracy is at least 5m, then click on 'Record Location''	Click on 'Record Location' button You can Replace location if it is not accurate by clicking Replace location tab
Finalize Form	
Give the particular form entry a name: **Reason:** You will visit several project offices and later on you may need to make some edits on a particular entry. It is easier to get it if you had unique name for the entries. If sure of answers (No edits and ready for online submission), Please check the '*Mark form as finalized*' button. **Mark form as finalized button:** Comes in when you want to 'send' the forms to the server, unless a form is marked as 'finalized' it will not appear in the 'Send Finalized Form' list when you need to submit your collected data.	By default, it gives the particular entry, the name of the data collection form i.e., *"WaterFund General Project'* Please change that to the name of the project you have been collecting data on. Click 'Save Form and exit'

ANNEX 2: JAOME INVESTMENT FORM DATA STRUCTURE

Category	Investment class	Type
A. WATER SUPPLY	Intakes/	Weir - River Intake
	Water	Lake intake
	sources	Water pan
		Dam
		Borehole
		Hand dug well
		Sand dam
		Sub-surface dam
		Spring Protection
	Pumps/	Hand pump
	energy	Solar pumping system
	sources	Hydram
		Wind mill
		Electricity mains
		Generating set
		Diesel pump
	Treatment works	Chlorination unit
		Chemical dosing unit
		Composite filtration unit
		Conventional treatment works
		Slow sand filtration
		Waste water recycling
		Desalination of salty water
	Pipelines	UPVC-Unplasticized polyvinyl chloride
		HDPE-High density polyethylene
		PPR-polypropylene random-copolymer
		GI-Galvanised iron
		DI-Ductile iron
		Unknown
	Pipeline appurtenances	Valve chambers
	Storage	Masonry tank
	tanks	Elevated concrete tank
		Reinforced concrete tank
		Sectional steel tank
		Plastic moulded tank
		Ferro cement tank
		Djabias
		Berkad
	Distribution system	Water kiosk
		Communal Water Point (open)

Category	Investment class	Type	
		Stand pipes	
		Yard taps	
		Individual connections	
		Institutional connections	
		Industrial connections	
		Animal Trough (cattle, donkeys, sheep, goats)	
		Animal Trough (camels)	
		Consumer meters	
		Bulk meters	
	Rainwater	Roof catchment	
	Harvesting	Gutters	
	(From Roofs)	Storage tank	
	Building	Office	
		Laboratory	
		Pump house	
		Fencing	
B. SANITATION	**Public**	Regular	Pit latrine
	sanitation		VIP latrine
			Pour flush
			Cistern flush (squatting)
			Cistern flush (seat)
			UDDT (dry toilets)
		Mini	Pit latrine
			VIP latrine
			Pour flush
			Cistern flush (squatting)
			Cistern flush (seat)
			UDDT (dry toilets)
	Institutional	Pit latrine	
	Sanitation	VIP latrine	
		Pour flush	
		Cistern flush (squatting)	
		Cistern flush (seat)	
		UDDT (dry toilets)	
	Community	Pit latrine	
	sanitation facility	VIP latrine	
		Pour flush	
		Cistern flush (squatting)	
		Cistern flush (seat)	

Category	Investment class	Type
		UDDT (dry toilets)
	Household	Pit latrine
	sanitation	VIP latrine
		Pour flush
		Cistern flush (squatting)
		Cistern flush (seat)
		UDDT (dry toilets)
	DTFs	DTF
		DTF Enpure Hybrid
	Sewers	Municipal sewer
C. WATER	Regulation	Common intake
RESOURCES		Weir self-regulating
		Bulk Meter
	Catchment	Check dams
	Management	Tree planting - Nurseries
		Tree planting - Transplanted
		Gabions
		Fencing of a pan
		Opening of Malkas
		Waste disposal pits
		Riparian pegging
		Energy saving jikos
		Fire breaks
		Installation of early warning systems
		Pruning
		Grass strips
	Water	RWH Pans
	Resources	RWH Dams
	Management	RWH Djabias
	Structures	RWH Sand/sub-surface dams
		Spring protection
		RWH Tanks
		Livestock troughs
		Water pan rehabilitation
	Livelihood	Livestock (Bee hives)
		Livestock (Fish ponds-lined)
		Livestock (Fish ponds-unlined)
		Livestock (Dairy goats)
		Livestock (Poultry)
		Horticulture (Drip kit)
		Horticulture (Greenhouse)
		Horticulture (Greenhouse drip kit)

