

Sustainable Development Goals (SDG) IWRM Support Programme (SDG-SP)

Tanzania

Stage 2

Joint action plans informing Wami / Ruvu basin in formulating appropriate responses to water resources management challenges.



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WATER



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EXECUTIVE SUMMARY

Background to the Assignment

The management of water resources in Tanzania is guided by the Water Resources Management Act of 2022, which provides guidelines on management, use and protection of all water resources. One of the pillars of the Act is Integrated Water Resources Management (IWRM) of which advocates for water resources to be managed at river basin scale. In Tanzania, seven out of nine basins have managed to prepare the Basin Integrated Water Resources Management Plans (IWRM+D) plans. Preparation for IWRM+D plans for the other two basins are in progress.

Through SDG 6 IWRM Support Programme (SDG 6 SP), countries make an assessment on progress made towards achievement of SDG 6.5 and determine the level of implementation. Initially, countries identify challenges to implementation of IWRM, after which, appropriate IWRM responses are formulated and finally, the programme supports the implementation of the same in order to improve IWRM implementation at a country level.

The assignment reported herein is in line with the initiatives that SDG 6 SP is making towards formulation of appropriate IWRM responses to water resources management challenges in Tanzania. In this regard, the Global Water Partnership Tanzania with overarching regional coordination through GWP South Africa, led the initial process of assessment of level of implementation and identified four major challenges. These are detailed in the Country Survey Instrument for SDG Indicator 6.5.1 for Tanzania (<http://iwrmdataportal.unepdhi.org/>). This formed the backbone of the ToR attached in Annex 1, that was designed to specifically address these key challenges as enumerated and agreed upon through a stakeholder consultative process. One of the strategic decisions that was agreed upon during the stakeholder consultation process in Tanzania was the need to pilot the SDG-SP programme at river basin level as part of aligning with the Water Resources Management Act. The basin that was chosen is the Wami-Ruvu of which is one of the water's stressed basins in Tanzania. In this regard, the SDG-SP in Tanzania was implemented in the Wami-Ruvu basin and hence the interventions that are highlighted herein are designed for basin. The strategic actions that the stakeholders agreed upon to undertake in the basin are as illustrated in Figure 1.

Four strategic actions were identified and structured through a set of four work packages. Specifically, work packages were aimed at formulating strategic actions as part of appropriate



IWRM responses to some of the prevailing challenges in water resources management in Wami-Ruvu Basin.



Figure 1: The SDG-SP Work Packages for Wami-Ruvu Basin

Key Challenges in implementation of IWRM in Tanzania

In 2017 and 2020, Global Water Partnership (GWP) Tanzania supported the Ministry of Water in undertaking a self-assessment to establish the degree of implementation of SDG indicator 6.5.1 in Tanzania. The country Survey results were divided into four major sections, each covering key dimensions of IWRM. These were (i) Enabling Environment (ii) Institutions and Participation (iii) Management instruments and (iv) Financing. According to the survey, major challenges under each of the four components were summarized in Table 1. Overall results indicated that Tanzania fared relatively well with indicator 6.5.1 score of 54 out of 100. The country survey further highlights that the major barriers to IWRM implementation is largely, inadequate financing and capacity of key personnel and institution, in advancing IWRM in Tanzania.

Major outcomes of the survey are summarized in table 1 which shows key aspects and identified challenges for each of the key dimensions of IWRM implementation. Note that, many aspects were assessed but only those which fall in the medium-low to very low categories during the assessment are highlighted in table 1.



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Table 1. Aspects and challenges of implementing IWRM in Tanzania as per the country survey report (Country Survey Instrument for SDG Indicator 6.5.1: Tanzania)

#	ASPECTS	CHALLENGES
1. ENABLING ENVIRONMENT		
a	National IWRM plans, or similar.	Only one basin IWRM plan has officially been approved by Vice President's Office (VPO). The National IWRM plan will integrate all the 9 basin IWRM plans. Thus, the process of developing the National IWRM plan has just started.
b	Basin/aquifer management plans or similar, based on IWRM.	Only one basin IWRM plan has been approved by the VPO Office, and implementation has started.
2. INSTITUTIONS AND PARTICIPATION		
a	Government authorities' capacity for leading implementation of national IWRM plans or similar.	The main challenge has been on implementation as a result of inadequate capacity.
b	Business participation in water resources development, management and use at national level.	Limited communication between government and business community on the management front. Private sector is seldom engaged in management processes. IWRM issues don't interest them.
c	Developing IWRM capacity at the national level.	There have been efforts to develop relevant capacity but the coverage for such efforts is not adequate.
d	Basin/aquifer level organizations for leading implementation of IWRM plans or similar.	The staffing levels and technical capacity is a challenge in most of the basins. Budgetary constraints have been a challenge as well.
e	Public participation in water resources, policy, planning	Degree of participation is as per needs arise.



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	and management at the local level.	There is inadequate coordination between line ministries.
f	Gender-specific objectives and plans at all levels.	There is a gender desk, but challenge has been budgetary constraints.
3. MANAGEMENT INSTRUMENTS		
a	National monitoring of water availability.	There is often delay in relaying information from the basin to national level which causes delays in publishing annual hydrological year books. Inadequate capacity due to budgetary constraints.
b	Sustainable and efficient water use management from the national level.	There are some management instruments that are already in place but with limited coverage.
c	Pollution control.	Challenge has been coverage and budgetary constraints.
d	Management of water-related ecosystems.	River healthy assessment has been carried out, but the coverage has been minimal.
e	Management instruments to reduce impacts of water-related disasters.	Flood & Drought monitoring programmes have started as pilots in two river basins. Response to these disasters is always slow due to lack of co-ordinations among key players in disaster response as well as unavailability of relevant information on time.
f	Basin management instruments.	There are instruments but coverage is limited.
g	Aquifer management instruments.	There are limited aquifer management systems. The challenge has been coverage and financial resources to develop the plans.
h	Data and information sharing within countries at all levels.	Data and information sharing mechanisms exists but is currently not fully implemented.



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4. FINANCING		
a	National budget for investment including water resources infrastructure.	Budgets are always prepared but the challenge has always been disbursement.
b	National budget for the recurrent costs of the IWRM elements.	Annual allocations over the years have been low in the range of 35%.
c	Sub-national or basin budgets for investment including water resources infrastructure.	Budgets for River Basin Authorities are factored in the national budgets but the disbursement to the river basins has been low.
d	Revenues raised from dedicated levies on water users at basin, aquifer, or sub-national levels.	Water Boards has the mandate to raise revenues through allocation of water. The revenues raised are normally not enough.

Proposed interventions to the major barriers to IWRM implementation in Wami-Ruvu Basin

The interventions that were agreed upon were structured as Work Packages that were geared towards improving the implementation of IWRM in Wami-Ruvu basin. The subsequent section provides a summary of the outcome of the Work Packages of which were delivered as consultancy assignments. The detailed information and findings about the work packages are highlighted in chapters i.e., chapter 2 to chapter 5.

Addressing inadequate Financing

This was addressed through **work package one** i.e., *WKP 1: Development of a Resource Mobilization Strategy for achieving SDG6.5.1 at Wami-Ruvu basin*. In this, the consultant suggested an action plan with two major goals. One being ways to strengthen basin Financial Enabling environment through improved Stakeholders Involvement and the other being strategies to Mobilizing additional local and international financial resources in the Wami-Ruvu Basin. Each of these goals had a number of proposed action plans to achieve them (see table 2).

Addressing inadequate institutional capacity and skills gap

Work-package two on development of Capacity Building Strategy for achieving SDG 6.5.1 in the Wami-Ruvu Basin was geared towards addressing the identified shortcoming as narrated in Chapter 3. The proposed strategy has two major goals. Goal 1 intends to device means of



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strengthening the capacity to collect, store, process, and disseminate Hydro-Meteorological data (quantity and quality), while Goal 2 is to increase stakeholder awareness of their participatory roles and responsibilities in the basin.

Addressing knowledge management issues

This work-package was meant to develop a Knowledge Management (KM) and Exchange strategy for achieving SDG6.5.1 in the Wami-Ruvu basin as indicated in Chapter 4. The strategic action plan as highlighted in chapter 4 and summarized in table 2 indicated a number of interventions at Wami-Ruvu basin including packaging knowledge products, improved capacity to undertake KM functions, strengthened collaborations among stakeholders, and increased resources for KM.

Addressing monitoring and evaluation performance indicators for tracking IWRM implementation progress in the basin

This Work-package (Chapter 5) dwelt on developing a Monitoring and Evaluation Strategy for achieving SDG6.5.1 in the Wami-Ruvu basin.

Table 2: strategic objectives/ actions identified in each of the 4 strategic key areas

RESOURCES MOBILIZATION STRATEGY	
STRATEGIC OBJECTIVE	ACTIONS
Reformation of basin water investment legal framework (laws, policies and regulations) & governance structures to be more supportive of private sectors involvement.	<ul style="list-style-type: none"> Review how the existing Legal Framework affects Private Sector Involvement in financing. Initiate open dialogue between the public and private sectors in basin on shortcomings of the existing legal and regulatory framework. Design new water investment Legal Framework that considers observations from the review and stakeholders' engagement. Improve basin office financial governance by making them creditworthy or increase their creditworthiness and efficiency in capital planning/ reducing unit costs Develop capacities for financial planning, financial management, financial control,



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	<p>and evaluation of non-conventional technical projects.</p>
<p>Integrate water financing considerations across all water related sectors</p>	<ul style="list-style-type: none"> • Identify different sectors that benefit from or affect the sustainability management of the water resources in the basin. • Review existing strategies, policies and plans of the identified sectors on their flexibility and limitations for cross-sector coordination & planning with the Ministry of Water and Wami-Ruvu Basin Office. • Identify appropriate instruments for mobilizing financial resources from the identified sectors so as to finance expenditures for sustainable water management in the Wami-Ruvu basin. • Conduct a collaborative assessment of multi-purpose infrastructure costs, risks and returns/benefits to different sectors which will form the basis for allocation of the same. • Develop capacities for planning across the sectors relating to the basin water resource.
<p>Increase revenues internally generated in the basin</p>	<ul style="list-style-type: none"> • Introduce cost recovery targets across other sectors. • Review water tariff structures to reflect realistic economic value of water. • Introduce/Strengthen economic policy instruments for water management (such as water abstraction or water pollution charges).
<p>Increase allocations of public budgetary resources to Wami-Ruvu Basin IWRM activities.</p>	<ul style="list-style-type: none"> • Assess the economic value of Wami-Ruvu waters contribution to GDP, and use it as a basis for requesting for higher public funding allocation



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	<ul style="list-style-type: none"> • Device means of incorporating public expenditures managed in water-related sectors (e.g., energy, agriculture, environment, urban development) into the basin water resources management activities. • Carry out governance and policy reforms to facilitate evidence-based allocation of financial resources for supporting Water Governance activities • Develop basin capacities for execution and management of allocated financial resources.
<p>Mobilize additional resources from domestic private actors</p>	<ul style="list-style-type: none"> • Identify potential basin private sector actors/ investors • Initiate open dialogue between the private and public sector actors in the basin to explore potential partnerships or financial relationships and transactions. • Open dialogues with potential private investors in the water sector to identify the main barriers that prevent their involvement in basin investment initiatives (either by issuing loans, buying bonds, taking equity investments, or other mechanisms) • Raise awareness among potential investors about the opportunities and responsibilities to invest in basin water governance. • Develop capacities for showcasing investment opportunities and for entering into a dialogue with potential investors.
<p>Increase the amount of financial resources mobilized from international partners.</p>	<ul style="list-style-type: none"> • Identify new potential financial partners from the global water financing portfolio



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	<p>that are likely to align with the interest of the basin.</p> <ul style="list-style-type: none"> • Initiate a forum for promoting dialogue between the basin management and existing and new international financial partners to improve alignment of their support with basin objectives. • Develop good quality proposals for water-related projects to mobilize climate financing • Use government and donor funds better to catalyse commercial finance via blending (i.e., blending of Government finance or Donor Concessional finance with domestic commercial finance) • Develop capacities for project preparation and for accessing blending finance which adequately allocate risks and returns across financiers, building on good international practices
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CAPACITY BUILDING STRATEGY

<p>Strengthen the capacity to collect, store, process, and disseminate hydro-meteorological data (quantity and quality)</p>	<ul style="list-style-type: none"> • Develop Standard, Specification, and Guidelines for acquiring and installation of monitoring system • Enhance water resources assessment capabilities and measurement networks; • Strengthen the water resources assessment and monitoring system, including establishing the baseline situation; • Establish water resources databases and develop mechanisms for acquiring water use and water demand information from water users; • Device an efficient system for information storing, processing, management and sharing;
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	<ul style="list-style-type: none"> • Train Technicians to operate, organize and maintain the system appropriately; • Promote the use of data for water resource management decision-making; and • Define broad goals and long, medium and short-term objectives for the basin.
<p>Increase stakeholder awareness of their participatory roles and responsibilities</p>	<ul style="list-style-type: none"> • Prepare and operationalize proper guidelines on the engagement of stakeholders • Increase number of stakeholders meeting/seminar • Establishment of more WUAs and catchment/sub-catchment committees • MoU between Wami-Ruvu basin and key stakeholders to ensure sustainable implementation of agreed plans • Public awareness on the importance of water resources management • Strengthen coordination among government agencies and other stakeholders involved in management of water resources
<p>Skills development and career advancement (capacity enhancement)</p>	<ul style="list-style-type: none"> • Undertake needs capacity enhancement • Training senior experts on new technologies and skills for governing water resources
<p>Staff exchange and mentoring for capacity enhancement</p>	<ul style="list-style-type: none"> • Establish appropriate mechanisms for staff exchange program and equipment between basin water boards • Create favourable working environment to attract skilled staff from other organizations • Promote mentorship for junior staff
<p>KNOWLEDGE MANAGEMENT STRATEGY</p>	
<p>Enhancing technical capacity for knowledge management</p>	<ul style="list-style-type: none"> • Develop Action Plan on KM at each level and capture innovation and learning as it happens in the field by project activities



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	<ul style="list-style-type: none"> • Harvest stories for dissemination by translating raw data into meaningful Knowledge products • Share relevant information and knowledge on lessons, results and impact. • Assist the respective river basin or IWRM institution on media related issues such as media engagement of journalists etc. • Collecting relevant data that is useful for the team as knowledge • Developing an overall framework that guides knowledge management. • Actively promoting the knowledge agenda within and beyond the team • Overseeing the development of the knowledge infrastructure • Facilitating connections, coordination and communications
<p>Enhancing financial capacity for knowledge management</p>	<ul style="list-style-type: none"> • Setting up a budget for knowledge management at the start of each financial year • Mapping of potential stakeholders for resources mobilization • Building institutional and human capacity to mobilize financial mobilization
<p>Strategies to enhance stakeholders' engagement</p>	<ul style="list-style-type: none"> • Development of communication strategy focusing on outreach and development of strategic messages
<p>Enhancing knowledge sharing culture</p>	<ul style="list-style-type: none"> • Organizing knowledge exchange interventions such as Knowledge sharing events and exchange tours. • Basin Multi Stakeholder Forums could plan for exchange tours to enable basin-to-basin or peer-to-peer learning



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Promoting After Action Review (AAR)

- Setting out a clear approach to monitoring, evaluation, learning and reporting of implemented knowledge management initiatives

MONITORING AND EVALUATION

Proposed Actions

- Development of standardized M&E training materials
- Development of skilled M&E trainers through a train-the-trainer (tot) program
- Development of a multi-year training plan to facilitate structured and sequenced M&E training
- Implement training using the capacity-building modalities



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ABBREVIATION AND ACRONYMS

ACRONYM/ABBREVIATION	DEFINITION
BWB	Basin Water Board
CWC	Catchment and WUA Coordination
CWCs	Catchment Water Committees
DC	District Council
FY	Financial Year
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IWRMDP	Integrated Water Resources Management and Development Plan
IWRM	Integrated Water Resources Management
MSP	Midterm Strategic Plan
WRBWB	Wami-Ruvu Basin Water Board
WRM	water resources management
WSDP	Water Sector Development Program
WRPRP	Water Resource Planning, Research and Project Coordination Section
WRAM	Water Resources Assessment and Monitoring Section
PMU	Procurement and Management Unit



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NLUPC	National Land Use Planning Commission
VLUM	Village Land Use Management
GWP	Global Water Partnership
SP	Support Programme
IWRM	Integrated Water Resources Management
CWPs	Country Water Partnerships
CB	Capacity Building
RM	Resource Mobilization
KM	Knowledge Management
WKP	Work Package
M&E	Monitoring and Evaluation

CHAPTER 1.

INTRODUCTION

1.1 BACKGROUND OF SDG SP PROJECT IN TANZANIA

In 2015 UN member states adopted 17 Sustainable Development Goals (SDG's) for the 2030 agenda for sustainable development. These goals aim to mobilize efforts to end all forms of poverty, fight inequality and tackle climate change universally ensuring that no one is left behind. Addressing these SDGs has to be done in connection and not addressed as separate elements. Particularly, among the 17 SDG's SDG 6 is on clean water and sanitation for all having 9 indicators which includes SDG 6.5.1 integrated water resources management (IWRM) whose UNEP is custodian responsible for monitoring implementation status.

SDG 6 IWRM Support Programme

Assists governments and other stakeholders in



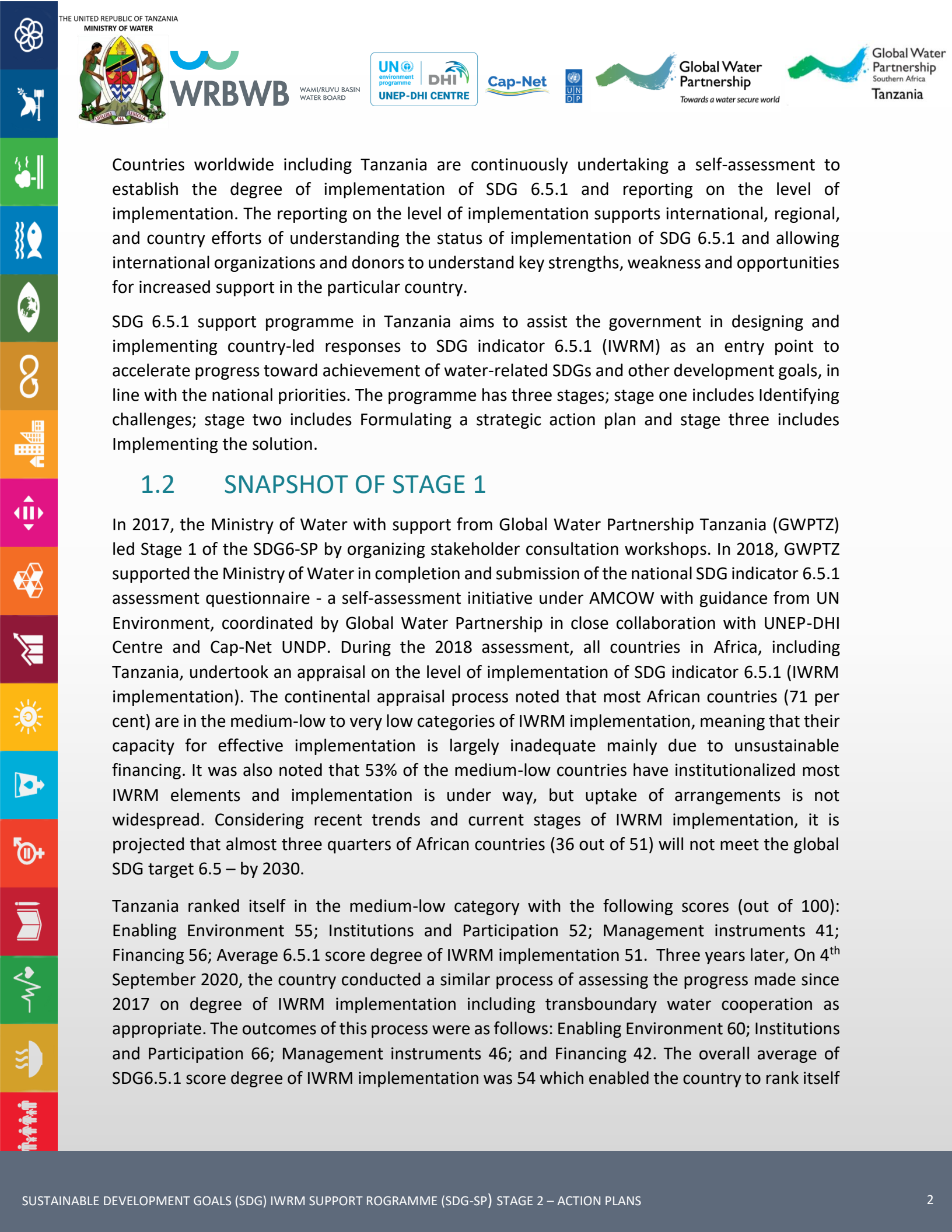
Bring together stakeholders
to understand the status of water resources management in the country



Define areas of opportunity
to turn them into country-led investment projects that improve water resources management



Implement Priority Actions
to ensure measurable progress on SDG 6.5.1 and other SDG targets, feeding back into the reporting process (stage 1)



Countries worldwide including Tanzania are continuously undertaking a self-assessment to establish the degree of implementation of SDG 6.5.1 and reporting on the level of implementation. The reporting on the level of implementation supports international, regional, and country efforts of understanding the status of implementation of SDG 6.5.1 and allowing international organizations and donors to understand key strengths, weakness and opportunities for increased support in the particular country.

SDG 6.5.1 support programme in Tanzania aims to assist the government in designing and implementing country-led responses to SDG indicator 6.5.1 (IWRM) as an entry point to accelerate progress toward achievement of water-related SDGs and other development goals, in line with the national priorities. The programme has three stages; stage one includes Identifying challenges; stage two includes Formulating a strategic action plan and stage three includes Implementing the solution.

1.2 SNAPSHOT OF STAGE 1

In 2017, the Ministry of Water with support from Global Water Partnership Tanzania (GWPTZ) led Stage 1 of the SDG6-SP by organizing stakeholder consultation workshops. In 2018, GWPTZ supported the Ministry of Water in completion and submission of the national SDG indicator 6.5.1 assessment questionnaire - a self-assessment initiative under AMCOW with guidance from UN Environment, coordinated by Global Water Partnership in close collaboration with UNEP-DHI Centre and Cap-Net UNDP. During the 2018 assessment, all countries in Africa, including Tanzania, undertook an appraisal on the level of implementation of SDG indicator 6.5.1 (IWRM implementation). The continental appraisal process noted that most African countries (71 per cent) are in the medium-low to very low categories of IWRM implementation, meaning that their capacity for effective implementation is largely inadequate mainly due to unsustainable financing. It was also noted that 53% of the medium-low countries have institutionalized most IWRM elements and implementation is under way, but uptake of arrangements is not widespread. Considering recent trends and current stages of IWRM implementation, it is projected that almost three quarters of African countries (36 out of 51) will not meet the global SDG target 6.5 – by 2030.

Tanzania ranked itself in the medium-low category with the following scores (out of 100): Enabling Environment 55; Institutions and Participation 52; Management instruments 41; Financing 56; Average 6.5.1 score degree of IWRM implementation 51. Three years later, On 4th September 2020, the country conducted a similar process of assessing the progress made since 2017 on degree of IWRM implementation including transboundary water cooperation as appropriate. The outcomes of this process were as follows: Enabling Environment 60; Institutions and Participation 66; Management instruments 46; and Financing 42. The overall average of SDG6.5.1 score degree of IWRM implementation was 54 which enabled the country to rank itself



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in the Medium-High category. Also, the workshop outcome highlighted the areas of strength and those which need improvement in the context of IWRM implementation.

Table 1.2.1 below shows the assessment scores for Tanzania- for 2017 and 2020. It is evident that there has been progress in all categories save for financing where retardation was observed; from 46 in 2017 to 42 in 2020.