ANNEX 3: JAOME 2022 FIELD PLAN

JAOME 2022 FIELD PLAN

Teams	TEAM 1	TEAM 2	TEAM 3	TEAM 4	TEAM 5	TEAM 6	TEAM 7	TEAM 8	TEAM 9	TEAM 10	TEAM 11	REMARKS
County Clusters	Kwale -21	Kajiado -5	Garissa -12	Wajir -11	Baringo -1	Tharaka Nithi -25	Meru -20	Nyandarua -5	Nyamira -1	Uasin Gishu -1	Trans-Nzoia -1	Clusters based on workload and routing
	Mombasa -1	Kitui -3	Tana river -11	Lamu -11	Nakuru -6	Embu -9	Kirinyaga -13	Nyeri -22	Kisii -1	Nandi -19	West Pokot -4	
	Kilifi -4	Machakos -4		Mandera -4	Samburu -1			Murang'a -14	Migori -16	Kericho -3	Turkana -11	
	Taita Taveta -6	Kiambu -1			Marsabit -4				Homa bay -3	Bomet -1		
	Makueni -4	Nairobi -1			Isiolo -9				Kakamega -1	Narok -6		
					Laikipia -16				Siaya -1			
									Busia -1			
Total Projects	35	15	23	26	37	34	33	41	28	30	16	318
UIP	9	14	2	1	9	4	3	9	12	6	5	74
RBF					1	2		3	1			7
WRI	3	1	5	5	8	14	30	29	3	6		104
RIP	23		16	20	19	14			12	18	11	133
Data Collectors	5	4	4	5	5	4	4	4	4	4	4	47
CRM/ CRE	4	4	2	3	4	2	2	2	5	4	2	34
Driver/Vehicle	1	1	1	0	1	1	1	1	1	1	1	10