Table 1.2.1: Degree of implementation of IWRM in Tanzania (2017 & 2020)

Category	Scores for 2017	Scores for 2020
Enabling Environment	55	60
Institutions and Participation	52	66
Management instruments	41	46
Financing	46	42
Average Score	50	54

1.3 IMPLEMENTATION OF STAGE 2

1.3.1. IDENTIFYING KEY PRIORITY AREAS FOR ACTION PLANS

During the consultation workshops, in 2017, 2018 and 2020, stakeholders highlighted several areas in water resources management that needed urgent attention. Thus, the SDG 6.5.1 assessment provided perfect framework for taking a stock on key areas of IWRM that the SDG SP programme could contribute to. Some of the issues that were raised during the 2017 stakeholder assessment process include:

- i) The need for continued monitoring of the implementation and progress of SDG6.5.1 (IWRM).
- ii) There is a need for aligning the SDG6 targets and indicators with the national Water Sector Development Programme (WSDP II) framework so as to establish a comprehensive complementary reporting mechanism for both.
- iii) The need for harmonizing reporting procedures and tools for SDG6. At the moment, there are more than 6 institutions that are leading various indicators in SDG 6 and all have different approaches and philosophical settings in their reporting procedures. In this case, there is a need to have an integrated approach in monitoring of SDG6 in Tanzania.
- iv) The overall capacity at both national and river basin level required to achieve SDG6 (in particular 6.5.1) needs to be established.



- v) The overall contribution of SDG6 in the development and growth of the country needs to be established. There is a need to quantify the contribution of SDG6 (or water sector) in the overall economy (GDP) of the country.

During the 2020 IWRM assessment that was held in Dodoma, several issues were raised, and the way forward is as summarized by the three key messages below:

- i) There is a need to develop and strengthen capacity for implementation of IWRM plans at national and basin level. This includes technical, financial, and managerial capacities.
- ii) The outcome of the 2020 IWRM assessment indicated a decline in financing IWRM activities in Tanzania. In this case, financing mechanisms to support IWRM activities need to be diversified to include different streams through partnering with other stakeholders e.g private sector. Thus, there is a need to develop a resource mobilization strategy for supporting IWRM implementation.
- iii) Monitoring and evaluation of IWRM need to be instituted as part of water resources management.

Additionally, during the 2020 IWRM assessment in Dodoma, GWP Tanzania had brief consultations with stakeholders in water resources management to identify priority areas to support IWRM implementation in the country with focus to achieving SDG6.5.1 by 2030. Some of the priority areas that were identified are:

1. There is a need for developing a resource mobilization strategy for supporting IWRM implementation at river basin level. This has been necessitated as a result of the need to diversify funding streams at river basin level to support implementation of IWRM plans. There is a huge potential for resource mobilization at river basin scale but there is a need to develop a strategy, with clear activities, partners to be involved while highlighting related costs.
2. There is a need to develop a capacity building strategy (human, technical and managerial) at basin scale for supporting IWRM implementation. The capacity required to implement IWRM need to be established and the related costs highlighted.
3. The capacity to manage knowledge and learning in implementation of IWRM need to develop. In this case, there is a need to develop a knowledge management and learning strategy that will enhance convergence in realization of IWRM at both national and river basin levels.
4. Monitoring and evaluation of IWRM implementation need to be instituted. In this case, there is a need to develop a M&E plan highlighting the indicators to be used



The priority areas mentioned above are distillates of views from stakeholders that were captured during the SDG6.5.1 assessment process – both in 2017 and 2020. In this regard, SDG6.5.1 assessment process was used as a launching pad for developing the stage 2 SDG6 -SP concept note for Tanzania.

1.3.2. DESIGN AND IMPLEMENTATION OF STAGE 2

The main focus of SDG6 Supporting Program Stage 2 was to identify concrete actions to be carried out to enable the advancement of IWRM implementation in Tanzania. Also, these actions are set to be aligned with the national priorities and plans especially the subsequent phase of Water Sector Development Programme as well as other water-related SDGs. In this regard, the actions are targeted to addressing the four priority areas that have been identified. To achieve this, different approaches were used in implementing the SDG6 SP in Tanzania.

Firstly, a situation analysis was to be conducted in each of the four priority areas in order to highlight the inherent challenges and opportunities. This was to be more of a desktop review process that was to be undertaken in close collaboration with the Ministry of Water. Conducting situation analysis was to help define the nature and scope of a challenge, identify current plans and activities in place as well as helping to understand the opinions and experiences of stakeholders in the of implementation of IWRM (SDG6.5.1).

A multi-stakeholder’s workshop was to be convened as a platform to interrogate the situation analysis reports where key recommendations on focal activities, under each priority area, was to be highlighted. The multi-stakeholder’s workshop and consultations was expected to agree on concrete set of actions for achieving SDG 6 target 6.5 IWRM implementation. Stakeholders that were to be invited include various government sectors, development partners, institutions of higher learning, community water user’s associations, utilities, NGOs, financial institutions, private sectors and media. Thereafter, consultants were to be commissioned to develop the various strategic plans for actions for each priority area. The strategic plans were then be subjected to a multi-stakeholder validation workshop where the consultants were to present their plans for input and further contribution from various stakeholders.

The first stakeholders’ workshop was convened on 30th September 2021 where stakeholders shared their inputs on the situation analysis reports. Consultants presented their work and received reviews and inputs from the stakeholders. Moreover, group discussion session was also conducted whereas the consultants were able to interact with stakeholders for further data and information gathering into their specific work packages.

Based on the situation analysis reports, the stakeholders made a unanimous determination that the four work packages should be implemented in one of the nine water basins of Tanzania as a pilot case study. The basin was to be chosen based on a criteria that the GWPTZ team in consultation with Ministry of Water and the consultants were to agree upon. The consultants



were to then prepare their respective strategic action plans for the pilot basin with the view to scale out a similar initiative to the other remaining 8 basins. Wami-Ruvu basin (see Section 4) was finally chosen as the pilot case study and hence all the work packages were to be implemented in the basin. The consultants visited the Wami-Ruvu basin office in Morogoro for data collection and further inputs on their respective work packages before drafting the strategic action plans and submitting to GWPTZ. The draft strategic action plans were reviewed by an external reviewer, as well as GWPO, and the consultants addressed the reviewer comments. The draft strategic action plans were shared with stakeholders before the final stakeholders' validation workshop.

The stakeholders' validation workshop was conducted on 20th December 2021 bringing together stakeholders across the water sector including the Ministry of Water, technical teams from water basins, development partners, academic institutions etc. The goal of the workshop was to provide an understanding of SDG SP to stakeholders as well as a validation platform for the strategic action plans. During the workshop, the consultants had an opportunity to present the strategic action plans to the stakeholders and received valuable inputs for improving their reports.

Each strategic plan of action, was, among, others, to highlight the stepwise approach for addressing respective priority area, the partners, costs etc. for realizing the plans.

The above process presented in form of chapters is as highlighted below:

- Chapter 2: Resources mobilization plan to support IWRM Implementation in Wami-Ruvu Basin
- Chapter 3: Capacity building plan for achieving SDG6.5.1 in Wami-Ruvu Basin
- Chapter 4: Knowledge management and exchange plan on IWRM
- Chapter 5: Monitoring and evaluation plan on IWRM

1.4 DESCRIPTION OF THE WAMI-RUVU BASIN

Wami-Ruvu Basin (Figure 1.4.1) is one of the nine River and Lake Basins of Tanzania. The Basin board was established in July 2002 under Water Act No. 42 of 1974 of Water Utilization (Control and Regulations) with its amendments No. 10 of 1981. But the former Act has been repealed with recently Water Resources Management Act No. 11 of 2009. The Basin covers seven regions with 26 districts which includes Morogoro (Mvomero, Kilosa, Morogoro Municipal, Morogoro District, and Gairo), Dodoma (Chamwino, Dodoma Municipal, Mpwapwa, Kongwa, Bahi, Chemba and Kondo), Manyara (Kiteto), Dar es Salaam (Temeke, Ilala, Kinondoni, Kigamboni and Ubungo), Coastal (Bagamoyo, Kibaha District, Kibaha Town, Kisarawe, Chalinze and Mkuranga) and Tanga (Kilindi and Handeni).

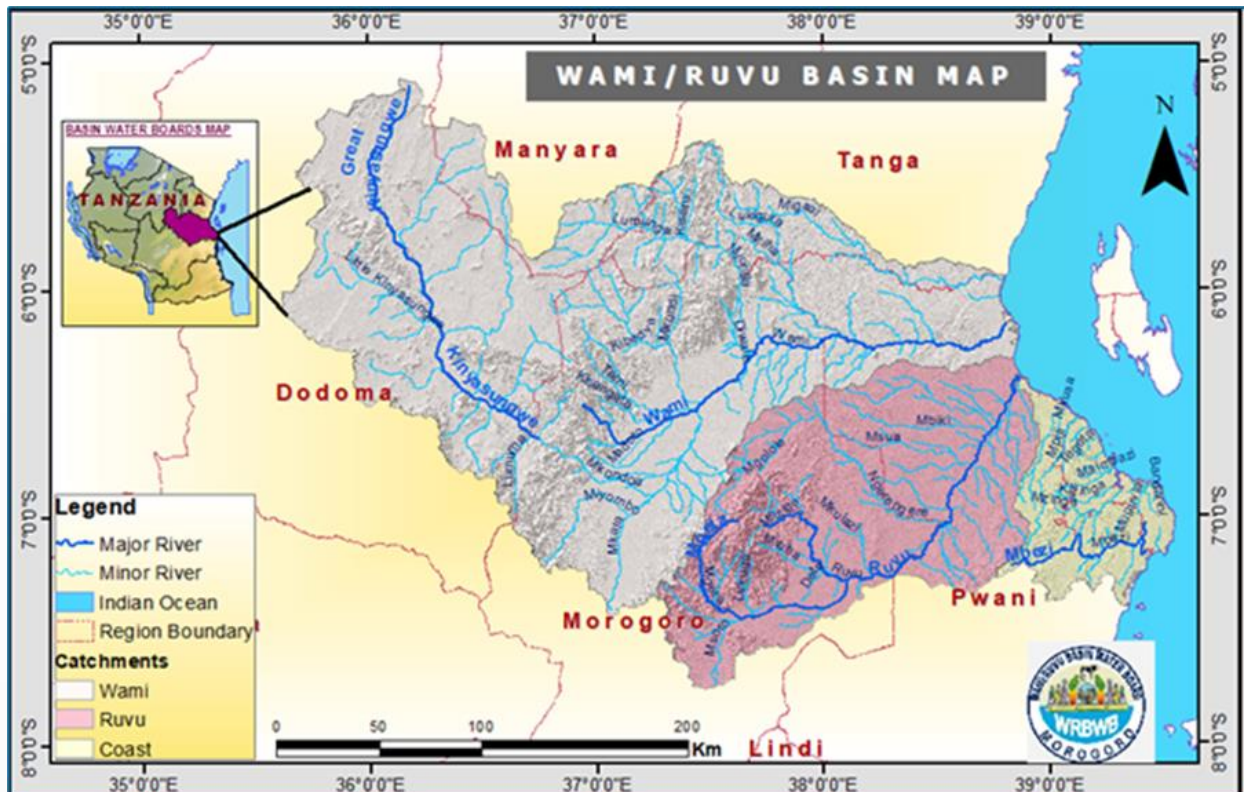


Figure 1.4.1: Location of Wami-Ruvu basin

The Wami-Ruvu river basin is one of the most important river systems in Tanzania, overlapping with areas of critical ecological significance (high level of biodiversity) and economic activities with national importance. The largest city of Tanzania, Dar-es-Salaam, with a population currently estimated at 7,046,892, the capital city, Dodoma and a number of smaller towns (Morogoro, Kibaha and Bagamoyo), all fall in the catchment area of the Wami and Ruvu rivers to meet domestic, industrial, and irrigation needs. The total area of the basin is about 66,820 km² which is about 7.5% of Tanzania mainland. A large climatic diversity exists within the basins, from the humid plains along the Indian Ocean coastline, to the Eastern Arcs Mountains with high rainfall, and arid areas around Dodoma further west, that lie in the rain shadow of the mountains. A wide range of livelihoods exist in the Wami and Ruvu basins encompassing rain-fed and irrigated agriculture, livestock, forest produce and leading industries of Tanzania. Such a diversity of water availability and increasing demands present within the basin poses an ever-widening challenge of sustainable water resources management.

There are several factors contributing to vulnerability of water resources in the Wami-Ruvu Basin. Such factors include increasing water demand in all sectors from a growing population, industrial growth, increase in irrigated agriculture, increasing per-capita consumption of goods and services that utilize water. Water use demands are high with domestic use and irrigation cover 91% of



total water demand in the basin.¹ Another factor is the increasing pollution of water from soil erosion, sewage, industries, agrochemicals, and plastic garbage. Decreasing landscape capacity to regulate water quality and availability and climate change are also other factors which contribute to the vulnerability of water resources in the Wami-Ruvu basin. The basin is implementing several activities in order to safeguard water resources and adapting to the impact of climate change. Activities include preparation of Land Use Plans in Kinyasungwe and Wami Catchment, planting of trees along buffer zone of water sources. The basin also implements and enforces environmental flows recommendations along Ruvu River enforce Water Resources Management Act (WRMA) and other related laws and regulations, inspect discharge permits and resolve water user conflicts.

1.4.1. PHYSICAL FEATURES

The basin covers the catchment areas of Wami and Ruvu River Systems and Coastal Rivers within Dar es Salaam that drain into the Indian Ocean. The total area of the basin is about 66,820 km². The Wami system encompasses about 43,946 km² the Ruvu system is 18,078 km², and other Coastal Rivers make up about 4,796 km² as indicated in Figure 1.4.2.

The basin consists of wide plains interspersed by four distinct mountain ranges (400 - 2500 meters above sea level). The plains include the Lower Ruvu plains and the Mgeta plains in the Ruvu system and the Mkata-Wami (400 – 800m), Lower Wami (200 -400m) and the Berega valley (800 -1200 m) in the Wami system.

1.4.2. CLIMATE

The eastern slopes of the Uluguru Mountains have a mean annual rainfall of 2500mm while the western part of the Uluguru Mountains receives less. The Nguru-Rubeho mountain complex receives between 800mm -1200mm per annum and the Ukaguru Mountains and plains receive between 1000mm -1800mm per annum. While the coastal plains receive about 800mm-1000mm per annum, the amount of rainfall generally decreases as you go inland towards Dodoma and north of Wami sub-basin where the average is usually only 500-600mm per year. Average monthly minimum and maximum temperatures are almost the same throughout the basin. The coldest month is August (about 18°C) and the hottest month is February (about 32°C). The annual average temperature is about 26°C.

¹ WAMI-RUVU BASIN WATER BOARD AWP 2021-2022

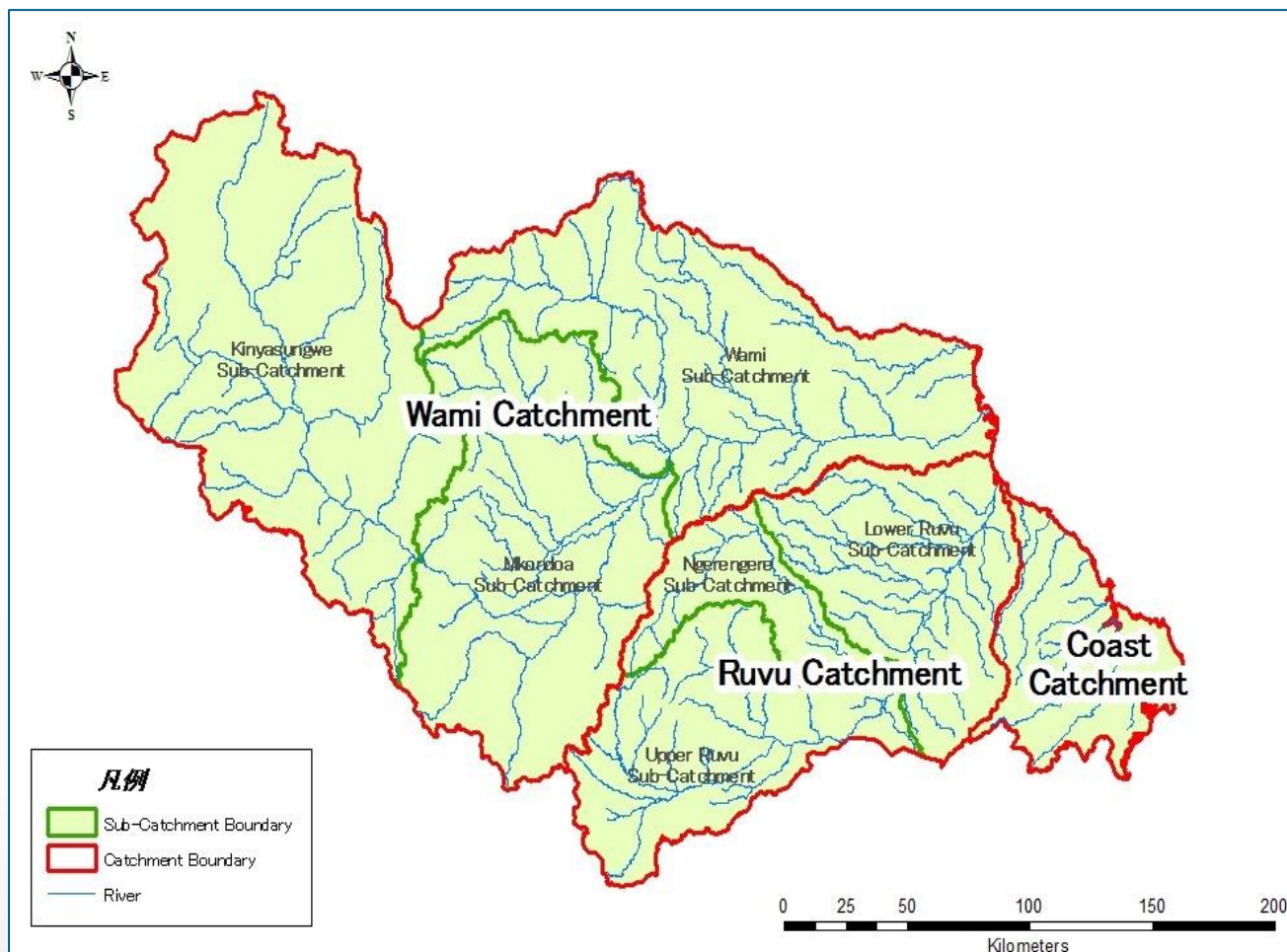


Figure 1.4.2: Hydrological Map of the Wami-Ruvu Basin Water Board.

SOURCE: Wami-Ruvu basin



CHAPTER 2.

RESOURCE MOBILIZATION STRATEGY TO SUPPORT IMPLEMENTATION OF IWRM IN WAMI-RUVU BASIN

The Wami-Ruvu Strategic Financial Resource Mobilization Strategy proposed in this document, is geared towards providing new avenues for mobilizing resources over and above the already assured state budgetary allocations. This Chapter provides the base for further discussions and dialogues around specific actions necessary for attaining financial sustainability in the basin. The proposed strategic objectives are specifically aimed at providing guidance in support of implementation of the IWRMD plan for Wami-Ruvu Basin.

2.1 BACKGROUND

This resources mobilization strategic action plan for resource mobilization at the Wami Ruvu Basin, and by extension other river basins in Tanzania, focused on the critical issues with respect to addressing, roles and functions of Basin Water Board as mandated through the Water Resources Management Act. The goal for this chapter was to enhance the basins' awareness and knowledge on resources mobilization for Water Resources Management River basins by 2030. This was achieved by identification of strategies with corresponding targets deliverables, activities, and outcome indicators over the specified period of time. This Strategic Plan ensured that the overriding objectives of the Wami-Ruvu Water Board are spelt out clearly and the necessary accountability is created to achieve the desired improvement in service delivery to customers and stakeholders.



2.2 METHODOLOGY

A situation analysis was conducted to highlight the inherent challenges and opportunities. This was more of a desktop review process that was undertaken in close collaboration with the Ministry of Water. Conducting situation analysis helps to define the nature and scope of a challenge, identify current plans and activities in place as well as helping to understand the opinions and experiences of stakeholders towards achieving SDG 6.5.1.

A multi-stakeholder workshop was then convened as a platform to for further engaging stakeholders as well as sharing initial outcome of the review process. Through stakeholder meeting which took place on 30th September 2021, relevant information was gathered. A sample questionnaire that was used in this assignment is attached in Annex 6.1. Figure 2.2.1 and 2.2.2 shows the process that was undertaken in delivering this assignment.

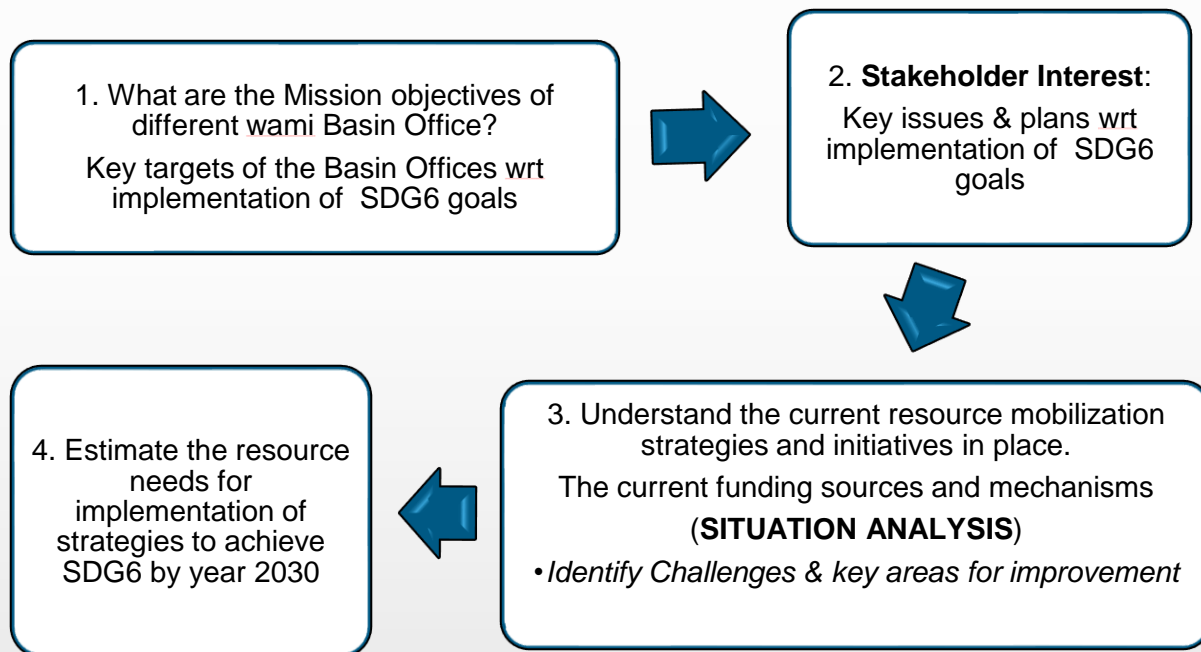


Figure 2.2.1: Methodology to carry out a situation analysis on the capacity for implementation of IWRM at basin level

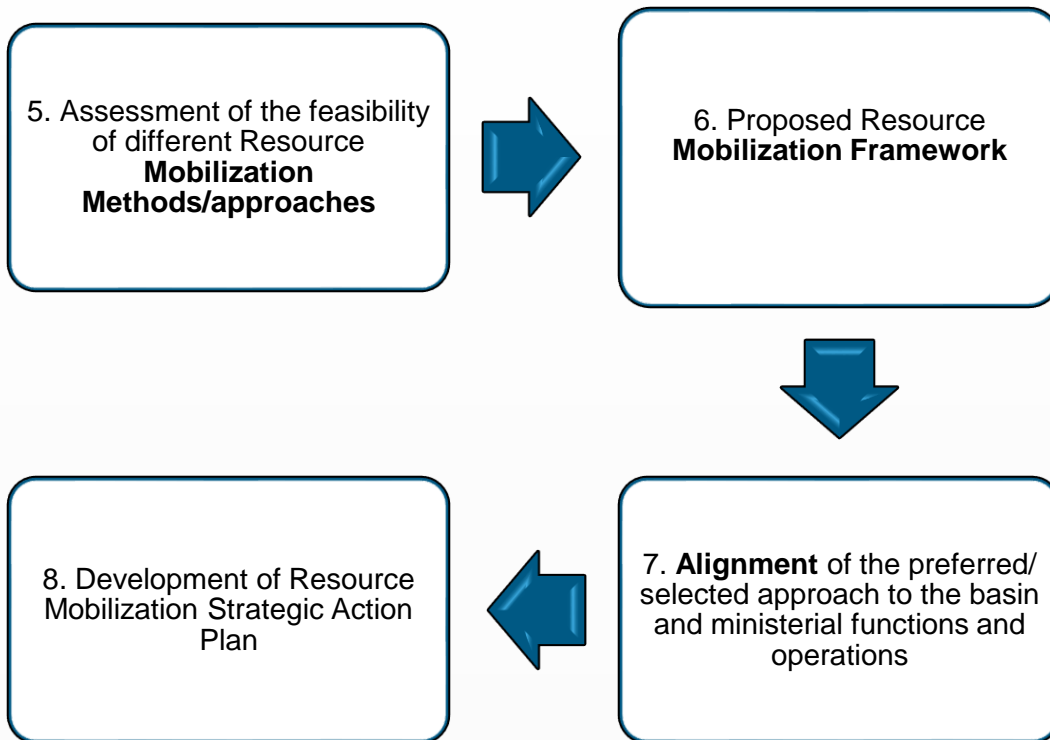


Figure 2.2.2 Methodological approach to developing a resources mobilization strategic action plan for achieving SDG 6.5.1 in Wami-Ruvu Basin

2.3 MINISTRY WRT SDG IN TANZANIA

2.3.1. INSTITUTIONAL FRAMEWORK OF WATER RESOURCE MANAGEMENT

The main role of the Ministry responsible for Water in Tanzania is co-ordination, policy and guideline formulation, and regulation. New institutions have been created comprising of the National Water Board, Basin Water Boards, Catchment Water Committees, and Water User Associations and District Facilitation Teams. Figure 2.3.1 shows the governance structure of the Wami-Ruvu Basin Water Board.

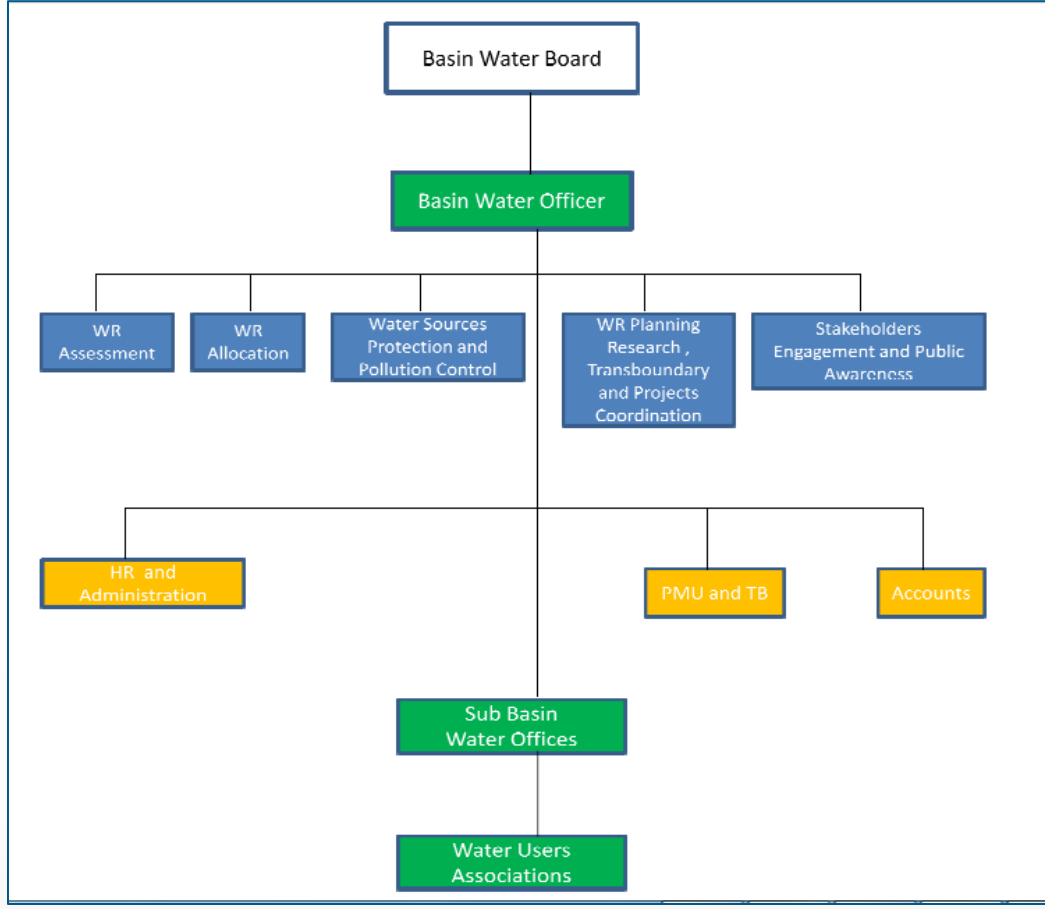


Figure 2.3.1: Wami-Ruvu Basin Water Board's Organizational Structure

The National Water Policy 2002, the Water Sector Development Strategy 2006-2015, and the Water Resources Management Act (WRMA) of 2009, provide guidance and framework for Water Resources Management in the country. These water sector policies are derived and based on national and international policies on poverty and sustainability with main reference to the Tanzania Vision 2025, Five Year Development Plan, the Sustainable Development Goals 2030 and Integrated Water Resources Management Principles.

The Basin Water Boards have been established under subsection 1 of the WRMA and shall be a body corporate with perpetual succession and a common seal and shall have power in its corporate name to sue and be sued. The major roles of the Basin are as stipulated in section 23 of the WRMA of 2009 which may be summarized as water resources assessment, allocation and water sources protection and pollution control



2.4 STRATEGIES/ POLICIES AND PLANS FRAMEWORK OF RESOURCES MOBILIZATION

The National Water Policy (NAWAPO) 2002 is in line with the IWRM Principles and it advocates devolution of responsibility for water resources to River/Lake Basins and catchments management entities with active participation of local government and community-based organizations.

2.5 LEGAL FRAMEWORK

The principal legislation governing water resources is the Water Resources Management Act No.11 of 2009 (WRMA) that provides for implementation of the National Water Policy of 2002. The legislation devolves water resources management to basin level entities. The main objective of managing water resources at the Basin level is to scientifically assess the water resource, so that it can be equitably allocated and efficiently utilized for various social-economic purposes and ensure sustainability of the water resources for present and future generations.

2.6 MANDATE OF THE RIVER BASINS BOARDS

The powers and functions of the Basin Water Boards (BWBs) are outlined in the Water Resources Management Act No. 11 of 2009. BWBs are regulatory bodies by law, their core functions are to collect hydro-meteorological data, issue and enforce water use and waste discharge permits, protect water sources and support planning and management of water resources, granting, monitoring, and enforcing water use permits (Table 2.6.1).

Table 2.6.1: Functions and responsibilities of basin water boards (Source: National Water Sector Development Strategy, 2006).

Function	Responsibility
Monitoring	Collect, process, and analyze data for water resource monitoring and assessment
Planning	<ul style="list-style-type: none"> i. Coordinate and approve basin water resource management planning/budgets ii. Cooperate between sectors at the local level iii. Coordinate stakeholders iv. Integrate district plans into water resource management plans v. Coordinate technical aspects of trans-boundary issues in the basin



Licensing and enforcement	<ul style="list-style-type: none"> i. Approve and revoke water-use and discharge permits ii. Enforce water-use permits and pollution control measures iii. Resolve conflicts between water users
---------------------------	---

2.7 IDENTIFICATION OF PLANNED BASIN GOALS AND KEY TARGETS

2.7.1. WAMI BASIN KEY TARGETS AS PER THE WATER SECTOR DEVELOPMENT PROGRAMME (WSDP)

The Government of the United Republic of Tanzania is presently implementing the WSDP 2006-2025. The WSDP follows the Sector Wide Approach to planning (SWAp) that allows simultaneously implementation of the strategy in the Local Government, Basin Water Boards and Water Supply and Sanitation Authorities. Due to the long nature of the plan, 20 years, the programme is rolled out in three major phases but implemented on a component basis. *Phase I* which was implemented from 2007-to 2014, and the second phase from 2015-2021, and now in last phase 2021-2025.

The introduction of the Sector Wide Approach to planning (SWAp) was imperative in improving coordination, increasing national ownership of the water sector investments, and attracting more funding to the sector. The government of Tanzania and development partners (the World Bank, the African Development Bank (AfDB), the German, Dutch, and French governments, and the US Millennium Challenge Corporation (MCC)) jointly agreed to commit funds for the first phase of the WSDP (WSDP I) over five years from 2007/2008 to 2011/2012, at an estimated cost of US\$951 million. Through a programme of restructuring finalized in 2011, the need for the additional financing was realized and the overall budget increased to US\$1,621 million, while WSDP I was extended up to December 2015.

WSDP aims at strengthening sector institutions for integrated water resources management and improve access to water supply and sanitation services. The programme currently, has five main components, namely: Component 1: Water Resources Management; Component 2: Rural Water Supply and Sanitation; Component 3: Urban Water Supply and Sanitation; Component 4: Sanitation and Hygiene; and Component 5: Programme Delivery Support. Component 1, *Water Resources Management (WRM)* falls within the interests of this particular assignment. One of the key focus areas of WSDP programme through its water resources component, is the strategy to strengthen Basin Water Boards, Catchment and Sub-catchment Water Committees and Water User Associations capacity to manage water sources. Another key strategy is to coordinate development and implementation of the Basin’s Integrated Water Resources Management and Development (IWRMD) plan. The third strategy under WRM component is to strengthen Water quality monitoring and management.



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The WRM component is further divided into two subcomponents, i.e. Water Resources Management and development and Water Quality Management and pollution control. For the purpose of this assignment, only sub-component one, on *Water Resources Management and development* is assessed. It has seven key intervention areas namely: 1. Wami-Ruvu Basin Institutional strengthening, 2. Water Resources Assessment, Allocation, Regulation, Conflict Resolution Demand Management, 3. Water conservation and protection, 4. Water security, 5. Transboundary water resources management, 6. Implementation of IWRMD plan, and 7. National Water Resources Reforms and Investments.

Out of the 7 intervention areas listed above, intervention 1, 6 and 7 are directly linked to the advancement of IWRM implementation (Table 2.7.1 for details). This implies that, very key to SDG 6.5.1 with regard to supporting the implementation of IWRM, is the institutional strengthening, which includes relevant capacity building initiatives at various levels of the BWB and its instruments and also improving collaborations and partnerships among key players with regard to Water Resources Management.

Table 2.7.1: WSDP II Priority intervention for Water Resources Management and development sub-component Component

WSDP II intervention Area
Wami/Ruvu Basin Institutional strengthening
<ul style="list-style-type: none"> • Strengthening Operational Capacity of BWBs • Establishment of Water Resources Research Centre • Improved WR monitoring, enforcement and compliance • Strengthen Training Institutions for IWRM. • Strengthening of Catchment Committees (CC) and Sub-Catchment Committees (SCC). • Strengthening of WUAs.
Implementation of IWRMD plan
<ul style="list-style-type: none"> • Institutional and personnel capacity development • Water sources conservation and pollution control measures • Data and information collection, analysis and management • Construction of Multipurpose dams • Reviews and Amendment of Water resources management policies, strategies and laws • Disaster Management; Flood and Drought Management • Regular hydrometric equipment operations, checks and maintenance • Water resources pricing and tariffs review • Groundwater protection and recharge areas conservation
National Water Resources Reforms and Investments
<ul style="list-style-type: none"> • Institutional Strengthening and Capacity Building at National Level (DWR)



- Enhance Communication and collaboration with stakeholders
- Improve availability and access to data on WR Complex areas
- Address WRM Crosscutting issues

2.8 KEY TARGETS AS PER WAMI-RUVU BASIN INTEGRATED WATER RESOURCES MANAGEMENT

Out of the 7 intervention areas listed above, intervention 1, 6 and 7 are directly linked to the advancement of IWRM implementation (see Table 2.7.1 for details). This implies that, very key to SDG 6.5.1 with regard to supporting the implementation of IWRM, is the institutional strengthening, which includes relevant capacity building initiatives at various levels of the BWB and its instruments and also improving collaborations and partnerships among key players with regard to Water Resources Management.

Through its Water Resources Management and Development Component, WSDP II clearly guides the implementation of IWRM (SDG 6.5.1 goal) at a basin level. Wami-Ruvu Basin implements this by through its recently finalized Wami-Ruvu IWRMD plan. This plan identifies seven key intervention areas necessary for streamlining of water resources management framework. These are 1. Data and Knowledge Products, 2. Capacity Building/Skill Development, 3. Water Governance, 4. Water for Socio-Economic Development, 5. Environmental Protection and Conservation, 6. Water Demand Management, and 7. Disaster Risk Management. These form the basis for annual work plans at the basin level.

2.8.1. DATA AND KNOWLEDGE PRODUCTS:

The basin key interest in this is to improve data and information collection, processing and dissemination for the purpose of improving decision making for water resources management. This in many cases may involve enhancement of existing monitoring networks and strengthening technical capacity for data handling. IWRMD plan highlights key actions to be undertaken to achieve this objective, some of which include improvement and development of basin monitoring system, establishment of a centralized-digitized library and information management system, and device an efficient system for data storing, processing, management, sharing, dissemination, and forecasting.

2.8.2. CAPACITY BUILDING/SKILL DEVELOPMENT:

The suggested intervention is inspired by the need to address gaps and or lack of skills and expertise needed for effectively management of basin water resources. This involved capacity needs assessment and strategic planning for training of both technical and managerial personnel in the identified areas or fields of interests. Key fields that the IWRMD plans lists include building



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the capacity to analyse and assess surface water, groundwater, hydro-meteorological and ecological elements, system Analysis, and water resources protection and conservation.

2.8.3. WATER GOVERNANCE

The key interest in this is to promote good governance of water resources and institutional strengthening. Efficient utilizations of the water resources coordinated participation of various institutions and establishment of appropriate legal framework are essential ingredients in the IWRMD. The main objective in this is to ensure adequate financing of water management, proper coordination among institutions, meaningful participation, and transparent procedures. The IWRMD highlights key actions to achieve this objective, some of the actions include establishment of catchment water committees, implementation of water permit system, strengthening community participation and stakeholder communication, monitoring and inspection, and conflict resolution.

2.8.4. WATER FOR SOCIO-ECONOMIC DEVELOPMENT

This key intervention is provided based on the fact that adequate water should be available for all appropriate purposes and managed in a sustainable manner. The major objective to be considered in this key area is that the social-economic benefits of implemented water resources development projects in Wami/Ruvu basin are sustainably maximized. Key fields that the IWRMD plans lists include ground water development, irrigation development, urban and rural water supply plans, and promotion of rain water harvesting.

2.8.5. ENVIRONMENTAL PROTECTION AND CONSERVATION

Given the competing demands for freshwater resources, the basin is undergoing rapid environmental degradation that will eventually threaten water availability. This particular intervention intends to monitor and manage sustainable use of water resources in the basin through maintenance of a healthy and functioning eco-hydrology in the basin. To achieve this, IWRMD highlights key actions to be undertaken which include catchment management plan and riparian area management.

2.8.6. WATER DEMAND MANAGEMENT

This key target area is inspired by the fact that the future costs of meeting water needs depend on the ability to understand and manage water demands. Therefore, the main objective in this key area of intervention is to ensure efficient use of basin's water resources for more productivity with less water through reduction of water consumption and increased productivity. IWRMD plan list include upgrading and improvement of water supply and distribution system, introduction and promotion of high efficiency irrigation technologies, and water productivity improvement.



2.8.7. DISASTER RISK MANAGEMENT

Given the fact that Wami-Ruvu basin is mostly dense populated basin in Tanzania and it also hosts the commercial city/Dar es Salaam, it is of utmost important to protect the population against potential water related disasters and climate change impacts. Therefore, this intervention intends to ensure that the basin is prepared and resilient against the water related disasters. This will be undertaken through determination and establishment of water related disasters mitigation measures and determination and establishment of climate adaptation measures.

2.9 KEY TARGETS FROM 2021/2022 WAMI-RUVU ANNUAL WORKPLAN

Wami-Ruvu has annual work-plans for each financial year that is informed by their basin plans and other need assessments conducted for operational purposes. This strategic plan took the 2021/2022 financial year workplan as a representative of Basin immediate plans. During this time frame, the workplan lists eight strategic objectives for implementation as highlighted below.

2.9.1. STRATEGIC OBJECTIVE A: BASIN WATER RESOURCES ARE SUSTAINABLY ASSESSED, MONITORED, AND EFFICIENTLY ALLOCATED

Efficient assessment, monitoring and allocation of basin water resources in view of future water security. In this regard, strategic objective A embarks on construction and installation of 14 new monitoring stations, rehabilitation of 41 monitoring stations and to undertake river training and construction of gabions for selected 3 rivers of 10km stretch each. Likewise, the basin will prepare 40 micro catchment maps for water resource monitoring and prepare Water Resources Monitoring plans.

2.9.2. STRATEGIC OBJECTIVE B: WATER RESOURCES PROTECTION, CONSERVATION AND ADAPTATION TO CLIMATE CHANGE IMPACT STRENGTHENED

In the effort to safeguard the basin water resources, the 2021/22 annual workplan, the basin annual plans also intend to invest in water resources protection, conservation and adaptation to climate change impact strengthened. Main objective is of these activities is to safeguard water resources and the environment as a whole.

2.9.3. STRATEGIC OBJECTIVE C: STAKEHOLDER'S ENGAGEMENT AND PUBLIC AWARENESS FOR WATER RESOURCES MANAGEMENT ENHANCED

Stakeholder's engagement and public awareness for water resources management enhanced: purposely for including enhancing communication with all stakeholders and the public in general, carry out review of the WRBWB communication strategy.



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2.9.4. STRATEGIC OBJECTIVE D: WRBWB FINANCIAL RESOURCES AND FUNDING STRENGTHENED

The main objective of the WRBWB in the financial year 2021/2022 is to increase basin revenue from 1.9 billion to 4.005 billion Tanzanian Shillings. In order to reach this target various strategies will be applied including carrying out awareness programs on payment of water use fees, enhance efforts for debt recovery, review water user permits, review of water user charges and in collaboration with relevant departments prepare project proposals for submission to various development partners, donors and the National water fund. Moreover, the use of government electronic payment gateway (GePG) will be promoted.

2.9.5. STRATEGIC OBJECTIVE E: INSTITUTIONAL CAPACITY FOR WRBWB TO IMPLEMENT ITS FUNCTIONS EFFECTIVELY AND EFFICIENTLY DEVELOPED

The WRBWB will implement various actions in order to improve organizational and technical capabilities. Working tools (computers, photocopying machine, scanner, and printers) will be procured. Capacity development plan will be prepared, and implementation will start. Various capacity building interventions like providing different trainings to staff members, recruiting more staff, and constructing a Water User Association (WUA) office at Mgolole. In addition to that, a new organizational structure will be adopted to improve performance of basin functions.

2.9.6. STRATEGIC OBJECTIVE F: INTERVENTIONS AGAINST HIV/AIDS AND NON-COMMUNICABLE DISEASES ENHANCED.

Interventions against HIV/AIDS and non-communicable diseases will be enhanced. To achieve this, a combination of strategies like behavior change communication will be employed. Also, a biomedical intervention will be promoted including provision of condoms and voluntary circumcision.

2.9.7. STRATEGIC OBJECTIVE G: IMPLEMENTATION OF THE NATIONAL ANTI-CORRUPTION STRATEGY ENHANCED

Implementation of the National Anti-corruption strategy will be enhanced through conducting one seminar on good governance practices and the National anti-corruption strategy to all staff.

2.9.8. STRATEGIC OBJECTIVE H: WATER GOVERNANCE INSTITUTIONS PROMOTED AND STRENGTHENED.

To achieve this, one catchment committee and on sub catchment committee will be strengthened. Moreover, income generating activities will be provided.





2.10 QUANTIFICATION OF FINANCIAL RESOURCE NEEDS FOR IMPLEMENTATION OF SDG 6.5.1 IN THE WAMI-RUVU BASIN

2.10.1. BUDGET REQUIRED FOR IMPLEMENTING WAMI-RUVU IWRMD PLAN KEY TARGETS

Notably, the Wami-Ruvu IWRMD plan, just like other basin IWRMD plans has an ultimate goal of achieving the objectives of the Water Resources Management and Development Component (WRMD) of the Water Sector Development Programme (WSDP). IWRMDP contains a set of proposed key intervention areas with a set of actions that need to be implemented according to the recommended phasing and priorities. Notably, the proposed set of actions require financial resources, among other support mechanisms, to be successfully implemented. The necessary budget for implementation of each key intervention is presented in Table 2.10.1 as per IWRMDP documentation.

The total cost of the implementation of the Integrated Water Resources Management and Development Plan (IWRMDP) in Wami-Ruvu Basin is estimated at USD 2,443 million, to be invested over the 2020 to 2035 timeframe. Table 2.10.1 shows the phase 1 and phase 2 budget for implementing the key strategic intervention areas in Wami-Ruvu Basin.

Table 2.10.1 Budget for Key Strategic Intervention Areas

SN	Key intervention areas	Phase 1	Phase 2
		2020-2025	2026-2030
		Amount (USD)	
1	Data and Knowledge Products	1,603,360	1,420,270
2	Capacity Building/Skill Development	420,000	420,000
3	Water Governance	997,500	893,750
4	Water for Socio-Economic Development	812,728,767	630,753,871
5	Environmental Protection and Conservation	1,200,000	300,000
6	Water Demand Management	900,000	600,000
7	Disaster Risk Management	1,050,000	850,000



2.11 BUDGET REQUIRED FOR IMPLEMENTATION OF WAMI-RUVU 2021/22 ANNUAL PLAN

According to the WRBWB internal planning documents, the financial year 2021/2022 the WRBWB will implement the eight planned activities in fulfilment of its mission for each strategic objective as presented in Table 2.11.1.

Table 2.11.1: WAMI/RUVU Basin Budget for Financial year 2021/2022

SN	Strategic Objective	Resource Requirements (TSh)
A	Basin water resources are sustainably assessed, monitored and efficiently allocated	1,971,155,200
B	Water resources protection, conservation and adaptation to climate change impact strengthened	248,380,000
C	Stakeholder's Engagement and Public Awareness for Water Resources Management enhanced	230,750,000
D	WRBWB financial resources and funding strengthened	1,299,969,800
E	Institutional Capacity for WRBWB to implement its functions effectively and efficiently developed	252,755,000
F	Interventions against HIV/AIDS and non- communicable diseases enhanced.	57,000,000
G	Implementation of the National Anti- corruption strategy enhanced	49,000,000
H	Water governance institutions promoted and strengthened.	103,690,000
TOTAL		4,212,700,000

2.11.1. BUDGET SUMMARY FOR FINANCIAL YEAR 2021/2022

The main sources of funding for WRBWB annual expenditure comes from the Government disbursements from the Ministry of Water and from basin's own sources such as Water User Fees collection, application for Water Use Permits, and drilling and discharge permits and other sources. The income and expenditure profile of the basin was then used in this study to make



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projections as shown in Table 2.11.2, that summarizes projected income and expected revenue up to 2029/30 financial year.