ANNEX 4: SELECTED PICTURES FROM JAOME 2022

Sabuli Water and Sanitation Project in Wajir

Shimbrey project in Garissa

Figure 77: Pictures - Animal Troughs

Lower Tana Delta Conservancy in Tana River

ELIWAS Project in Turkana

Figure 78: Pictures - Biogas Production

Doldol Water Project in Laikipia

Naivasha water extenstion subproject in Nakuru

Figure 79: Pictures - Boreholes

Kimatkei Kipkoil Water Project in Nandi

Rongo Riosiri Water Project in Migori

Figure 80: Pictures - Chemical Dosing/ Chlorination units

Korija Water and Sanitation Project in Wajir

Sake Community Project in Mandera

Figure 81: Pictures - Community Sanitation Facilities

Rongo Riosiri Water Project in Migori

Majimboni Muungano Water Project in Kwale

Figure 82: Pictures - Composite Filtration

Murang'a South water extension subproject phase II in Muranga

Kathwana Water Project in Tharaka Nithi

Figure 83: Pictures - Conventional treatment facilities

Kiambere Mwingi Sanitation Project in Kitui

Households Sanitation Project in Machakos

Figure 84: Pictures - Decentralized Treatment Facilities

Nyangoro Maktau Water
Project in Taita Taveta

Wanguru Water Supply project
in Kirinyaga

Figure 85: Pictures - Elevated Steel Tanks

Loisukut WRUA in Laikipia

Ntimaka CFA in Meru

Figure 86: Pictures - Energy saving jikos

Maramtu B Water Project in Tana
River

WASH services for Kakuma town in
Turkana

Figure 87: Pictures - Fencing

Kibunga Gakimiki Water Project in Tharaka Nithi

Mwachiga WRUA in Kwale

Figure 88: Pictures - Gabions

Maramtu B water Project in Tana River

WASH services for Kakuma town in Turkana

Figure 89: Pictures - Ground Pressed Steel Tank

Enhancing Livelihoods in Turkana

TWASEMA project in Turkana

TWASEMA project in Turkana

Figure 90: Pictures - Hand pumps

Enhancing Livelihoods in Turkana

TWASEMA project in Turkana

Figure 91: Pictures - Horticulture shednet drip kit

Diesel Pump in Shebta-aad Water Project in Garissa

Diesel Pump in Shimbrey water project in Garissa

Electric pump in Kinna water project in Isiolo

Electric pump in Naivasha water project in Nakuru County

Electricity mains in Kisumu water extension subproject in Kisumu

Hybrid Pump in Majimboni Muungano Water Project in Kwale

Figure 92: Pictures - Diesel & Electric Pumps

Nyasare Sanitation Batch 2 in Migori

Sake Community Project in Mandera

Figure 93: Pictures - Institutional sanitation

Gura WRUA in Nyeri

Mweru Biakure CFA in Meru

Figure 94: Pictures - Livelihood beehives

Urangi CFA in Embu

Upper hura WRUA in Nyeri

Figure 95: Pictures - Livestock fishponds

Mwachiga WRUA in Kwale

TWASEMA project in Turkana

Figure 96: Pictures - Livestock Troughs

Cheptil water project in Nandi

Kathuku Mlimani Kyuso Water Project in Kitui

Figure 97: Pictures - Masonry Tanks

Hanshak Nyongoro Conservancy in Lamu

Hanshak Nyongoro Conservancy in Lamu

Figure 98: Pictures - Opening of Malkas

WASH services for Kakuma town in Turkana

Bus Park Sanitation Project in Taita Taveta

Figure 99: Pictures - Public Sanitation Projects

Kizingitini Water and Sanitation Project in Lamu

WASH improvement for refugees and host communities Project in Turkana

Figure 100: Pictures - Pump House

Amu WRUA in Lamu

Hanshak Nyongoro Conservancy in Lamu

Figure 101: Pictures - Rain Water Harvesting Djabias/Berkad

Sewer Extension Subproject in Embu

Sewer Extension Subproject in Nyeri

Figure 102: Pictures - Sewer

Enhancing Livelihoods Project in Turkana

Ngalabilabia water and sanitation project in Isiolo

Figure 103: Pictures - Solar Pumping System

Ruguti WRUA in Tharaka Nithi

Saba WRUA in Murang'a

Figure 104: Pictures - Spring Protection

Mbogo WRUA in Nandi

South Maara in Tharaka Nithi

Figure 105: Pictures - Storage Tanks

Naro Moru CFA in Nyeri

Lower Tana Delta Conservancy in Tana River

Figure 106: Pictures - Tree planting

Kathuku Mlimani Kyuso Water Project in Kitui

WASH project Kakuma town in Turkana

Figure 107: Pictures - Water Kiosks

Adadi Jule Water and Sanitation Project in Wajir

Mwachiga WRUA in Kwale

Figure 108: Pictures - Water Pans

ANNEX 5: JAOME 2022 DATA RECAP

FORM	TOTAL	% COMPLETE	% OPERATIONAL	
GENERAL PROJECTS	290	97%	76%	
INVESTMENTS	3068	98%	82%	

YEAR	NO. OF PROJECTS	COMPLETION RATE	% OPERATIONAL	
2018	124	98%	79%	
2019	43	100%	79%	
2020	56	100%	71%	
2021	48	98%	73%	
2022	19	89%	68%	
	290	97%	74%	

INVESTMENT WINDOW	NO. OF PROJECTS	NO. OF INVESTMENTS	% OPERATIONAL	
RBF	7	140	98%	
UIP	73	975	90%	
RIP	134	1476	76%	
WRI	104	477	80%	
	318	3068	86%	

INVESTMENT CATEGORY	NO. OF INVESTMENTS	INVESTMENTS OPERATIONAL	% OPERATIONAL	
WATER SUPPLY	1644	1295	79%	
SANITATION	803	734	91%	
WATER RESOURCES	619	427	76%	
	3066	2456	82%	

PROGRAMMES	OPERATIONAL	REVENUE COLLECTION	AGE-SURVIVAL	GOOD CONDITION	SUSTAINABILITY INDEX
AOD	29%	59%	-	2%	90%
DERP	19%	50%	12%	4%	86%
EDE_CPIRA	21%	25%	13%	7%	65%
EU_SHARE	15%	22%	9%	4%	51%
GGEP	17%	10%	2%	6%	35%
Covid-19_ERP	29%	59%	-	12%	100%
IFAD	17%	24%	10%	5%	57%

PROGRAMMES	OPERATIONAL	REVENUE COLLECTION	AGE-SURVIV-AL	GOOD CONDITION	SUSTAIN-ABILITY INDEX
J6P	20%	17%	12%	6%	54%
OBA	25%	50%	15%	8%	98%
UBSUP	23%	46%	14%	5%	88%
UPC	21%	35%	12%	7%	76%
WLP	22%	18%	-	8%	48%
OVERALL	21%	23%	12%	8%	63%

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