Table 2.11.2: Wami-Ruvu Basin income and projections up to 2030

Financial Year	Sources of Revenue			Total Revenue per Financial Year
	Government	Own	Others	
2019/20	14,439,060,001	1,934,410,300	Non	16,373,470,301
2020/21	9,824,819,419	3,750,000,000	120,000,000	13,694,819,419
2021/22	11,400,000,000	4,005,000,000	120,000,000	15,525,000,000
2022/23	12,300,000,000	4,205,250,000	100,000,000	16,605,250,000
2023/24	12,800,000,000	4,415,512,500	110,000,000	17,325,512,500
2024/25	13,791,726,860	4,636,288,125	110,000,000	18,538,014,985
2025/26	14,783,453,721	4,868,102,531	110,000,000	19,761,556,252
2026/27	15,775,180,581	5,111,416,938	110,000,000	20,996,597,519
2027/28	16,766,907,441	5,366,731,344	110,000,000	22,243,638,785
2028/29	17,758,634,302	5,634,545,750	110,000,000	23,503,180,052
2029/30	18,750,361,162	5,915,360,156	110,000,000	24,775,721,318

2.12 FINANCIAL GAP ANALYSIS

The Basin's financial flow analysis shows that IWRMD Plan for implementation of IWRMDP Phase I (2020-2025) and Phase II (2026-2030) will require a total budget of USD 1,455 million. This means the required annual budget is at least USD 145.5 million.

The estimates are based on the Wami-Ruvu Basin projections to 2023/24. What the study did was to extend these projections to 2030 SDG planning period. These projections give a total estimated income of USD 83.5 million (192,969 million TZS) by 2030 as presented in Table 2.11.2. This income (USD 83.5 million) *is only 5.74% of the total required budget* for implementation of IWRMDP Phase I and Phase II. This means *there exists a significant financial gap of 94.26% to achieve SDG 6 by 2030*. Therefore, the existing financial mobilization strategies should be reviewed and improved for successful implementation of the IWRMDP plan.



2.13 ASSESSMENT OF THE EXISTING RESOURCE MOBILIZATION STRATEGIES/PLANS IN THE WAMI-RUVU BASIN

2.13.1. INTRODUCTION

Management of Water Resources in the Wami-Ruvu Basin is undertaken through *Multi-Level Water Governance* structures where two key development strategies i.e. the Water Sector Development Programme and Integrated Water Resources Management and Development (IWRMD) plans forms the basis for implementation. These two, guide the annual operational plans and subsequent budgets as outlined in proceeding sections of this Chapter.

MoW's Department of Policy and Planning (DPP) is responsible for policy formulation, coordination of preparation of sector plans, strategies, and resources mobilization. The DPP prepares work plan and budgets annually for each subsequent fiscal year of WSDP implementation by receiving input from components, departments and stakeholders. Using existing planning frameworks, DPP prepares long, medium- and short-term plans for the sector using a result-based Sector Wide Approach to planning (SWAp). Both sets of plans are consistent with respective consolidated sector Medium-Term Expenditure Framework (MTEF) and budget guidelines issued by the Ministry of Finance and Planning for that particular year. Government's Financial Year (FY) starts on July 1st and ends on June 30th.

Prior to the initial budget preparation process, Development Partners (DPs) confirm to the government their proposed contributions for each year of WSDP implementation. Annual budgets (Development (DEV) and Recurrent budgets) are prepared to adhere to sector MTEF and budget guidelines issued by Ministry of Finance and Planning. The budgets recognize planned contributions from local and foreign source categories. Confirmed commitments from DPs are reflected in the sector MTEF and annual budget estimates. Once completed, budgets (DEV and Recurrent) are submitted to the legislature for approval. Approval is granted before end of June.

Among the assumptions taken during planning of WSDP II & III were financial resources will be sufficient, available in a timely manner via same modalities as in WSDP I (large share of basket from both government and foreign sources).

2.13.2. WSDP RESOURCE MOBILIZATION

WSDP I managed to raise an unprecedented USD 951 million at midterm and ultimately during its conclusion, partners' commitments had reached USD 1.630 billion. On the other hand, financing requirements for the initial three years of WSDP II implementation were USD 2.2 billion. Resource mobilization strategies which were considered during WSDP II planning in 2014



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included traditional arrangements via mobilizing grants, concessional loans, and in-kind contributions from foreign, local and private sector.

According to WSSR 2015/2020, WSDP II financing availability as assessed by MoW show that by June 2019, a total commitment of USD 3.2 billion had been pledged. This implied a 97% realization of WSDP II financing target requirements of USD 3.3 billion. Notably, these commitments are skewed with a bias for water supply projects in urban areas and not in rural areas. WSDP II requirements for urban water and sanitation projects total USD 1.348 billion while the indicated commitments are at USD 2.302 billion. On the other hand, water resources management operations requirement is USD 804, but only USD 129 million were committed.

The report indicates a range of stakeholders' involvement in raising these resources including the Government of Tanzania (GoT), DPs, Civil Service Organizations (CSOs) and others (mainly grants from foreign sources amounting 20% and concessional loans amounting 71% of all commitments). However, according to WSSR, information of the actual releases from the private sector is not available.

Figure 2.13.1 provides information on financial releases from June 2007 to June 2019 (WSDP I and II) by sources of sector financing (Government, WSDP basket, Earmarked, and Private sector). The report further shows that, basket funding largely contributed to total releases (i.e., 37%) followed by Government of Tanzania (i.e., 32%) and finally the earmarked (31%). Private sector contributions were still not traced even to the conclusion of WSDP I and II.

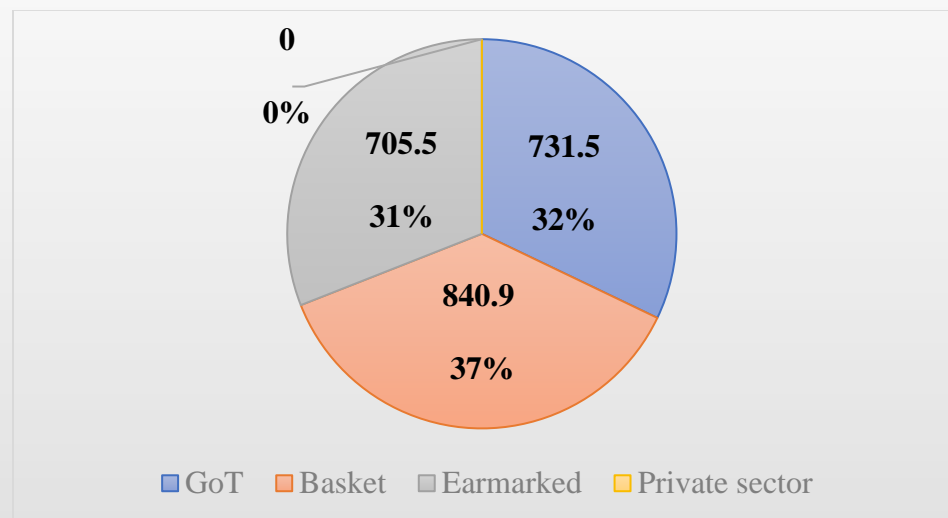


Figure 2.13.1: Funding releases by source (in Millions of USD) (Source, WSSR 2015-2020)

Efforts to ensure a steady WSDP II financing involved operationalization of National Water Investment Fund (NWIF) by Government of Tanzania (GoT) in FY 2016/17. The fund is a



hypothecated tax imposed through a levy on the purchase of fuel for vehicles. The sector is realizing the benefits of the fund since significant funds (43% of total programme financing sources in 2016-17) are provided by this levy. According to 2015/2020 WSSR, despite the impacts realized by this initiative, the fund cannot meet WSDP funding requirements.

2.14 WAMI-RUVU IWRMD PLAN RESOURCE MOBILIZATION

The current plans seems to be silent on this issue and hence the initiative reported herein tries to address this shortcoming.

2.14.1. ASSESSMENT OF THE FINANCING OPTIONS/ LESSONS FROM DIFFERENT GLOBAL WATER SECTOR FINANCING APPROACHES

Budget estimates elaborated in Section 4 provide the amount of revenue and expenses for implementation of a sector-wide (WSDP II) objectives and basin-wide (IWRMD Plan) targets. Financing on the other hand is the ability to raise funds from different sources, looking at adequacy of financing mechanisms specifically the source of financing and the targets thereof. This analysis looks into a range of financing practices for water resources management and especially for supporting IWRM-related activities in different countries and institutions.

Having understood the basin strategies and plans and their budgetary structure, this section assesses the financial landscape with the aim of identifying alternative sources of resources, especially from domestic sources that may have more sustainability. This assessment is geared towards finding solutions that have the potential of closing the financing gap between what is required and what is currently available. Notably, there is a need to look afresh into the financial flows and make the most of the opportunities offered by the continually evolving global financial landscape, as applicable to the implementation of integrated water resources management for Wami-Ruvu Basin. This is because the financing needs to achieving the SDG 6.5.1 objectives are much more demanding now than was previously the case.

Traditionally, water resources investments relied on public financing to meet its investment needs either through domestic financing or through development partner concessional funds and lending, with little emphasis private finance mobilization.

Generally, there are mainly two major sources of water resources management financing. These are public funds and private capital sources. Public financing includes all budget allocations from state or Government coffers, external transfers through Official Development Assistance (ODA) and Loans from governments, autonomous public infrastructure funds or publicly owned development banks. At times this may include subsidies targeted at water users or specific service providers, including the encouragement of in-kind and self-funding initiatives. Private capital on the other hand comes in many forms including loans, blended agreements, etc.



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Strategies for mobilizing finances differ depending on the targeted goals. In the water sector, most common have been the strategies for mobilizing financing for water and sanitation infrastructure. Much neglected has been financing for water resources management activities. Financing water resources management can be categorized into financing efforts to improve IWRM governance, financing towards strengthening water stewardship financing or infrastructure financing.

It is necessary to identify domestic or local financing options for supporting most of the basin investment plans. The amount accrued from domestic sources can be improved through looking into any new possible investment ideas or assessing current financial flows that are most in need of transformation, and better understand the elements of a financial landscape’s that require support”.

Current practice shows that water sector financing commonly comes from public funds. Common financing options that most countries employ in the water sector include funding from Government dismemberment, water tariffs and contribution from development partners and donors. Moreover, bank loans and minimally contribution from domestic charities and foundations are also noted.

While public funds are known to be the major source of funding that the basin management relies on, this does not have to be the case. Studies have shown that other sectors like mining and construction make good use of other sources of funding like the commercial capital to support their goals and plans. According to *OECD (2019)*, between year 2012 and 2017, the total private capital mobilized for achieving Sustainable Development Goals amounted to USD 157.2 billion, of which only 1.36% (USD 2.14 billion) was in the water and sanitation sector. Showing that the water sector underutilizes or under exploit the potential for mobilizing commercial capital.

2.14.2. 3TS

According to the Organization for Economic Cooperation and Development (OECD) and European Union Water Initiative-Finance Working Group (EUWI-FWG), financing the water sector has basically three major sources of funds i.e., 3T’s as highlighted in Figure 2.14.1 below.

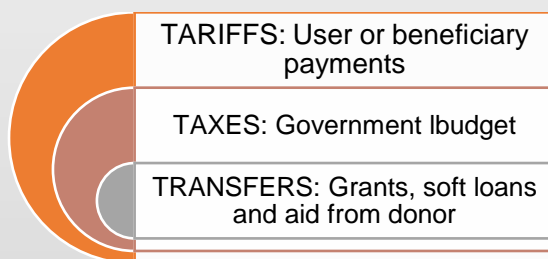


Figure 2.14.1 The OECD and EUWI-FWG 3Ts Financing Concept



Both Tariffs and Taxes make up the public financial resources. These funds can only be channeled to support activities aligned to policy priorities, regardless of the individual basin office priorities.

2.14.3. TARIFFS: BENEFICIARY (USER) AND POLLUTER PAYMENTS

The source of this category of revenues come from water users and business consumers including from those responsible for pollution i.e., revenues from offenders of polluter-pays principle. Traditionally, this is undercharged as because of the wrongly interpreted notion that water is a human right and should be freely provided. The increase in tariffs for water services and the introduction of the polluter-pays principle are critical to accessing finance. User payments can either be through cash or through in-kind remunerations like donation of labour or materials. In most cases, tariffs may vary across user of different socio-economic brackets, so that fees from some users may be used to cross-subsidies some users while over-charging others, this commonly applies to domestic tariffs only.

While it is clear that tariffs are charged to recover costs of water services, it still lacks a clear definition of the costs that are actually recovered by this mode of payment. The cost recovery needs to include other important services above the current limited definition of drinking water and sewage services. Improvements on water cost recovery schemes to include contributions from other sectors like agriculture, industry, energy, etc. This can be done by restructuring Beneficiary or Polluter pays tariffs to apply to water users from other related sectors like agriculture, industry, energy, etc. while it is noted that there are large costs associated with removal of freshwater pollution from agriculture, weak enforcement of regulations has allowed offenders to get away with the actions. Other approaches include making a distinction between charges for services, commonly retained by the service provider, and taxes or penalties. The latter has to be paid to the government for the purpose of financing other sectors. This can be improved or modified in such a way that even this group of financing gets retained in the MoW.

Moreover, to increase domestic finances, deliberate efforts must be taken to improve collections through tariffs. This may be achieved through introduction of a range of different payment schemes for different demands or beneficiary i.e., schemes that cater for domestic or drinking water supply, industrial or profit-making businesses and for irrigation use.

Further, more stringent measures to reduce unnecessary loss of revenues through mismanagement of resources or any water losses in irrigation infrastructure inefficiencies has a great potential to increase revenues.

2.14.4. GOVERNMENT BUDGETS (TAX)

State funds commonly originate from taxation or the sale of state-owned resources, goods and services. The major challenge with this type of funding is the instability or lack of assurance of flow of funds throughout the planning phase to meet the intended targets. Planning of water



resources functions fails to rely on this funds due to its irregular nature of flow of funds and complicated lengthy procedures of accessing the funding.

The benefits of having a water secure future which is the results of having an efficient management of water resources is generally enjoyed by the general public, collectively, making it difficult to charge the associated costs through user fees. Additionally, water resources management services may not be able to easily access commercial capital due to the fact that timely cost recovery of such investment's costs cannot be assured. Since the costs of providing water management services serve the general public, it is more appropriate for these costs to be met by budget allocations from the Government. Such services include costs of building, operating, and maintaining multi-purpose infrastructure, costs of controlling floods or mitigating drought. Consequently, collective and deliberate efforts must be taken towards estimation of benefits accrued by different water resources management services e.g., from a multi-purpose infrastructure by all beneficiaries. The results of such assessment may form the basis for allocating costs among beneficiaries, including those outside the water sector. This will help to strengthen this funding bracket by considering the inter-sectoral nature of water resources management to include other economic sectors that are beneficiaries. Similar approach has been successfully applied in countries like China whose policy framework has clear definitions and rules that guide public budgetary allocations to water funds that specifically caters for some water resources functions (Zhongming et al., 2012).

2.14.5. EXTERNAL TRANSFERS FROM OFFICIAL DEVELOPMENT ASSISTANCE (ODA)

External transfers are executed through grants and aid from donor agencies, NGOs, and charities. ODA is composed of grants and concessional loans from different sources. ODA has a number of financial instruments at their disposal, though commonly used instruments are bilateral or multilateral loans and grants. Other rarely used financing instruments include equity and debt. Moreover, donors could form a partnership with the private sector in provision of the financing needed.

A review of ODA financial flows for water financing from 1990s to 2000s shows that 70% of water aid comes mainly from five donor countries, namely, Japan, IDA, Germany, United States and France (OECD, 2009). Literature shows that, about 72% of the financing is channeled through grants and 28% as loans (Zavereh, 2011). Loans however are mainly used for large scale water infrastructure, largely water supply and sanitation work. Water resources management operations in most cases fail to access this especially if it is in form of loans.

Transfers could effectively be used for funding management and operations or sector reforms as these activities have limited capacity to raise own funds from revenues or commercial sources. However, a more sustainable financing should shift dependency from transfers to tariffs or government budgets.



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In Tanzania, development partners group (DPG) have been closely working with the Ministry in a number of developments. DPG in Tanzania is formed of 17 bilateral and 5 multilateral agencies. DGP practice in the MoW in Tanzania is for donors to use basket funding to pool their resources aiming at making administration easy and smoothing out annual peaks and troughs.

2.14.6. COMMERCIAL (REPAYABLE) FINANCE

Another major source of water financing is the investment finance. This can be raised through loans from International Financial Institutions (IFIs) or commercial, local and international banks. It can also come from equity shareholders or other commercial sources (private finance). This is accessed through private sector participation by enhancement of PPP. Commercial capital can be a very useful tool in supporting water resources management especially if use is made of instruments such as guarantees and blending financing that capitalizes on funding from different sources.

Understandably, such investments need to be refunded back. Equity investors on the other hand require dividends and/or expect their shareholding to increase in value. To avoid unsustainable levels of debt in the basin, investment finance requires careful planning prior to taking these loans. In most cases refund is guaranteed through the 3Ts sources of funds mentioned above i.e., mainly tariffs or government budget allocations. This means that these type of support is more suited for establishing infrastructure for key water-use developments such as agriculture and energy. This may not suit water governance functions since these may at times fail to generate enough revenue in-time to pay back the loans. Even though these functions are vital for water security, investments in activities like establishment of flood warning systems, or hydrological monitoring systems may not have direct financial returns that can be used to repay loans. This is the major challenge with regard to financing IWRM governance. In such cases, either of three funding sources must be willing to bear the costs, given the assurance that the impact of such investments is notable. 3Ts can also assist as a source of revenues to leverage commercial capital in form of loans, bonds, or equity.

Practically, for the institution to be eligible for this funding bracket, they are normally required to demonstrate their credit worthiness. In most cases one must be able to exhibit efficient governance structures, proper accounting recordkeeping and financial documents, historical cash-flows, evidence of past debt performance, to mention just a few. This explains why commercial capital is one of the most underutilized potential funding resources in water resources management. Even though it holds a great potential of supporting water resources management functions, eligibility requires a financial architecture that attracts private investors. At times it may call for improvement of institutional enabling environment and strengthening or building communication channels between public and private sector. Maximizing the inherent potential in this funding bracket requires a prior assessment of potential partnering opportunities among all water beneficiaries and stakeholders.



2.14.7. AN INVENTORY OF INTERNATIONAL PARTNERS AND DONORS/DONOR INVESTMENTS IN THE WATER SECTOR

A closer examination of where the funds are derived in the water sector was conducted as narrated in the Financing Water for All Report of 2003. By assessing the source of funds, the data and figures can be incorporated into an appropriate platform for the demand and supply side. The following (Table 2.14.1) is a breakdown of the water funds source analysis from the report (Winpenny, 2003).

Table 2.14.1: Global Sources of Water Sector Financing Mechanisms

Source of Finances Instruments	Intermediate Instruments	Uses of Finance Instruments
Donors and IFI's <ul style="list-style-type: none"> Grants Loans 	Public Budgets (Budgetary Finance)	National governments <ul style="list-style-type: none"> Grants Loans
Private Investors <ul style="list-style-type: none"> Loans Debt/Equity 	Banking System (bank lending)	Municipal governments <ul style="list-style-type: none"> Grants Loans Debt/Equity
Public Partnerships <ul style="list-style-type: none"> Grants Loans Debt/equity 	Insurance Market (Risk guarantee schemes)	Utilities <ul style="list-style-type: none"> Grants Loans Debt/Equity Tariff revenue
	Capital Market (Investment agencies)	

Source: GTZ, 2006

2.15 MECHANISMS OF PRIVATE SECTOR INVOLVEMENT IN WATER FINANCING

The private sector landscape involves a range of actors and stakeholders including companies, industries that have large water demands, banks and other financial schemes, private water sector providers, among many others.



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Private sector involvement is vital in advancing the integrated water resources management implementation plan in the basin. In most of the basins in Tanzania, the potential for private sector involvement in financing investments is yet to be fully explored. This is mainly due the private sector reluctance to get fully involved in financing structures that they may not be fully aware of the risks and opportunities attached to them. Soliciting for potential partnership opportunities or repositioning to attract private sector involvement often requires a change of norms, policies and practices that is more accommodative of private capital financing. At times rules and regulations concerning investment conditions need to be clearly stipulated for all with assurance that different partners interest is safeguarded.

In this context, Wami-Ruvu Basin Office may benefit from much stricter and more organized monitoring and evaluation schemes that would improve effectiveness of project activities execution. For instance, in order to efficiently mobilize commercial finance in the basin, especially from local domestic investments, policy reforms to accommodate and promote efficiency gains, cost reduction and cost recovery measures may need to be considered. There may also be a need to clearly define the level of involvement expected from the private sector. Further, building and improving communication channels between public and private sectors is a pre-requisite for the success of any PPP ecosystem, including water sector financing.

Private investor's interest in supporting integrated water resources management would only happen through having a transparent and clear financial flows and performance evaluations. Further carrying out awareness raising programmes to deliberate introduce deepen the understanding of investors in the water sector and especially in this case, IWRM. This needs to include clarity on potential investment risks and exposures necessary for development of appropriate risk management plans.

2.15.1. PUBLIC-PRIVATE PARTNERSHIP (PPP) ECOSYSTEMS IN THE WATER SECTOR

Public-private partnership (PPP) is defined as “a long-term contract between a private party and a government agency for providing a public asset or service, or both, in which the private party bears significant risk and management responsibility” (The World Bank, 2012). These are partnerships between a government agency and a private firm established to finance, build, or operate a project. PPP are envisioned to be beneficial to the water sector through provision of a platform for greater access to technical expertise from the industry, and thus enhance the existing public sector capacity. It is set up to maximize the use of the much-gained private sector experience and capacity in the public sector. Moreover, PPP provides greater access to capital markets.

Often, PPP ecosystems, include private sector financiers and third-party participants such as auditors (private or social institutions). The advantages of involving and collaborating with a third-party institution include a closer and a higher level of project scrutiny, that help to reduce



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the risks of failure or discrepancy as more stakeholders are negotiating, probing, and testing the agreement. Involvement of a private sector into a public investment can be carried out through a number of PPP models which include service contracts, management contracts, leases, concessions and build, operate and transfer (Bank of Tanzania) options.

Private sector involvement in supporting the water sector in Tanzania still has room to be improved. The effective contribution of the private sector in mobilizing finances for water resources management operations is still very low. WSSR (2015-2020) report indicate that the largest share of WSDP financing is from public funding accounting for about 85% of the total financing contributions. These were released in form of government transfers, grants, and low interest loans from bilateral and multilateral development agencies. This shows that private water capital mobilization still leaves a lot to be desired, even though Tanzania has enacted a *Public Private Partnership (Amendment) Act*, No. 9 of 2018 (the PPP Amendment Act), gazetted and came into force in September 2018. The legislation defines the institutional framework for the implementation of PPP agreements between the public sector and private sector entities and also set rules, guidelines, and procedures governing the development and implementation of PPPs in Tanzania. The Act allows contracting authorities in the Ministry to conclude PPP agreements. Moreover, there is also an Action plan for enhancing private sector participation in the water sector 2018-2025. This is aimed at increasing the number of private sector players investing in both capital and operation of water and sanitation services in Tanzania.

The USAID (2020) Tanzania Water Sector Assessment for Strategy Development publication highlights the private sector actors in the sanitation and hygiene services to include Service Providers (small & medium, seized); Operators (with fecal sludge treatment facilities); and manufacturers and sellers of sanitation products. There is a need to map private sector actors in integrated water resources management and their possible contribution to improve management and water security. According to USAID (2017) Some of the strategies that have been successfully used in the past to motivate PPP in water stewardship for example, is the understanding of the water risks and the associated business risks and opportunities to companies/sectors with large water footprints or substantial wastewater discharges e.g. beverage, electric power, food, , mining, hotels, etc.

2.15.2. BLENDED FINANCING INSTRUMENTS IN THE WATER SECTOR

A number of financing instruments have been used in the past. These include the use of guarantees and blending funds from different sources. Blended finance makes use of funds pooled from both public and private sources (Figure 2.15.1), in an effort to mobilize more capital to sustain the sector goals. *“The OECD defines blended finance as the strategic use of development finance to mobilize additional finance towards sustainable development in developing countries”* (OECD, 2018). Blended financing helps to increase banks’ confidence that could otherwise not trust the sector actors because of their low financial muscles. The blended



mechanisms offer more suitable lending products, with reduced interest rates, longer tenors, and suitable grace periods and collateral requirements.

Blended finance structures (Figure 2.15.1) have been widely deployed even in the sub-Saharan Africa. More common is the use of public or philanthropic capital towards achieving a water secure Africa. According to OECD reports, common blended financing instruments include guarantees, credit enhancement, credit lines and technical assistance. Blended finance mechanism often makes use of international philanthropic foundations, microfinance institutions and or bilateral funding agencies in addition to the government funds.

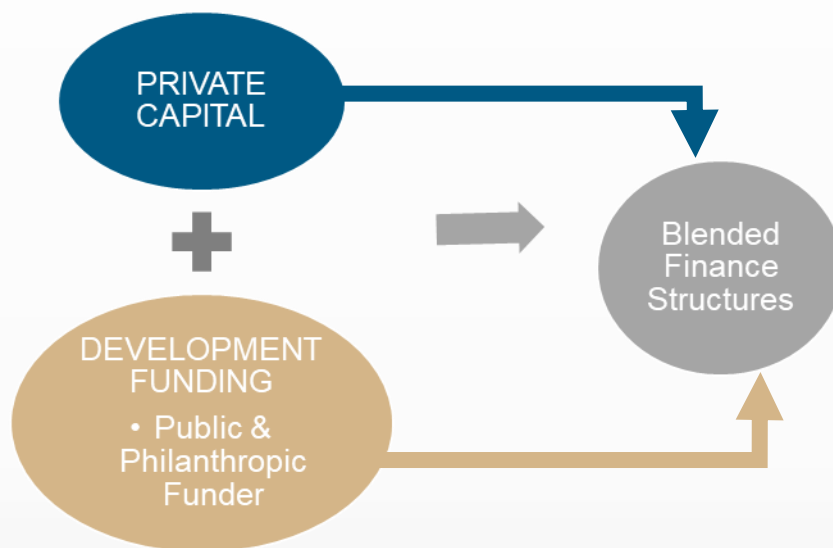
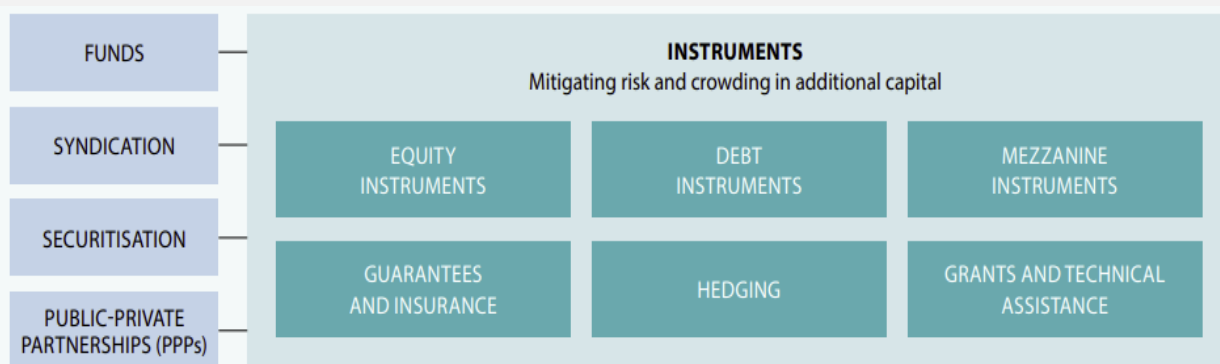


Figure 2.15.1: Structure and/or intermediation of instruments to mobilize private capital (OECD (2018))



Source: OECD (2018)

Figure 2.15.2: Mobilizing Private Capital Investments from Blended Finance Instruments and Mechanisms (source: OECD, 2019)



Blended finance can be worked out in a range of mechanisms i.e., Investment funds, syndicated loans and PPP (Figure 2.15.2). While Guarantees and Insurance help to manage the investors' risk by transferring the same to guarantor, technical assistance can be extended through capacity building programmes targeting investee or borrower or at times geared towards enhancement of financing spectrum. These are intended to support increased operational efficiency and financial sustainability in utilities.

This financing structure however has its challenges, especially with regard to financing integrated and non-structural investments that in most cases do not generate hard cash largely contribute to areas such as improving workers skills, improving access to relevant data or other enabling environment.

2.15.3. LESSONS LEARNED FROM BLENDED FINANCE INVESTMENTS IN THE WATER SECTOR

Examples of successful blended finance mechanisms include Water Revolving Fund in the Philippines (PWRF) that has blended official development assistance and domestic public funds with commercial financing. These are used for supporting water-related projects, through borrowing at lower interest rates. Others include the *"COP26 Blended Finance Platform, an initiative focused on identifying blended finance solutions that aim to mobilize climate finance and investment to emerging markets"* (OECD, 2019)

The Kenya Pooled Water Fund, KPWF (<https://kpwf.co.ke/>), is one of successful stories of blended finance. It was initiated by Water Financing Facility through the support of Kenyan and Dutch Governments. KPWF helps provide access to capital market financing having pooled finances from pension funds and other investors. This funding scheme only support projects with long tenor. the pooled finances help to reduce risk exposure.

In Tanzania, examples of such financing mechanisms include the [Investment Financing Facility](#) (IFF) that was established in 2014 by Ministry of Water and KfW particularly for improving urban water supply and sanitation utilities (UWSSAs) access to commercial loans to support infrastructure investments (see Figure 2.15.3). The potential for this initiative however has not been fully utilized due capacity and administrative issues related to public financial management.

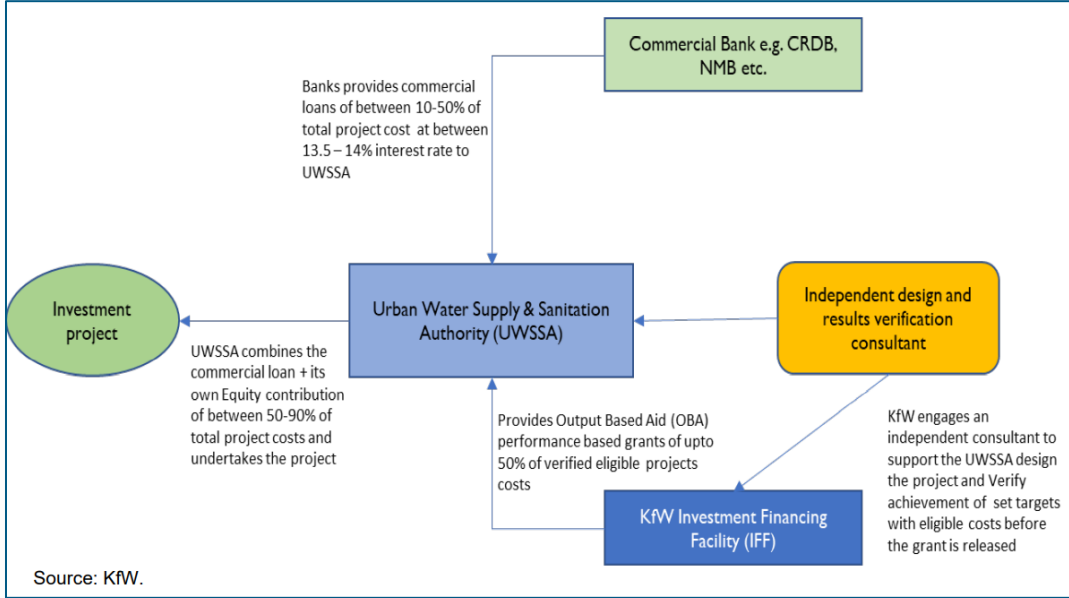


Figure 2.15.3: An example of IFF Blending Financing Scheme in Tanzania

2.16 EXAMPLES OF REGIONAL/ NATIONAL FINANCIAL RESOURCE MOBILIZATION APPROACHES/ FRAMEWORK

WRM into the three major components of governance, stewardship and infrastructure, and the four financing sources of user charges, state budgets, ODA and commercial funding. The following are the examples of water financing in different entities

2.16.1. DIRECTORATE-FOR WATER, SPANISH MINISTRY FOR THE ECOLOGICAL TRANSITION.

Spain has taken full advantage of the opportunities generated by its membership of the European Union to develop its water sector. Since 2000 and by 2020 it will have received over EUR 90 billion from EU cohesion and structural development funds, of which almost EUR 19 billion for environmental and water programmes. In order to maximize the mobilization of EU funds in successive funding periods (2000-2006, 2007-2013, 2014-2020), Spain had to ensure that the available funds were spent effectively and efficiently by all authorities and other relevant actors. For each funding period, Spain developed a strategic document that was based on an analysis of investment needs and the ability to absorb EU funds, identified priorities for EU support. As a consequence, Spain was able to receive more funds than initially allocated, as funds originally pre-allocated to other EU member states and that had not been spent were re-assigned to Spain

2.16.2. FINANCING THE MEKONG RIVER COMMISSION

Between 1957 and 1975 the Mekong Committee, supported by the Mekong Secretariat, was a regional UN body, funded by the UN. It then entered an unsettled period when it became



increasingly hijacked in favour of bilateral projects, until it was reconstituted as the Mekong River Commission (MRC). The MRC currently has a core budget of \$2 million contributed by the four regional members, grants from donor agencies (some of them in kind) and an 8 percent surcharge on donor-funded projects implemented by the MRC.

MRC's programme budget is larger – US\$15-20 million per annum – and is funded almost entirely by grants from regional governments and bilateral and international agencies. An earlier proposal to finance the MRC from a Mekong Trust Fund fell afoul of some members. The MRC's history illustrates the tendency of the Commission to downplay its "regional public goods" mission in favour of bilateral initiatives – especially when its income is partly based on the surcharge on bilateral projects. Most recently the MRC has adopted a programmatic approach, with four main work programmes ("key result areas"). These are funded by the World Bank/GEF and various bilateral donors (ODI *et al*, 2001).

2.16.3. SADC REGION RESOURCE MOBILIZATION FRAMEWORK

Article 26A of the 2001 Agreement Amending the treaty of the SADC provides for the establishment of a special fund of SADC known as Regional (infrastructure) Development Fund (RDF), which is an instrument of SADC for the social and economic development and integration of the SADC region. Member States are mandated by the SADC Secretariat to establish the SADC Regional Fund for Water Infrastructure and Basic Sanitation (the SADC Water Fund), as the key financing facility in the water sector in the region. This Fund is regarded as a special "water sector financing window" of the SADC RDF. The Development Bank of Southern Africa (DBSA) is the Project Executing Agency to implement the start-up phase of the Fund. Initial financial contribution of 10 million EUR was released by the German Development Bank.

The objectives of the Fund include to strength the coordinating function of SADC in Water Sector funding; to create an instrument to channel International Cooperating Partners (IPCs) contributions to the SADC Water Sector; and to improve the regional water infrastructure. This funding however finances major service contracts only. Only projects requiring a grant of a minimum of 2,000,000.00 € (two million Euro) and a maximum of 4,000,000.00 (four million Euro) are considered for support.

The sustainability and finance mobilization scheme for SADC Water Fund relies on the member states' ability to fully recover the investment costs within the agreed time period. This is ensured through eligibility criteria placed that requires the beneficiary to have submitted feasibility studies and realistic cost estimates accompanied by financial proposal that clearly stipulated cost recovery strategy for the intended investment project.

This implies that the funding mainly supports only productive water infrastructure like regional water supply or irrigation infrastructure, the challenge with this kind of support is the limited support given to the management of water resources operation and water governance and institutional strengthening including IWRM planning.



2.16.4. FINANCING WATER RESOURCES MANAGEMENT IN SOUTH AFRICA:

South Africa has a number of instruments they use to fund the planning and implementation of catchment management strategies. This includes the Water Resources Management Charge (WRM charge) which was introduced to recover the governance operational costs in a basin, including, but not limited to water allocation activities, Water resource protection, resource quality management and water pollution control, Monitoring and assessing water resource availability and Water quantity management, including flood and drought management (*Pegasys, 2009*)

Under the 1999 Pricing Strategy this WRM charge is applied to consumptive water uses, namely abstraction, storage (losses) and streamflow reduction activities (commercial afforestation). However, this was revised in 2007 to expand its applicability to include waste discharge. A policy decision was made to apply a single charge to all users within each sector (urban-industrial, agricultural and forestry) in a water management area. Subsidy mechanisms have been developed to waive the charges for emerging black farmers for a specified duration.

The implementation of WRM charges to all legally registered users in the country required the registration and billing of more than 60,000 customers with about 80,000 water uses. However, less than 20% of the customers provide more than 80% of the revenues. Registering users, maintaining the data base, billing according to water use and recovering costs needs serious technical, managerial and financial resources from the Department of Water Affairs (DWA), linked to the establishment of the water resources national register and billing systems.

South Africa also has a Water Research Levy. Since 1984, water research levies have been charged on urban, industrial and irrigation water from government water schemes to support research by the Water Research Commission. This is one of good examples of financing of water governance through user charges (Tariff).

Moreover, South Africa also has a coherent system of water pricing framework (Figure 2.16.1), working at different stages of the water cycle and serving clearly articulated national policy aims.

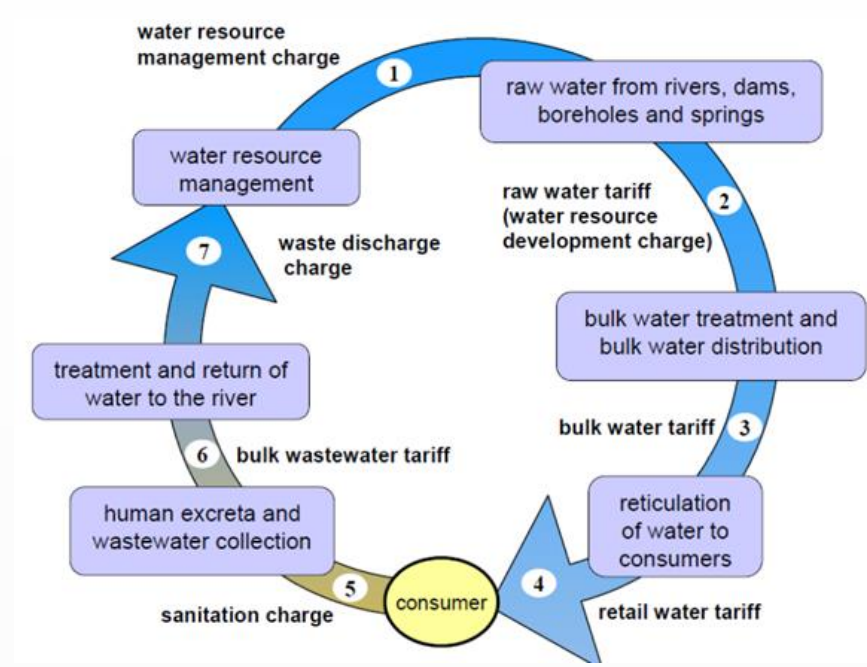


Figure 2.16.1: South Africa water pricing framework articulating water resources and water services (Source: Strategic Framework for Water Services, 2005)

Financing Water governance in South Africa

Water Governance operations financing relies on *state funding*. The activities supported include Non infrastructure related activities required to manage water resources. *ODA* on the other hand is channeled through the National Treasury regarded as a supplementary to the state budget. *ODA* is commonly given in form of grants, and rarely as the expertise/ technical support or loans. Major *ODA* contributors are the European Commission, Ireland, Belgium and the Department for International Development (DFID), UK.

Financing Water Stewardship in South Africa

Water stewardship is largely supported by User Charges: These may come from Water use licensing fees and a license application fee (approximately ZAR 114). Moreover, the tariff system consists of a Waste discharge charge system (WDCS), founded on the polluter pays principle, where catchments or basins whose waters fail to comply with acceptable levels are charged. Further, mitigation *charge* is applied to users or offenders that in one way, or another have contributed to pollution. It is approximated to recover full financial costs of the identified mitigation option. Considerations of the costs are therefore given to the discharge load. Another tariff scheme used in water stewardship that largely drives the goodwill in safeguarding the waters is the incentive charge. This is aimed at promoting reduction in effluent disposal loads to attain acceptable water quality standards in the basin. The fee is set strategically to inspire a change of behavior of the responsible actors.



Looking across the water stewardships support in South Africa, it is observed that largely is funded through state budgetary allocations. This has been maintained at about 60% level for many years. ODA on the other hand, is hardly received for water resources management. While Commercial Finance is at an advance stage, since South Africa has been using this funding bracket colossally for infrastructure development. A good example is the Trans-Caledon Tunnel Authority (TCTA) which is a state-owned entity mandated to implement and fund raw bulk water infrastructure and empowered to raise funds from the domestic and international money markets. However, most such arrangements include public ‘stewardship’ functions as well as the supply of water to commercial users

2.16.5. FINANCING WATER RESOURCES MANAGEMENT IN ZAMBIA

Water resources management financing in Zambia is driven by its water policy that has identified and stipulated the guiding financing principles. These includes;

- Cost recovery initiatives through user tariffs applicable for only productive services as guided by service providers
- Public financing is used to support public goods (e.g., is the use of public agencies to build freshwater treatment or wastewater treatment plants under BOOT contracts).
- Make full use of external grants and loans
- Co-finance international water projects on the basis of equitable benefits
- Ensure the cost of multi-purpose schemes are shared between sectors
- Tap finance from commercial sources and negotiate PPP for new sources

2.16.6. FINANCING WATER RESOURCES MANAGEMENT IN GHANA

Ghana water resources management operations have largely been financed by internally generated funds (IGFs) from the Water Resources Commission (WRC). This have consistently exceeded state budgetary allocations. IGFs is collected from administration fees, application fees, raw water abstraction fees and drillers’ licensing fees. Reports show that the state financing hardly meets 15% of the total annual budget. However, meaningful contributions have also been through ODA which is mainly supported by CIDA, DANIDA, EU, UN-HABITAT and UNICEF through grants. Just between 2004 and 2010, a total of GHS 5,238,816.70 was released to the WRC as grants

2.16.7. WATER RESOURCES MANAGEMENT FINANCING IN UGANDA

Water governance financing in Uganda is dominated by State Funding: In Uganda financing for WRM falls within the overall financing for the water sector. Unfortunately, this ranges between 2 to 5% of total budgetary allocations. For example, in 2008/9 the Government of Uganda (GoU) approved funding was UGX 110 billion (60%), while donor funding was UGX 74 billion (40%). Of



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the UGX 184 billion, UGX 14 billion (8%) was for recurrent and UGX 170 billion (92%) was for development activities.

Financing water stewardship on the other hand is through a number of instruments. One being through User Charges: this comes from water permits application fees, water abstraction fees and discharge fees, and charges for water quality laboratory analyses.

2.17 PROPOSED RESOURCE MOBILIZATION FRAMEWORK AND GUIDELINES FOR WAMI-RUVU BASIN

Financing water management and governance operations, which are vital in sustainability of the resource, have always been given little attention leading to allocation of minimal budgets on the same. Water management functions such as catchment conservation and protection, planning, etc., are often given less attention. The proposed strategy is anchored on recognition that challenges in financing water resources management must look beyond sole investment in the water sector but rather funding from other sectors, like agriculture or energy sectors of which could assist in reducing the financial burden on the Ministry of Water. Only then can we appreciate the multi-sectoral approach in the IWRMD plans.

2.17.1. STRUCTURAL ELEMENTS OF THE PROPOSED RESOURCE MOBILIZATION FRAMEWORK

At the core of the proposed strategy is the emphasis of treatment of water as an economic good, and decentralization of management and delivery structures accompanied by a greater reliance on pricing. Further a more stakeholder participation and especially the private sector participation is at the core of the proposed strategy.

The proposed financial strategy aims at increasing financing of investments that contribute to improving water governance, access to data knowledge and products, capacity building, protection and conservation against environmental and climate risks and disasters. Further, the strategy promotes financing approaches that go beyond traditional thinking of financing water investments that mainly look into water supply and sanitation infrastructure.

The proposed strategy is anchored on the following guidelines'

- Promotion of financial sustainability
- Appreciate the uniqueness of the strengths and challenges faced by WRBWB in comparison with other basins
- Guided by the WRBWB targets, priorities and plans

These were addressed through four key principles that generally guide water resources management financing



1. **Polluter Pays Principle:** influence behaviour to reduce pollution or generate revenues to alleviate pollution and compensate for social cost. These may be affected through economic instruments such as taxes and charges (e.g., abstraction or pollution charge, etc.
2. **The Beneficiary Pays Principle** aims at sharing the costs of water management between different water users such as industry, households and agriculture. The use of payment for ecosystem services illustrates this principle well, whereby beneficiaries pay directly (or indirectly) for the service providers. For this to be effective, it must be preceded by identification of key beneficiaries in different sectors (e.g., tourism industry, agriculture, mining, etc.). Further a clear definition of appropriate economic/policy instruments or compensation scheme to be used for each beneficiary. (e.g., a tax on land use or property value) to harness identified beneficiaries
3. **Equity Principle:** though not widely use, the principle aims to identify who, within a group of users, bears the costs and benefits of water management. It aims to ensure equity in the access to water services and protection against water-related risks. When risks are disproportionate for some users, how would these be handled? According to OECD, (2019), only Chile, Israel and Portugal employ this principle.
4. **Coherence** between policies that affect water resources. Agriculture, land use, or energy policies can severely increase the cost of water management. Factoring water in and reforming allocation of public moneys in these policies can be more cost effective than mobilising additional funding in the water sector

The key stakeholders and beneficiary of the financial strategy are the decision makers in various water-related sectors including water, irrigation, agriculture, energy, food security and all planning and finance ministries, water utilities and regulators, local government authorities, etc. Notably also the financial partners, investors and water users forms part of the target audience for the strategy. Financing Mechanism or Acquisition Strategy & Partnerships

2.17.2. ESTABLISHING FINANCIAL RESPONSIBILITY AMONG KEY STAKEHOLDERS'

This is expected to improve sector financing by providing a wider base for private sector involvement, attracting private capital in advancing the sector plans, and in this case, Wami-Ruvu Basin plans. Defining the role of the investor community, has the advantage augmenting various actors' interests, scale their engagement and collaboration in capital flows while takes into account individual investor capacity. Also vital to this is the creation of *investor ecosystem* or engage with existing investor groups/ stakeholders around Wami-Ruvu Basin that thrives to improve investor understanding of opportunities and risks of investing in water resources management and especially IWRM advancement. This may require reforms that would promote transparency and disclosures that would encourage active participation of a range of actors in



financing WRBO activities. At times this may call for formulation of new stakeholders' engagement frameworks.

In attempt to improve stakeholders' engagement one may explore effectiveness and modalities of engaging user communities through innovative PPP approaches like use Water-ATMs, water credits which is basically a model attached to micro-financing. Most of these community-based models may necessitate awareness raising programs that exposes the user communities to the available PPP schemes. This is preceded by:

- Identification of potential actors and institutions (key categories are as listed in Figure 2.17.1)
- Defining governance roles and operational functions necessary for management of water resources

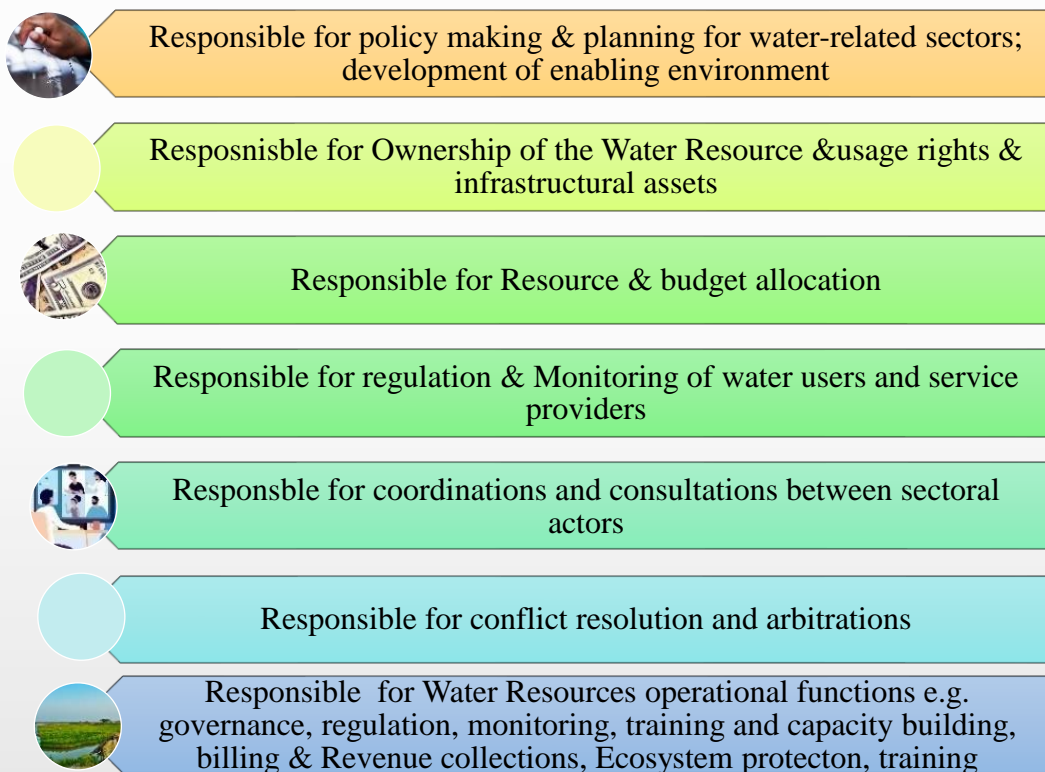


Figure 2.17.1: Categories of Key Actors and their Roles in the basin

Clarity over ownership is vital in the efficient allocation of water and for attracting investment capital into infrastructure investment and renewal. The strategy needs clarity on the Actors and stakeholders, as it needs ownership and championing by key actors and stakeholders. These crucially include political leaders and officials from the national financial community, including



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Ministries of Finance. Stakeholders should be of sufficient seniority to carry weight within the community they represent and to be able to deliver the support of their constituents. Some of these will be outside the water sector, as it is normally construed. Donor agencies and other external partners should lend judicious support.

2.18 PROPOSED RESOURCE MOBILIZATION STRATEGIC OBJECTIVES AND ACTIONS

Goals for each key area of action have been set in order to streamline and focus on the action plan development process. This action plan sets out a number of objectives, strategies and recommended actions for key areas of action that enable achieving of the set goals.

2.18.1. GOAL 1: IMPROVE BASIN FINANCIAL ENABLING ENVIRONMENT TO IMPROVE STAKEHOLDERS' INVOLVEMENT

Justification:

Currently there is low involvement of private sectors in supporting water investment programmes. The capacity to attract commercial finance for particular aspects of water management (such as infrastructure development and the delivery of water services) will depend on the robustness of the institutional and regulatory framework, including business models in place (who pays for what). The existing institutional frameworks do not fully ensure private investors against losses. Apart from that, the basin has not yet explored the full potential of different actors/stakeholders in supporting different investment initiatives. Roles and responsibilities of key public actors are well defined but those of private sectors are not clearly stipulated. Clearly defining roles helps to identify beneficiaries, and allocate the financial burden across beneficiaries

Currently other water-related sector Ministries do not have a defined role or responsibility of financing water resources protection and sustainability of sources even though their plans rely on availability and sustainability of these resource. Financing water governance should be not the sole responsibility of the MoW but also other beneficiaries like Ministry of Energy, Environment, Fisheries, etc.

This goal therefore intends to leverage more finance from the private sector by improving the enabling environment to encourage their involvement. Two major instruments for increasing creditworthiness of an organization, which provides more access to commercial finance is technical & financial efficiency and secondly governance & institutional arrangements that both increase operational efficiency



Strategic Objective-1: Reformation of Basin water investment legal framework (laws, policies and regulations) & Governance structures to be more supportive of private sectors involvement.

Actions:

- Review how the existing Legal Framework affects Private Sector Involvement in financing.
- Initiate open dialogue between the public and private sectors in basin on shortcomings of the existing legal and regulatory framework.
- Design new water investment Legal Framework that considers observations from the review and stakeholders' engagement.
- Improve basin office financial governance by making them creditworthy or increase their creditworthiness and efficiency in capital planning/ reducing unit costs
- Develop capacities for financial planning, financial management, financial control, and evaluation of non-conventional technical projects.

Strategic Objective-2: Integrate water financing considerations across all water related sectors

Actions:

- Identify different sectors that benefit from or affect the sustainability management of the water resources in the basin.
- Review existing strategies, policies and plans of the identified sectors on their flexibility and limitations for cross-sector coordination & planning with the Ministry of Water and Wami-Ruvu Basin Office.
- Identify appropriate instruments for mobilizing financial resources from the identified sectors so as to finance expenditures for sustainable water management in the Wami-Ruvu basin.
- Conduct a collaborative assessment of multi-purpose infrastructure costs, risks and returns/benefits to different sectors which will form the basis for allocation of the same.
- Develop capacities for planning across the sectors relating to the basin water resource.

2.18.2. GOAL 2: MOBILIZING ADDITIONAL AND INTERNATIONAL FINANCIAL RESOURCES

Justification:

Basin financial flow analysis shows that IWRMD Plan for implementation of IWRMDP Phase I (2020-2025) and Phase II (2026-2030) will require a total budget of USD 1,455 million. This means the required annual budget is at least USD 145.5 million. So far, the projected income is around



USD 83.5 million by 2030 which shows that the current mobilization capacity is only 5.74% of the total required budget for implementation of IWRMDP Phase I and Phase II.

The current cost recovery mechanisms are more focused on water supply and sanitation beneficiaries, leaving out other group of users from other related sectors like forestry, agriculture, industry, energy, etc. These schemes therefore fail to get contributions from other sectors that benefit from having sustainable water resources management. Moreover, the current practices and regulations are yet to fully embrace enforcement of polluter pays principle, where polluters are required to compensate the realistic costs of application of cleaner technologies to contaminated receiving waters. The tariff structures can be improved to reflect the true economic value of clean water use in different sectors and be more inclusive of compensation from both beneficiaries and polluters.

This strategy therefore proposes means of addressing the above challenges by looking into additional funding from improved, more stringent domestic financing. This however would not be enough unless other sources are sought. This includes concessional funds like climate finance.

Persistent challenges exist in Tanzania affecting even the basin office with regard to inconsistent allocations of funds between water resources management and water supply services. In some areas, low financial burning rate and absorption capacity limit

Strategic Objective-3: Increase revenues internally generated in the basin

Actions:

- *Introduce cost recovery targets across other sectors.*
- *Review water tariff structures to reflect realistic economic value of water.*
- *Introduce/Strengthen economic policy instruments for water management (such as water abstraction or water pollution charges).*

Strategic Objective-4: Increase allocations of public budgetary resources to Wami-Ruvu Basin IWRM activities.

Actions

- *Assess the economic value of Wami-Ruvu waters contribution to GDP, and use it as a basis for requesting for higher public funding allocation*
- *Device means of incorporating public expenditures managed in water-related sectors (e.g., energy, agriculture, environment, urban development) into the basin water resources management activities.*
- *Carry out governance and policy reforms to facilitate evidence-based allocation of financial resources for supporting Water Governance activities*
- *Develop basin capacities for execution and management of allocated financial resources.*



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Strategic Objective-5: Mobilize additional resources from domestic private actors

Actions

- *Identify potential basin private sector actors/ investors*
- *Initiate open dialogue between the private and public sector actors in the basin to explore potential partnerships or financial relationships and transactions.*
- *Open dialogues with potential private investors in the water sector to identify the main barriers that prevent their involvement in basin investment initiatives (either by issuing loans, buying bonds, taking equity investments, or other mechanisms)*
- *Raise awareness among potential investors about the opportunities and responsibilities to invest in basin water governance.*
- *Develop capacities for showcasing investment opportunities and for entering into a dialogue with potential investors.*

Strategic Objective-6: Increase the amount of Financial Resources Mobilized from international Partners.

Actions

- *Identify new potential financial partners from the global water financing portfolio that are likely to align with the interest of the basin.*
- *Initiate a forum for promoting dialogue between the basin management and existing and new international financial partners to improve alignment of their support with basin objectives.*
- *Develop good quality proposals for water-related projects to mobilize climate financing*
- *Use government and donor funds better to catalyse commercial finance via blending (i.e., blending of Government finance or Donor Concessional finance with domestic commercial finance)*
- *Develop capacities for project preparation and for accessing blending finance which adequately allocate risks and returns across financiers, building on good international practices*

2.19 IMPLEMENTATION PLANNING OF STRATEGIC OBJECTIVES

For successful implementation of the proposed strategic objectives, potential leading and supporting actors for each of the objectives are identified as shown in Table 2.19.1.



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Table 2.19.1: Suggested Profile of Potential Leading & Supporting Actors for the Implementation of the Strategic Objectives

S/N Goal 1: Strengthen Basin Enabling environment to Improve Stakeholders Involvement			
S/N	Strategic Objectives	Leading actors	Supporting actors
1	Reformation of water investment legal framework (laws, policies and regulations) to be more supportive of private sectors involvement	Ministry of water WRBWB	Regional and local authorities Water service providers Water users
2	Integrate water financing considerations across water related sectors	Ministry of finance Ministry of water	Line ministries Regional and local authorities Water service providers Water users
Goal 2: Mobilizing additional and international financial resources			
3	Increase revenues internally generated in the basin	Ministry of water Legislative authorities Wami River basin authority	Regional and local authorities Water service providers
4	Increase allocations of public budgetary resources to Wami-Ruvu Basin IWRM activities.	Ministry of finance	Ministry of water Regional and local authorities
5	Mobilize additional resources from domestic private actors	Ministry of water Wami River basin authority	Water service providers Water Users



6	Increase the amount of Financial Resources Mobilized from international Partners.	Ministry of finance Wami River basin authority	Regional and local authorities
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2.20 CONCLUSION AND RECOMMENDATIONS

The Wami-Ruvu Basin Office has a number of goals that are aligned to implementation of IWRM. This Chapter has demonstrated the key targets and intervention areas that the basin intends to implement to the year 2030. The analysis presented in the section 4 also has demonstrated the efforts towards raising necessary funds for the implementation of these activities. However, the analysis in Section 4 shows that the implementation of IWRMDP Phase I (2020-2025) and Phase II (2026-2030) will require a total budget of USD 1,455 million. Meanwhile the current mobilization capacity is only 5.74% of the total required budget for implementation of Wami-Ruvu IWRMDP Phase I and Phase II.

Moreover, most of the financing initiatives have been shown to be biased towards supporting water supply and sanitation infrastructure developments and given less attention to water resources management activities. The potential of private sector is noted to be underutilized, such that commercial capital is still at its minimal.

The proposed strategic resource mobilization action plan for the Wami-Ruvu basin seeks to address these and other issues as elaborated in the Chapter. The action plan and its associated budget shows that there is a greater potential and room for more mobilization, especially through instruments like blended finance, etc.

It is recommended that a task force, with the mandate to oversee implementation of the proposed action plan, be formed, and if possible, work together with various stakeholders to make this strategy a success.



Table 2.20.1: Budget for Resources mobilization strategic action plan for achieving SDG 6.5.1 in Wami-Ruvu basin

(A) Goals	SN	(B) Strategic Objectives and Actions	(C) Expected Results /Outcomes	(D) Action Plan			(E) Budget Justification	(F) Indicative Budget (USD)		
				year 1	year 2			Action	Objective	Goal
1 Improve Basin Financial Enabling environment to Improve Stakeholders Involvement	1.1 Reformation of Basin water investment regulatory framework and Governance structures to be more supportive of private sectors involvement									
	i	<i>Review how the existing Legal Framework affects Private Sector Involvement in financing</i>	<i>Report on Legal Framework Review</i>				10-day Consultancy @ the rate of 350 USD per day	3500		
	ii	<i>Initiate open dialogue between the public and private sectors in basin on shortcomings of the existing legal and regulatory framework.</i>	<i>Stakeholder Engagement Report highlighting the views of both public and private sector on the strengths & limitations of legal and regulatory framework</i>				2 days Stakeholder Workshop & facilitation costs & report writing	10000	68250	124750
	iii	<i>Design new water investment Legal Framework that considers observations from the review and</i>	<i>Amended Legal & Regulatory Framework</i>				25-day Consultancy @ the rate of 350 USD per day	8750		



	<i>stakeholders' engagement.</i>								
iv	<i>Develop capacities for strategic financial planning in the basin.</i>	<i>Training Workshop Report on basin's strategic financial planning</i>					two sessions of a-5-days Training w/shop facilitation & organization	46000	
1.2 Integrate water financing considerations across water related sectors									
i	<i>Identify different sectors that benefit from or affect the sustainability of the management of the water resources in the basin.</i>	<i>An exhaustive list of benefiting water-related sectors</i>					Can be incorporated into routine basin activities	0	
ii	<i>Review existing strategies, policies and plans of the identified sectors on their flexibility and limitations for cross-sector coordination & planning with the Ministry of Water and Wami-Ruvu Basin Office.</i>	<i>Report on strategies, policies and plans of the identified sectors on their flexibility and limitations</i>					10-day Consultancy @ the rate of 350 USD per day	3500	56500
iii	<i>Identify appropriate instruments for mobilizing financial resources from the identified sectors so as to finance expenditures for</i>	<i>Proposed instruments for the mobilization of financial resources from identified list of sectors</i>					10-day Consultancy @ the rate of 350 USD per day	3500	



		<i>sustainable water management in the Wami-Ruvu basin.</i>									
	iv	<i>Conduct a collaborative assessment of multi-purpose infrastructure costs, risks and returns/benefits to different sectors which will form the basis for allocation of the same.</i>	<i>Report on the assessment of multi-purpose infrastructure costs, risks and returns/benefits to different sectors</i>					10-day Consultancy @ the rate of 350 USD per day	3500		
	vi	<i>Develop capacities for planning across the sectors relating to the basin water resource.</i>	<i>Report of the required capacities for planning across the sectors</i>					two sessions of a-5-days Training w/shop facilitation & organization	46000		
2 Mobilizing additional and international financial resources	2.3 Increase revenues internally generated in the basin										
	i	<i>Introduce cost recovery targets across other sectors.</i>	<i>Targets for cost recovery across other sectors</i>					20-day Consultancy @ the rate of 350 USD per day	7000		
	ii	<i>Review water tariff structures to reflect realistic economic value of water.</i>	<i>New water tariff structures that reflect realistic economic value of water</i>					4-day brainstorming session with relevant actors and partners	8300	25800	254700



	iii	<i>Introduce/Strengthen existing economic policy instruments for water management (such as water abstraction or water pollution charges).</i>	<i>New/improved policy instruments which show their economic strength for water management</i>					30-day Consultancy @ the rate of 350 USD per day	10500		
	2.4 Increase allocations of public budgetary resources to Wami-Ruvu Basin IWRM activities.										
	i	<i>Assess the economic value of Wami-Ruvu waters contribution to GDP, and use it as a basis for requesting for higher public funding allocation</i>	<i>Report that shows the economic contribution of Wami-Ruvu water to the GDP</i>					30-day Consultancy @ the rate of 500 USD per day	15000	91000	
	ii	<i>Devise means of incorporating public expenditures managed in water-related sectors (e.g., energy, agriculture, environment, urban development) into the basin water resources management activities.</i>	<i>Means of incorporating public expenditures managed in water-related sectors into the basin water resources management activities, means which clearly shows their benefits</i>					2-days Stakeholder Workshop & facilitation costs & report writing	10000		
	iii	<i>Carry out governance and policy reforms to facilitate evidence-based allocation of financial resources for supporting Water Governance activities</i>	<i>Reformed policies which have evidence of why higher allocation of financial resources is needed to the basin</i>					Lumpsum	20000		



	iv	Develop basin capacities for execution and management of allocated financial resources.	Developed capacities					two sessions of a-5-days Capacity building Training w/shop	46000		
	2.5 Mobilize additional resources from domestic private actors										
	i	Identify potential basin private sector actors/ investors	List of the actors/investors and their potential to the basin					Can be incorporated into routine basin activities	0	58500	
	ii	Initiate open dialogue between the private and public sector actors in the basin on their involvement in financing basin management activities.	A report showing specific actors and how each actor can be involved in financing the basin management activities					2-days Stakeholder Workshop & facilitation costs & report writing	10000		
	iii	Open dialogues with potential private investors in the water sector to identify the main barriers that prevent their involvement in basin investment initiatives (either by issuing loans, buying bonds, taking equity investments, or other mechanisms)	List of potential private investors, main barriers for each investor, how the barriers hinder their involvement in basin investment initiatives, and suggestions on how each barrier can be removed/reduced.					2-days Stakeholder Workshop & facilitation costs & report writing	10000		



	iv	Raise awareness among potential investors about the opportunities and responsibilities to invest in basin water governance.	A report showing what are the investment opportunities and responsibilities the investors have in basin water governance, and how to raise awareness to the investors					Lampsum	15000		
	v	Develop capacities for showcasing investment opportunities and for entering into a dialogue with potential investors.	Developed capacities					two sessions of a-5-days Training w/shop facilitation & organization	23500		
	2.6 Increase the amount of Financial Resources Mobilized from international Partners										
	i	Identify new potential financial partners from the global water financing portfolio that are likely to align with the interest of the basin.	Report showing a list of new financial partners, their potentiality to the basin, and suggestions on means of engaging them					2-day brainstorming session	4400		
	ii	Initiate a forum for promoting dialogue between the basin management and existing and new international financial partners to improve alignment of their support with basin objectives.	A forum which will promote the required dialogue					2-days Stakeholder Workshop & facilitation costs & report writing	10000	79400	



	iii	<i>Develop good quality proposals for water-related projects to mobilize climate finance</i>	<i>Bankable proposals for water-related projects to mobilize climate finance for the implementation IWRM related activities</i>					2-day Brainstorming sessions & 7 days writing workshop involving key personnel in the basin	41500		
	iv	<i>Develop capacities for project preparation and for accessing blending finance which adequately allocate risks and returns across financiers, building on good international practices</i>	<i>Developed capacities for these tasks</i>					two sessions of a-5-days Training w/shop facilitation & organization	23500		
TOTAL BUDGET									379450		



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CHAPTER 3.

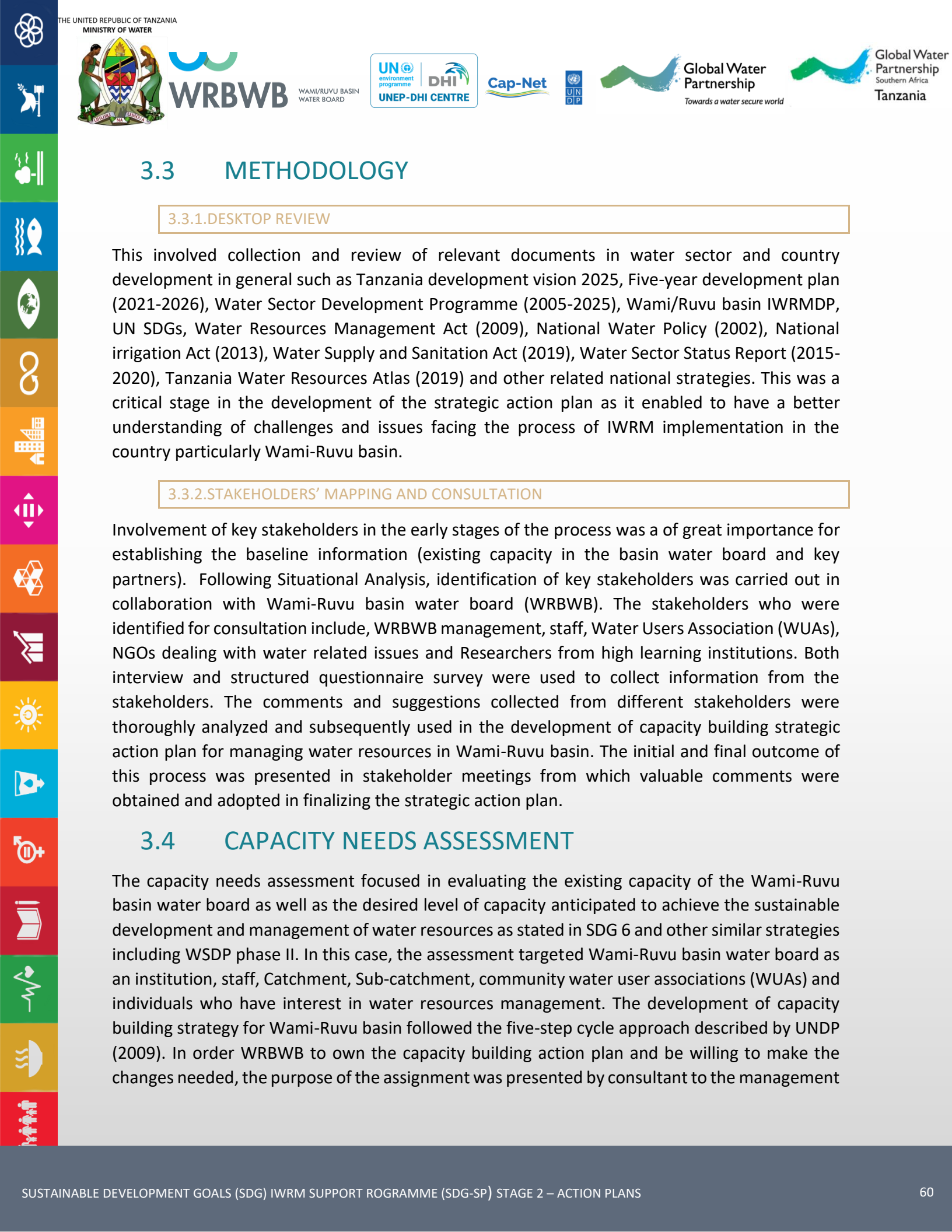
CAPACITY BUILDING STRATEGY TO ADVANCE IMPLEMENTATION OF IWRM IN WAMI-RUVU BASIN

3.1 RATIONALE OF DEVELOPING CAPACITY BUILDING STRATEGIC ACTION PLAN FOR WAMI RUVU BASIN

The need for developing the capacity building strategic action plan is to support the existing government efforts towards implementation of IWRM plan in Wami-Ruvu basin. The development of capacity building action plan requires comprehensive participation of key stakeholders to establish challenges and opportunities surrounding IWRM implementation process. The development of capacity building action plan together with other action plans (resource mobilization, knowledge management and exchange, and monitoring and evaluation) are augmenting to the national water resources management priorities and SDGs targets. Ultimately, the implementation of the plan will contribute to overall national socio-economic development and SDGs targets including SDG 6.5 by 2030.

3.2 OBJECTIVES OF THE STRATEGIC ACTION PLAN

The general objective of developing a strategic action plan for capacity building in Wami-Ruvu basin was a response to integrated water resources management (IWRM) challenges as elaborated in Chapter 1.



3.3 METHODOLOGY

3.3.1. DESKTOP REVIEW

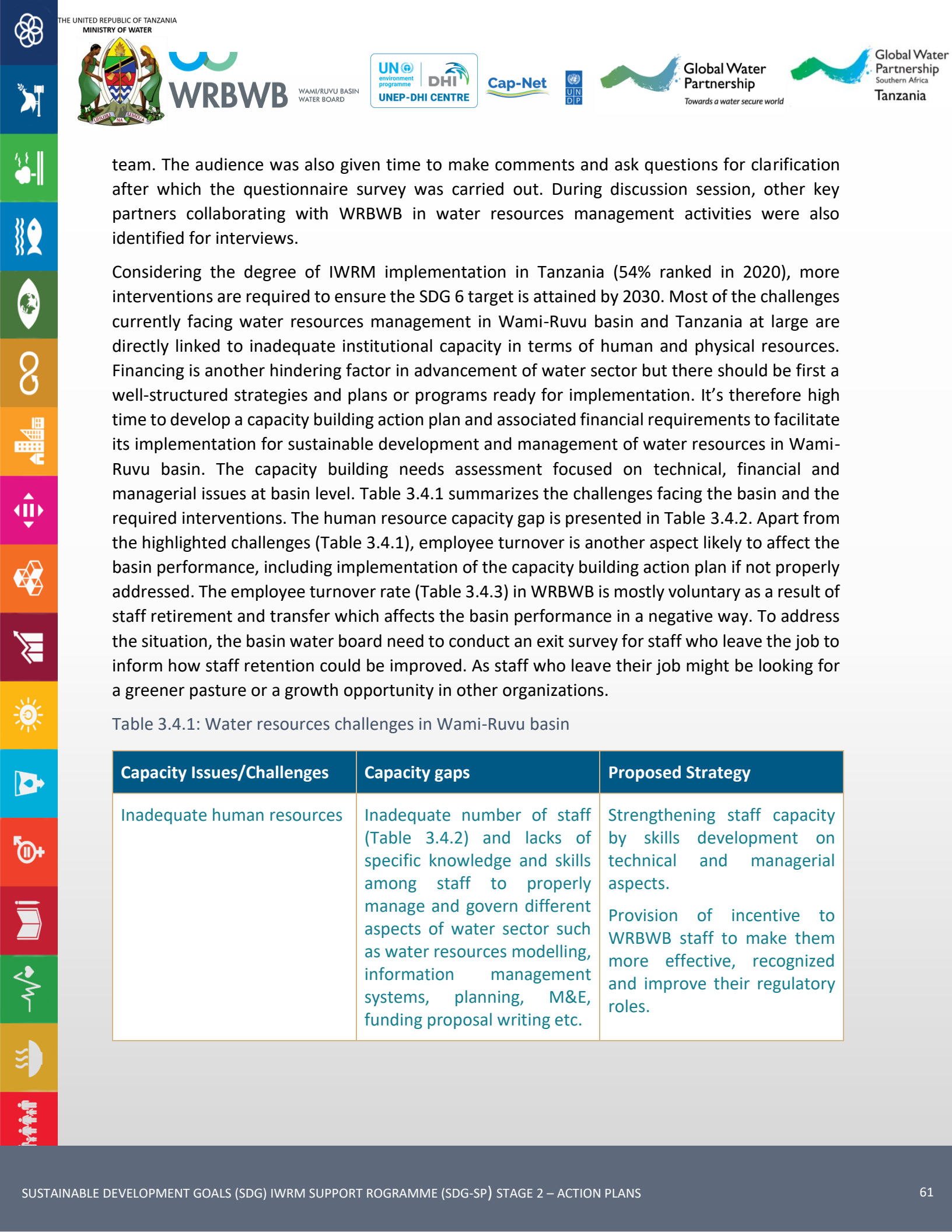
This involved collection and review of relevant documents in water sector and country development in general such as Tanzania development vision 2025, Five-year development plan (2021-2026), Water Sector Development Programme (2005-2025), Wami/Ruvu basin IWRMDP, UN SDGs, Water Resources Management Act (2009), National Water Policy (2002), National irrigation Act (2013), Water Supply and Sanitation Act (2019), Water Sector Status Report (2015-2020), Tanzania Water Resources Atlas (2019) and other related national strategies. This was a critical stage in the development of the strategic action plan as it enabled to have a better understanding of challenges and issues facing the process of IWRM implementation in the country particularly Wami-Ruvu basin.

3.3.2. STAKEHOLDERS' MAPPING AND CONSULTATION

Involvement of key stakeholders in the early stages of the process was a of great importance for establishing the baseline information (existing capacity in the basin water board and key partners). Following Situational Analysis, identification of key stakeholders was carried out in collaboration with Wami-Ruvu basin water board (WRBWB). The stakeholders who were identified for consultation include, WRBWB management, staff, Water Users Association (WUAs), NGOs dealing with water related issues and Researchers from high learning institutions. Both interview and structured questionnaire survey were used to collect information from the stakeholders. The comments and suggestions collected from different stakeholders were thoroughly analyzed and subsequently used in the development of capacity building strategic action plan for managing water resources in Wami-Ruvu basin. The initial and final outcome of this process was presented in stakeholder meetings from which valuable comments were obtained and adopted in finalizing the strategic action plan.

3.4 CAPACITY NEEDS ASSESSMENT

The capacity needs assessment focused in evaluating the existing capacity of the Wami-Ruvu basin water board as well as the desired level of capacity anticipated to achieve the sustainable development and management of water resources as stated in SDG 6 and other similar strategies including WSDP phase II. In this case, the assessment targeted Wami-Ruvu basin water board as an institution, staff, Catchment, Sub-catchment, community water user associations (WUAs) and individuals who have interest in water resources management. The development of capacity building strategy for Wami-Ruvu basin followed the five-step cycle approach described by UNDP (2009). In order WRBWB to own the capacity building action plan and be willing to make the changes needed, the purpose of the assignment was presented by consultant to the management



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team. The audience was also given time to make comments and ask questions for clarification after which the questionnaire survey was carried out. During discussion session, other key partners collaborating with WRBWB in water resources management activities were also identified for interviews.

Considering the degree of IWRM implementation in Tanzania (54% ranked in 2020), more interventions are required to ensure the SDG 6 target is attained by 2030. Most of the challenges currently facing water resources management in Wami-Ruvu basin and Tanzania at large are directly linked to inadequate institutional capacity in terms of human and physical resources. Financing is another hindering factor in advancement of water sector but there should be first a well-structured strategies and plans or programs ready for implementation. It's therefore high time to develop a capacity building action plan and associated financial requirements to facilitate its implementation for sustainable development and management of water resources in Wami-Ruvu basin. The capacity building needs assessment focused on technical, financial and managerial issues at basin level. Table 3.4.1 summarizes the challenges facing the basin and the required interventions. The human resource capacity gap is presented in Table 3.4.2. Apart from the highlighted challenges (Table 3.4.1), employee turnover is another aspect likely to affect the basin performance, including implementation of the capacity building action plan if not properly addressed. The employee turnover rate (Table 3.4.3) in WRBWB is mostly voluntary as a result of staff retirement and transfer which affects the basin performance in a negative way. To address the situation, the basin water board need to conduct an exit survey for staff who leave the job to inform how staff retention could be improved. As staff who leave their job might be looking for a greener pasture or a growth opportunity in other organizations.

Table 3.4.1: Water resources challenges in Wami-Ruvu basin

Capacity Issues/Challenges	Capacity gaps	Proposed Strategy
Inadequate human resources	Inadequate number of staff (Table 3.4.2) and lacks of specific knowledge and skills among staff to properly manage and govern different aspects of water sector such as water resources modelling, information management systems, planning, M&E, funding proposal writing etc.	Strengthening staff capacity by skills development on technical and managerial aspects. Provision of incentive to WRBWB staff to make them more effective, recognized and improve their regulatory roles.



Capacity Issues/Challenges	Capacity gaps	Proposed Strategy
Low institutional capacity	<p>WUAs, CWC and SCWC are still few and incapable to discharge their duties.</p> <p>Insufficient funds to establish more WUAs, catchment and sub-catchment committees.</p>	<p>Formulation and strengthening of water management institutions at basin level</p>
Uncontrolled water resources development and illegal abstraction	<p>Low level of awareness and stakeholder participation and collaboration.</p> <p>Lack of institutional coordination.</p> <p>Lack of water saving technologies.</p>	<p>Formulation and Implementation of an integrated water management system.</p> <p>Increase Public Awareness of their Participatory Roles and Responsibilities.</p> <p>Strengthening water governance system in the catchment, sub-catchment.</p>
Limited knowledge of present and future water availability and demand management	<p>Lack of proper water allocation mechanisms and infrastructures.</p> <p>Lack of technical support for water resources modelling.</p>	<p>Strengthen the capacity to understand water cycle and modelling of water resources</p> <p>Skills development on water allocation and demand management.</p>
Response to water-related disasters is still slow due to lack of co-ordinations among key players in disaster response as well as unavailability of relevant information on time	<p>Lack of appropriate infrastructure e.g., storage reservoirs.</p> <p>Inadequate knowledge on prediction, forecasting and warning systems.</p> <p>Lack of community preparedness to cope with extreme weather events (droughts and floods).</p>	<p>Determination and establishment of extreme events mitigation measures (risk reduction and emergency management).</p> <p>Establishment of drought early warning system.</p> <p>Increase public awareness on the roles of extreme events mitigation measures.</p>



Capacity Issues/Challenges	Capacity gaps	Proposed Strategy
		Stakeholder participation programmes and technical trainings
Water use competition and conflicts between upstream and downstream users	Inadequate funds for water resources development, research, training, and workshops. Lack of public knowledge on how to sustainably resolve conflicts.	Strengthening stakeholder involvement. Capacity Building and awareness raising. Develop water infrastructures.
Data scarcity and monitoring stations insufficiency	Insufficient training programs for operators and technicians. Lack of technical support for monitoring stations. Inadequacy of financial support for the monitoring system. Insufficiency of standards, and guidelines for acquiring and installation of monitoring system. Lack of an Efficient System for information storing, processing, management and sharing.	Strengthen the capacity to collect, store, process, and disseminate hydro-meteorological data (quantity and quality) Skills development and career advancement (capacity enhancement)
Pollution of both surface water and groundwater sources	Lack of correct understanding and awareness on water quality and pollution issues. Lack of funds for water quality monitoring system. Inadequate financial, technical, and human resources for implementing	Ensure availability of good water quality to foster sustainable national economic and social development. Formulation and strengthening institution capacity at basin level in water resources monitoring.



Capacity Issues/Challenges	Capacity gaps	Proposed Strategy
	effective waste management and water sanitation policies.	Increase public awareness on water management issues.
Insufficient maintenance of instrumentations	Lack of adequate training, both technical and organizational, and commitment for a sustainable operation. Limited financial resources.	Knowledge to implement O&M Community participation in O&M activities
Lack of reliable data	Insufficient training programs for operators and technicians. Lack of technical support for hydro-climatological stations Inadequacy of financial support for the monitoring system. Insufficiency of Standards, and Guidelines for acquiring and installation of Monitoring System Lack of an Efficient System for information storing, processing, management and sharing	Strengthen the capacity to collect, store, process, and disseminate hydro-meteorological data (quantity and quality) Skills development and career advancement (capacity enhancement)
Water scarcity	Lack of water infrastructures for storage. Inadequate knowledge on climate change issues.	Strengthening staff capacity on climate change issues and water demand management
Inadequate financing	Reluctance and delays in paying water use fee. Inefficiency collection of water use fee. Limited sources of financing.	Develop and implement resource mobilization strategy. Raise awareness to water users on the importance of timely paying water use fees.



Capacity Issues/Challenges	Capacity gaps	Proposed Strategy
	Low level of awareness among water users.	Diversifying the funding mechanism/sources. Developing mechanisms that will ensure effective enforcement of the established protocols including tariffs.
Insufficient water infrastructures	Lack of reliable designs for infrastructures Low technical knowledge to construct infrastructures	Formulation and Implementation of an integrated water management system. Strengthening staff capacity on design, construction and operation of water infrastructures.
Issues on Control and Management of Water Use	Low level of awareness and stakeholder participation and collaboration. Lack of institutional coordination. Lack of water saving technologies.	Formulation and Implementation of an integrated water management system. Increase Public Awareness of their Participatory Roles and Responsibilities. Strengthening water governance system in the catchment, sub-catchment.
Inadequate working facilities	Inadequate office facilities e.g., computers. Unreliable transport facilities to facilitate the implementation of activities such as monitoring and data collection	Improve working environment through rehabilitation and construction of office buildings and provision of furniture, transport and office equipment and tools



Table 3.4.2: Human Resource Capacity Gap at Wami-Ruvu Basin Water Board

SN	Field/Expertise	Required	Available	Shortage/gap
1	Water officer	1	1	0
2	Human resource officer	2	1	1
3	Personal secretary	3	1	2
4	Record Management	2	1	1
5	Hydrologist	3	3	0
6	hydrogeologist	6	6	0
7	Hydrology technician	23	23	0
8	Hydrogeology technician	10	6	4
9	Engineer	6	6	0
10	Community development officer	8	8	0
11	Environmental officer	3		3
12	Environmental engineer	2	1	1
13	Legal officer (Lawyer)	1		1
14	Accountant	6	4	2
15	Procurement officer	6	3	3
16	Assistant procurement officer	2	2	0
17	ICT expert	1		1
18	Laboratory technician	8	4	4
19	Chemist	1		1

20	Driver	6		6
21	Office assistant	1		1
Total		101	70	31 (30.7%)

Table 3.4.3: Wami-Ruvu Basin Water Board Employee Turnover Rate (2019-2022)

Year	Employee Left the Job			Number of Employees	Annual Employee Turnover Rate (%)
	Transfer	Retired	Total		
2019	3		3	65	4.6
2020	1	2	3	67	4.5
2021	3	7	10	67	14.9
Jan. & Feb. 2022		3	3	70	4.3

3.5 CAPACITY BUILDING STRATEGY

Timely attainment of water resources management objectives through addressing existing challenges at basin level depends largely on proper implementation of the proposed strategies. These strategies are in line with national policies and current priorities in water sector. The strategies considered in this report are derived from IWRMDP implementation strategies and action plan report for Wami-Ruvu basin specially those addressing the capacity enhancement issues.

3.5.1. STRATEGY 1: STRENGTHEN THE CAPACITY TO COLLECT, STORE, PROCESS, AND DISSEMINATE HYDRO-METEOROLOGICAL DATA (QUANTITY AND QUALITY)

The availability and credibility of scientific data is fundamental in planning, managing and sustainable utilization of water resources in the current climate stressed environment. Wami-Ruvu basin still has high surface and groundwater potentials if proper planning which is informed by reliable data is considered. However, it has been reported that there are huge discrepancies in area of data management including acquisition, collection, analysis, retrieving and reporting. During capacity building needs assessment exercise, respondents expressed their concerns on the quality of available data. The data (hydrological, hydrogeological, meteorological, and water quality) lacks continuity as they have serious gaps and densities of monitoring stations is also



insufficient i.e., some of the catchments are not well represented. It is also reported in Wami-Ruvu basin IWRMDP that data has not been utilized adequately due to some challenges relevant to observation, monitoring and the data storage systems such as unreliable data collection, long period discontinuation and improper maintenance of observation equipment. Some of the interventions which were recommended in Wami-Ruvu IWRMDP in the area of data collection and management include;

- Develop Standard, Specification, and Guidelines for acquiring and installation of monitoring system
- Enhance water resources assessment capabilities and measurement networks;
- Strengthen the water resources assessment and monitoring system, including establishing the baseline situation;
- Establish water resources databases and develop mechanisms for acquiring water use and water demand information from water users;
- Device an efficient system for information storing, processing, management and sharing;
- Train Technicians to operate, organize and maintain the system appropriately;
- Promote the use of data for water resource management decision-making; and
- Define broad goals and long, medium and short-term objectives for the basin.

3.5.2. STRATEGY 2: INCREASE STAKEHOLDER AWARENESS OF THEIR PARTICIPATORY ROLES AND RESPONSIBILITIES

Awareness raising to all stakeholders including local communities, private sector, government institutions and decision-makers is a crucial prerequisite for the implementation of IWRMDP and the success for capacity building interventions. Without the support of political authorities, decision-makers and senior officials, the required organizational changes will not be attained. Therefore, in order to achieve the SDG 6.5 target by 2030, raising awareness at all levels on the importance of IWRMDP implementation must be assigned the highest priority and respective capacity building interventions be executed accordingly.

Successful implementation of the IWRMDP will mainly depend on the level of stakeholders' engagement. It ensures that the views of all those who have interest in water are presented and taken into account in water management as well as their capacities enhanced. Through stakeholders' consultation the following were suggestion on how to improve and enhance stakeholders' participation in water resources management activities;

- Prepare and operationalize proper guidelines on the engagement of stakeholders
- Increase number of stakeholders meeting/seminar
- Establishment of more WUAs and catchment/sub-catchment committees
- MoU between Wami-Ruvu basin and key stakeholders to ensure sustainable implementation of agreed plans
- Public awareness on the importance of water resources management



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- Strengthen coordination among government agencies and other stakeholders involved in management of water resources

Additionally, Wami-Ruvu basin IWRMDP identified various strategies for stakeholders' participation which are in line with objectives of National Water Policy and other related country strategies such as WSDP II. These include;

- Establish appropriate mechanisms for involving stakeholders in the planning, provision and implementation of services;
- Increase stakeholder awareness of their new participatory roles and responsibilities;
- Encourage dialogue between stakeholders including Non-Governmental Organizations and Community Based Organizations;
- Raise awareness on advantages of establishment and on operations of Water User Associations at local, sub-catchment and catchment levels;
- Define an organizational framework for viable local catchment water user organizations to promote the involvement of women and youth in water resources management at all levels;
- Identify special interests and training and capacity building needs of the different groups in the management of water resources in the basins;
- Undertake Monitoring and Evaluation Activities related to Awareness Level.

3.5.3. STRATEGY 3: SKILLS DEVELOPMENT AND CAREER ADVANCEMENT (CAPACITY ENHANCEMENT)

According to Wami-Ruvu basin IWRMDP and findings of this study, lacks specific knowledge and skills among staff to properly manage and govern different aspects of water sector was reported. Some of the identified areas which needs capacity enhancement include water resources modelling, information management systems, planning, M&E, funding proposal writing etc. Under the current climate changing scenarios, a good understanding of the water cycle, quantitative skills to estimate water availability and water demand are essential to properly implement IWRMD plans. The basin water board has professional and technical staff, but their number is not high as compared to the size of the basin and it affects the monitoring efficiency of water resources and other IWRMD plans. It is also reported that senior experts including managers have an appropriate knowledge about water practices, while they should be trained on new technologies and skills for governing water resources.

3.5.4. STRATEGY 4: STAFF EXCHANGE AND MENTORING FOR CAPACITY ENHANCEMENT

Apart from conventional training, normally designed to provide specific skills and knowledge, staff exchange and mentoring activities are vital in developing human capacities for effective organization performance. Establishing relationship and collaboration with other basin water boards across the country will enable the organization and individuals to access resources, exchange skills and knowledge, address shared issues in an effort to build human capacity. This



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process triggers a gradual change, guided by experience and practice, but it is natural and transforming, an action-learning process. Experience is built through exposing staff in different working environment and interacting with others by doing and practicing. The exchange program must be a continuous process and not merely a single event to ensure long term transformation of basin water board in terms of both technical and leadership skills. However, organizational commitment to capacity building and management styles that support effective exchange program is a prerequisite. Moreover, mentorship should be given more weight as internal organization capacity building strategy. It is regarded as a process for the informal transmission of knowledge, social capital, and the psychosocial support perceived by the recipient as relevant to work, career, or professional development.

Through stakeholders' consultation the following interventions were identified on how to strengthen human capacity in water resources management activities;

- Establish appropriate mechanisms for staff exchange program and equipment between basin water boards
- Create favorable working environment to attract skilled staff from other organizations
- Promote mentorship for junior staff

3.6 CAPACITY BUILDING ACTION PLAN

Based on the findings of this study, IWRMDP report for Wami-Ruvu basin and stakeholders' consultation, six (6) areas were selected for development of capacity building action plan (Table 3.6.1) for Wami-Ruvu basin. These include skills development (human capacity), Data collection and management, Operational equipment and support in installation and maintenance of monitoring stations, awareness and stakeholders' engagement (management, protection and conservation), incentive to staff, Infrastructure for water resources development and management (design, construction, operation and maintenance) and water demand assessment and management. Additionally, staff exchange program between basin water boards and mentoring activities are considered for enhancing experience and strengthening human capacities. However, upon implementation of this action plan, WRBWB must find better ways to increase employee retention in order to realize its outcome.



Table 3.6.1: Capacity building action plan implementation matrix

Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
Knowledge and skills development	WRBWB staff have appropriate knowledge and skills to manage and govern different aspect of water sector	Lack of appropriate skills and knowledge on applying new technologies for addressing emerging water management issues	i. Train technical staff on water resources monitoring equipment and computer software (AQUARIUS, GIS & RS, DSS etc.) ii. Train technical staff on water resources modelling (MODFLOW & StreamStats) and water resources management systems iii. Train Senior staff (managers and heads of units/sections) on planning and M&E, funding proposal writing, procurement and contract management	Number of technical and senior staff trained on specified areas. Availability of water resources management computer software and models	WRBWB staff	√	√	√	√	√	239.20
Data management	There are reliable data (hydrological, meteorological and	Discrepancies in data management ranging from acquisition,	i. Train staff on development of standard operating	Number of SOPs developed	WRBWB staff, WUAs, CWC, SCWC	√	√	√	√	√	143.52



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Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
and monitoring stations	hydrogeological) for proper planning, managing and sustainable utilization of water resources in the current climate stressed environment	collection, analysis, retrieving and reporting. The data lacks continuity as they have serious gaps and densities of monitoring stations is also insufficient.	procedures (SOPs) and use of modern automated monitoring stations and equipment in water resources management ii. Train staff on skills related to proper data management (collection, analysis, storage and dissemination at different levels) iii. Train technical staff on how to use water resources information management system for easy access and retrieval of data	and applied. Information management system in place and operational. Number of staff trained							



Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
Awareness and Stakeholders' engagement	<p>The public is appropriately informed about the IWRM framework and involved in decision-making on the water sector priorities and United Nations SDG 6.5 target.</p> <p>There are clear procedures/mechanisms on engaging stakeholders and awareness raising</p>	<p>Some of the key stakeholders in water sector including LGAs do not understand the concept of IWRM and how their sectors are linked to water resources.</p> <p>Stakeholders also believe water is still considered as a freely available, freely exploitable resource, irrespective of the scale, nature or purpose of exploitation/utilization.</p>	<p>i. Train senior staff on advocacy and how to make different IEC & SBCC materials such as infographics, flyers, leaflets, brochures, social media posts, television adverts, audio spots for radio, posters, face book page etc.</p> <p>ii. Train WUAs, WUGs, CWC, SCWC and other community groups on how to properly conduct awareness raising and engagement of stakeholders at different levels.</p>	<p>Number of staff trained including WUAs, CWC, SCWC.</p> <p>Type and quality of IEC & SBCC materials prepared.</p>	WRBWB staff, WUAs, CWC, SCWC and NGOs	√	√	√	√	√	71.76



Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
Infrastructure for water resources development and management	Resilient water infrastructures are in place for developing and managing water resources under climate dynamic environment	Water availability is constantly changing, and the situation is uncertain due to recurrence of extreme weather events (severe droughts and floods) which results into water scarcity. To avert the water scarcity problem which is more critical during prolonged drought, more resilient water infrastructure need to be planned and established.	i. Train technical staff on design, operation and maintenance of water infrastructures which are resilient to climate change as well as support in installation and maintenance of monitoring systems. ii. Train technical staff and community-based organizations on water infrastructure safety management.	Number of technical staff (engineers and scientists) trained. Prepared safety manuals.	WRBWB staff and community-based organizations	√	√	√	√	√	71.76
Water demand assessment and Management	There are clear procedures for water demand assessment, management and allocation among competing users	Existence of competition and conflicts over the use water resources among different sectors or users calls for proper water demand assessment and management. The situation is attributed by inadequate knowledge/skills and	i. Training on Sectoral Water Demand assessment in agriculture, Urban, Rural and industrial sectors. ii. Training of the staff members responsible for examination, issuance and monitoring of permits in	Number of staff trained including WUAs, CWC, SCWC and UWASAs. Number of efficient water-use technologies adopted.	WRBWB staff, WUAs, CWC, SCWC, farmers and UWASAs	√	√	√	√	√	95.68



Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
		lack of water infrastructures e.g., reservoirs, flow measurement devices for water allocation and lack of water saving technologies	order to enhance their capacities to verify applied volume of water abstraction for different uses iii. Hands on training for water users and WUAs/WUGs in monitoring, recording and reporting of water abstraction and efficient water use technologies iv. Promote understanding of irrigation efficiency technologies and water productivity improvement among WRBWB staff and farmers								
Staff exchange and mentoring for capacity enhancement	WRBWB staff have experience in both technical and managerial aspects	Lack of experience and competence in handling technical and managerial issues	i. Staff exchange with other organizations (basin water boards)	Number of staff participated in exchange program and	WRBWB staff, WUAs, CWC, SCWC	√	√	√	√	√	190.00



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Capacity Area	Capacity Required	Capacity Assessment Findings	Capacity Building Actions	Progress indicators	Responsible	Timeline (Year)					Costs Tsh. (Million)
						1	2	3	4	5	
			ii. Promote and support mentorship among junior and senior staff iii. Hands on training	mentoring activities							
TOTAL BUDGET (TZS)											811.92

Note: The action plan will be implemented in five years (2023 – 2028) period. Total of 130 staff will be trained in different aspects with average of 26 staff each year. Whereas 50 staff will participate in exchange program for a maximum of 30 days each. The total budget includes training fees and other costs (30%) which covers equipment/software and coordination. The training fee is estimated to TZS 3,680,000 per trainee for a two-week short course.



3.7 COSTS OF IMPLEMENTING CAPACITY BUILDING ACTION PLAN

The costs for implementing this action plan are based on the proposed interventions and the outputs to be achieved, timeframe, roles and responsibilities. Since capacity building is an iterative process i.e., after or during implementation stage, some adjustment may be necessary based on the lesson learnt and can affect the cost in either way. The total estimated costs for implementing the action plan for five years period is TZS 811,920,000.

3.8 CONCLUSIONS

Wami-Ruvu basin has made significant progress in IWRM implementation specially in the area of enabling environment whereby legal and institution framework have been operationalized. However, the water sector is still facing inadequate institutional capacity in terms of human resources and physical resources to implement IWRMD plan.

There is lack of sufficient data to support water resources management actions. Major constraints for monitoring of water quantity and water quality parameters are the inadequate financial resources allocated for water resources management activities in the government budgets and even the little amount is not timely disbursed.

Despite inadequate number of staff in basin water board, they are not equipped with new skills and knowledge through regular trainings for handling emerging water resources management issues.

The level of stakeholders' participation in planning, decision making, and management of water resources is still low due to lack of awareness and inadequate institution capacity.

Water use conflicts between upstream and downstream users are mainly due to improper water allocation as a result of lack of monitoring infrastructure and lack of enough staff to overseeing such operation.

Urbanization due to rapid population growth and climate change are likely to increase pressure in water resources management and may lead into water scarcity in the basin

Upon Implementation of the proposed solutions in this capacity building action plan together with other plans (resource mobilization, monitoring and evaluation, and knowledge management), IWRM implementation will speed up and achievement of SDG 6.5 target by 2030 is possible.



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CHAPTER 4. KNOWLEDGE MANAGEMENT STRATEGY FOR ENHANCING IMPLEMENTATION OF IWRM IN WAMI-RUVU BASIN

4.1 INTRODUCTION

Knowledge management is the systematic coordination of an organization's information and knowledge assets for the purpose of creating value and meeting tactical and strategic requirements. It consists of the initiatives, processes, strategies, and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge. According to Emil Hajric (2018) in the book *Theoretical and Practical Guide for Knowledge Management in Your Organization*, Knowledge management is about getting the right knowledge to the right person at the right time.² This may not seem so complex, but it implies a strong tie to corporate strategy, understanding of where and in what forms knowledge exists, creating processes that span organizational functions, and ensuring that initiatives are accepted and supported by organizational members. Knowledge management may also include new knowledge creation, or it may solely focus on knowledge sharing, storage, and refinement. UN agency specialized in agriculture, the International Fund for Agricultural Development (IFAD) defines Knowledge Management as a set of processes, tools, behaviour that connect and motivate people to generate, use and share good practices, learning and expertise to improve efficiency of an organization.³ Knowledge Management is also defined as a collaborative learning

²Emil Hajric; 2018: *A Theoretical and Practical Guide for Knowledge Management in Your Organization*

³ IFAD Knowledge Management Strategy for the period 2019-2025 available through link: https://www.ifad.org/documents/38711624/39417933/km_e.pdf/43599c5a-9a6c-4ff7-9299-e992aa4b9d24?t=1565366873000



process through which insights and experiences are exchanged, analysed, and put into practice. Such a process is aimed at incentivizing action and achieving impact through a deeper understanding of relevant issues, strengthened institutional and programme results, and influence on policy-making and global debates. Knowledge management as practice is old. Knowledge and experience have always been informally and formally passed on to the recipients in different forms—meetings, trip reports, workshops, project reports. There are various ways of ‘documenting’ knowledge; both modern and traditional. For example, throughout the history, storytelling has played a great role in knowledge sharing. Basically, this is what is being done by Wami-Ruvu Basin and other IWRM institutions. For example, the Lake Tanganyika Basin Water Office’s 2010 Capacity Development Plan indicate Study tours/ field visits as a common means used to increase the knowledge and awareness of IWRM and its practical implementation to solve water management issues. Study tours/ field visits provide platform for knowledge harvesting and sharing.⁴

Knowledge management (KM) therefore implies a strong tie to organizational goals and strategy, and it involves the management of knowledge that is useful for some purpose, and which creates value for the organization. Expanding upon the previous knowledge management definition, KM involves the understanding of: Where and in what forms knowledge exists; what the organization needs to know; how to promote a culture conducive to learning, sharing, and knowledge creation; how to make the right knowledge available to the right people at the right time; how to best generate or acquire new relevant knowledge; how to manage all of these factors so as to enhance performance in light of the organization's strategic goals. KM must therefore create/provide the right tools, people, knowledge, structures, culture, etc. to enhance learning; it must understand the value and applications of the new knowledge created; it must store this knowledge and make it readily available for the right people at the right time; and it must continuously assess, apply, refine, and remove organizational knowledge in conjunction with concrete long and short-term factors. From this knowledge management definition, it is possible to see that it depends upon the management of the organization's knowledge creation and conversion mechanisms; organizational memory and retrieval facilities; organizational learning; and organizational culture. All these concepts mentioned in this section were thought through when conducting the situational analysis.

4.2 TYPES OF KNOWLEDGE

There are two types of knowledge, namely: explicit and tacit knowledge. Explicit knowledge is knowledge that has been documented as tasks and procedures, including reports, processes, and policy manuals. This type of knowledge is also comparatively easy to record, quantify and express. On the other hand, tacit knowledge is unwritten knowledge that resides in the heads of

⁴The Lake Tanganyika Basin Water Office’s 2010 Capacity Development Plan



the workers. It is commonly known as “know-how.” Tacit knowledge is also important and valuable to the organization. Tacit knowledge is the most difficult to retain because it has not been explicitly written or articulated by the individual to others.

Indigenous Knowledge: It refers to understandings, skills and philosophies developed by local communities with long histories and experiences of interaction with their natural surroundings. According to Wikipedia traditional knowledge, indigenous knowledge and local knowledge generally refers to knowledge systems embedded in the cultural traditions of regional, indigenous, or local communities.⁵ In this case it is important to capture and share indigenous knowledge that exist on water resources governance. It is a fact that different communities, tribes have own indigenous knowledge on the subject. Such knowledge can be documented and shared through various sharing platforms.

4.3 PURPOSE AND RATIONALE FOR KNOWLEDGE MANAGEMENT AND EXCHANGE STRATEGIC ACTION PLAN

Wami-Ruvu Basin Water Board (WRBWB) is mandated with the management of water resources in the Wami-Ruvu basin with an objective to provide for current and future water resources needs in the basin while also protecting the environment and water resources. However, there are several challenges that need to be addressed in the basin to achieve a desirable water future. The basin has developed Integrated Water Resources Management Development (IWRMD) plan. IWRMD plan is a multi-sector and multi objective plan to address problems leading to unsustainable management and development of water resources and provide the road map for rationally managing and developing water resources for multi-sectoral needs while maintaining ecosystem integrity. For various users and stakeholders to participate in the implementation of the interventions proposed in the IWRMD plan, awareness has to be created and information in various forms of knowledge products need to be communicated to all relevant groups. Therefore, generating knowledge and sharing lessons learnt among different stakeholders is crucial to increased awareness of various issues on water resources management. To achieve this a Knowledge Management & Exchange Action Plan is required. This knowledge Management and exchange strategic action plan for Wami-Ruvu river basin focus on key knowledge Management issues by analyzing the current situation that prevails within the Basin. It helps to highlight key capacity gaps in knowledge Management such as lack of technical skills in knowledge Management and insufficient financial resources to implement knowledge Management activities. Another issue is on Knowledge Management infrastructure includes WRBWB information technology infrastructure, its organization culture, structure as well as the managerial aspect such as senior management commitment in knowledge management. The Knowledge Management Action plan aims at strengthening the capacity of river basins to manage knowledge and strengthen relationships. Likewise, it is intended to help the river basin reduce knowledge silos, connect people, and increase collaboration at all levels. It helps in

⁵ Wikipedia



addressing key issues how the river basin and other IWRM institutions can generate, acquire, synthesize, share, use and re-use knowledge from internal and external sources, and how the available knowledge on IWRM activities implementation can be transformed to achieve the Sustainable Development Goal 6.5.1 by 2030. To achieve this a Knowledge Management & Exchange Action Plan is required in order to help the Basin

- I. Operationalize Knowledge Management and Exchange activities
- II. Define which individuals or groups to influence (target audience) through use of knowledge products to be developed
- III. Determine key strategic knowledge management actions
- IV. Measure Knowledge Management & Exchange actions results (evaluation).

4.4 TARGET AUDIENCE FOR KNOWLEDGE PRODUCTS

Identification of audience to be targeted is important. The audience has the power to deliver the change the strategy is seeking to achieve such as implementing the IWRMDP, enhancing knowledge on sustainable land use and water resources management, changing individual lifestyle, behaviors, and practices. The categories of audiences to be targeted during operationalization of knowledge management action plan are outlined below:

- **Politicians at all levels:** MPs, councilors, village chairpersons; these can encourage and facilitate community involvement in the implementation of WRM policies and strategies. Most of these have little knowledge on WRM. Therefore, they should be sensitized on issues related to water resources and environmental management.
- **National level (Government technocrats):** Ministries, Departments and Agencies (MDAs) which include the ministry of Agriculture and Livestock Keeping, Ministry of Trade and Industries, Ministry of Energy and Minerals and other water related sector ministries. As policy formulating bodies, they have to make sure that these policies comply with integrated water resources management.
- **Local government institutions:** Relevant regional secretariats/local government technocrats (City councils, Municipal councils, Town councils, Townships and District councils, Wards and villages). LGAs are critical in implementation of water policy and WRM interventions.
- **Local communities/Water users:** Beneficiary/recipient communities targeted for understanding and addressing key issues WRM such as farmers, irrigators, livestock keepers, water committees, traditional leaders/influential people and other sectoral water users such as industries, commercial undertakings



- **Public sector utilities and major public water users:** Urban water supply and Sanitation’s authorities, Small Town water supply authorities, and Rural water supply schemes
- **Private sector and business community:** Large and small commercial farmers, Industrialists, and manufacturers
- **Civil society:** Community based organizations (CBOs), national and international NGOs carry out research, design and implement development projects and carrying out advocacy to influence decision-making around water-related issues in the basin. They come from several sectors such as environment, water, and community development. CBOs and NGOs are a powerful audience that can transmit information through their networks
- **Academic and research institutions:** Conduct research on a range of environmental and social issues applicable to the issues WRBWB is working to address for example Sokoine University of Agriculture, Water Resources Management Institute, Mzumbe University, University of Dar es salaam and others.
- **Development partners and support institutions:** Implementation of the IWRMDP and Knowledge Management and Exchange Action plan will require funding support from different development partners who play a significant role in driving the direction of the WRBWB and have interest in integrated sustainable water resources management in the basin.
- **The media and other information intermediaries:** Media houses, bodies and journalists play a great role in conveying messages related to WRM to the targeted audience; capturing the attention of the media is critical. Training and engaging the media will significantly leverage outreach and costs.

4.5 KNOWLEDGE MANAGEMENT AND EXCHANGE STRATEGIC ACTION PLAN (SAP) DEVELOPMENT PROCESS

Development of this Knowledge Management and Exchange Strategic Action Plan for achieving SDG 6.5.1 in Tanzania was conducted between July – January 2022, consisted of two phases;

- I. Undertaking situation analysis on knowledge management and exchange on IWRM
- II. Developing the Knowledge management and exchange strategic action plan for achieving SDG6.5.1

In conducting the situational analysis and developing this Knowledge Management and Exchange Strategic Action Plan the team applied both literature reviews of documented technical reports; specifically, Tanzania River Basins IWRMD implementation reports for the 9 water basins, books and video documentaries.



The SAP development process also involved two stakeholders' consultation workshops. Consultants reached out to the identified Wami-Ruvu technical staff including ones at managerial level through face-to-face interview. The interviews were guided by using developed questionnaires consisting of both open-ended and closed questions. The first part of the assignment which focused on conducting situational analysis, the team worked the following aspects:

- (i) What exist in Wami-Ruvu river basin and other IWRM institutions regarding to knowledge management and exchange
- (ii) Whether the concepts of knowledge management and exchange for IWRM are well understood, translated into actions by the river basins and other IWRM institutions
- (iii) Opportunities that exist as well as challenges which act as barriers to knowledge management and exchange
- (iv) Identify Knowledge Management & Exchange needs
- (v) Identify capacity gaps to be addressed so as to facilitate knowledge exchange opportunities for Knowledge Management and Exchange

There are several opportunities available that can greatly facilitate IWRM knowledge management and exchange in Tanzania. Such opportunities include the MoW set-up a Water Resources Centre of Excellence for Applied Research. Other opportunities are presence of various media platforms, the Water Knowledge and Exchange Hub being developed by Global Water Partnership Tanzania (GWPTZ) in collaboration with University of Leeds etc. At this point it is also worth to mention that 7 out of the 9 Basin Water Boards (BWBs) namely, Wami-Ruvu, Rufiji, Southern Coast; the (Trans boundary), Lake Nyasa, the internal drainage basin, Lake Rukwa, Lake Victoria and Pangani confirmed to have websites, regularly share information to the public. Additionally, these 7 boards have *Instagram* pages, they also release hydrological information in form of monthly bulletins. Lake Ruvuma basin is on progress of developing website, while Lake Tanganyika had a plan to do so. Lake Tanganyika also worked to establish and publicize a knowledge Center. The basin has allocated a space in its office complex in Kigoma for the Knowledge Centre⁶.

4.5.1. WATER RESOURCES CENTRE OF EXCELLENCE FOR APPLIED RESEARCH

In addressing the absence of structured platform for exchanging information between policy makers and researchers, the MoW in 2019 set-up a Water Resource Centre of Excellence for Applied Research in Water Resources Management and development. The Centre is also responsible in coordinating research issues across water sector and IWRM institutions. It ensures the produced research outputs are not too technical, but in a simple format that can help policy makers get informed, understand easily, and help them make decisions on various IWRM policy issues. The Water Resources Centre of Excellence for Applied Research is currently at the

⁶Summary Report of IWRMD Plan for Lake Tanganyika Basin: Preparation of an Integrated Water Resources Management and Development Plan for the Lake Tanganyika Basin (Final Report - June 2015)



operationalization level and is helping in knowledge management and exchange and benefit the basins in the course of implementation of their IWRMD plans.

4.5.2.GWPTZ WATER KNOWLEDGE AND EXCHANGE HUB:

A foundation stage to contributing to the growing body of knowledge in IWRM is establishing an information and knowledge repository that can act as a one-stop shop for water sector stakeholders to access policies, legislation, water sector status reports, and other related project documents. With time, it will be necessary to make linkages to other repositories by other sector custodians in research institutions, civil society, private sector and other line ministries. Developing a user guide of the repository becomes a practical tool to guide stakeholders on accessing available information. Global Water Partnership Tanzania (GWPTZ) in collaboration with University of Leeds are working to develop Water Knowledge and Exchange hub which is going to be useful in gathering global water resources data and information from different sources. This includes open sources data available resulting from research activities that aim to expand the knowledge of water resources not only in Tanzania but also in other countries in East and Southern Africa region as well⁷. The hub will enhance Knowledge uptakes in the policy making processes as well as within stakeholders in the water sector. It is expected the Water Knowledge Exchange hub will also help in ensuring the strengthened collaborations between the hub and the Water Resources Centre of Excellence for Applied Research in Water Resources Management and development set up by MoW. The hub will also help in undertaking short trainings, building capacity of the researchers and practitioners in producing knowledge products for targeted stakeholders. Likewise, the Hub will support the MoW in undertaking continued analysis of the information needs. Likewise, the Water Knowledge Exchange hub is expected to meet the following needs:

- Serve as source of information for journalists because media can play important role in educating and sharing knowledge on water-related issues
- Information archive or a repository for water related issues whereby Development partners, Development practitioners, Government institutions including Water Basins Boards, Policymakers, Researchers, and other interested people can access information they need.
- Source of information for students pursuing studies in academic institutions.
- Facilitate collaboration, improved communication, and networking among IWRM stakeholders and other users of the Water Knowledge Exchange hub.

⁷GWPTZ-LEEDS Water Knowledge Hub Final Report, 2020



4.5.3. PRESENCE OF VARIOUS MEDIA PLATFORMS:

Access to technical report could be a challenge, however many people may access journal or news articles which are shared through various media outlets such as social media platforms as well as the traditional news media. During recent years Tanzania has witnessed an increased number of media activities⁸. Despite the opportunity of available media platforms, there exist a challenge. Water stories by Tanzanian media mainly cover ad-hoc events like water rationing and commissioning ceremonies of water projects. Other water related issues, especially on Integrated Water Resources Management (IWRM) are not frequently covered by the media (newspapers, radio, TV and bloggers). An abstract: “Enhanced Knowledge Management for Improved Media Reporting on Water-Related Issues” developed by USAID/Tanzania Water Resources Integration Development Initiative (WARIDI) for annual 2020 Maji Week Conference indicate that periodic monitoring of local and national media coverage through television, radio, print and online newspapers showed there are relatively few comprehensive stories on water governance, public and private partnerships in water, funding opportunities in the sector, corruption in water projects, water use conflicts and other issues which are prevalent in the Tanzanian water sector⁹. Journalists cited a variety of reasons for the lack of reporting on water resources management, most importantly lack of available information and knowledge on the water resources management.

4.5.4. NATIONAL MULTI-SECTORAL FORUM (NMSF)

National Multi-Sectoral Forum (NMSF) on Water Resources Management and Development aims to enhance collaboration, build synergies, and highlight opportunities for collective action in water resources management. Decisions about how to allocate and use water in an efficient, sustainable, and equitable manner are fundamental to Tanzania’s future. Led by the Ministry of Water (MoW) and supported by the World Bank and the 2030 Water Resources Group (WRG), the NMSF was officially adopted by the Government of Tanzania in 2017 following piloting that was carried out by the MoW and 2030 WRG between 2013 and 2016. Following the successful delivery of the first official NMSF in 2017, the MoW with support from partners initiated a process of establishing Basin Forums in all nine basins: with some basins cascading further the forums to catchment level. The NMSF provide strategic guidance in implementation of IWRMD plans as well as to perform advisory functions and support undertakings of National Water Board, research agenda and other water related sectors and institutions through enhanced coordination at the

⁸ Constantine, D. (2013), THE SOCIAL MEDIA AND ORGANIZATIONAL PERFORMANCE AMONG CIVIL SOCIETY ORGANIZATIONS IN TANZANIA; The Case of Policy Forum and Selected Member Organizations, M.A. (Development Management) Dissertation University of Dar es Salaam

⁹ An abstract: “Enhanced Knowledge Management for Improved Media Reporting on Water-Related Issues” developed by USAID/Tanzania Water Resources Integration Development Initiative (WARIDI) for 2020 Maji Week Conference



national and basin levels. The NMSF has continued to successfully mobilize both financial and in-kind support, and it is currently working towards establishing effective operational working groups as part of an implementation strategy with the view to achieve water security for all.

4.5.5. AVAILABILITY OF SUPPORTIVE PARTNERS

Society is interested in the water sector because it touches daily people's lives in communities. Individuals as well as development partners are interested in water issues. There are several development partners who are willing to support water related initiatives

4.6 WAMI-RUVU BASIN WATER BOARD KEY KNOWLEDGE MANAGEMENT ISSUES AND CHALLENGES

Knowledge Management processes have been taking place in the Wami-Ruvu Basin through implementation of various activities to raise awareness on IWRM issues to the community and other stakeholders e.g., participation in "Kipima Joto" TV program (loosely translated "hot seat"); investment in educational programs and participating in knowledge sharing events like Maji Week. However, the Wami-Ruvu Basin face several Knowledge Management challenges. Among the challenges include lack of technical skills in knowledge Management, absence of designated person for Knowledge Management. Insufficient financial resources to implement knowledge Management activities also pose a big challenge to a successful implementation of knowledge management activities. Among attributes for enabling Wami-Ruvu Basin to efficiently carry out Knowledge Management activities include Knowledge Management infrastructure, incentives that reward knowledge sharing, and encouragement of interaction for the creation and sharing of knowledge.

4.6.1. ABSENCE OF DESIGNATED PERSON FOR KNOWLEDGE MANAGEMENT

As a mandated organ for enhancing the sustainable management of water resources, the Wami-Ruvu Basin has made an important step in ensuring that communication with water users and other WRM stakeholders is improved by developing a communication strategy. However, absence of designated person for Knowledge Management is a gap. Knowledge Management is key to ensuring WRM is well integrated. Communities, and stakeholders and institutions need to have a clear understanding of the value of scarce water resources, impacts of water resources degradation and what are roles of each in ensuring proper water resources management takes place. Wami-Ruvu Basin Office does not have a designated KM person. None is hired as KM designated person who exclusively deal with knowledge management. It is like all staff should do KM which is practically not possible. The KM designated person plays a role of being like a 'KM hub' working closely with other collaborating partners and IWRM institutions, actively promoting the knowledge agenda within and beyond the team as well as overseeing the development of the knowledge infrastructure. Also, helps in facilitating connections, coordination and communications. In many MDAs a designated KM specialist is hired to lead and



implement KM functions. Title of the position holder may differ from one organisation to another. Currently, WRBWO has a unit, Communication and Customer Relations which conduct most of the activities related to sharing information to the outside world. Until last year (2021) communications functions were under the department of Community Development and Public Relations (CDPR). Despite the gap of lacking KM focal person, Wami-Ruvu river basin has developed a comprehensive Communications Strategy but does not have the strategy for Knowledge Management. The Communications Strategy defines what change need to be brought about with regards to the Basin’s mandate in IWRM, individuals or groups to influence by communications products, key messages to deliver, and information channels or platforms to be used in reaching targeted audiences. The strategy currently in use serve as an important tool in providing the direction on how communication activities should be implemented in Basin. The strategy (2017-2020) helped to ensure all WRM stakeholders are aware of the Water Resources Management Act No. 11 of 2009, the NAWAPO 2002 and EMA No. 20 of 2004 so that they can fully participate in the WRM activities. It further ensures the smooth internal communication to improve staff capacity and understanding of IWRMD activities. The strategy aims at promoting stakeholder participation consultation, engagement, and education to maximize stakeholder participation in decision making, planning and implementation of IWRMDP. For effective stakeholder participation, stakeholders must be aware of their responsibilities and rights in IWRM, must effectively participate water resources management structures and there must be two-way communication.¹⁰ Referring to the Wami-Ruvu communication strategy information products disseminated include WRM policies and Act, awareness creation materials on WRM activities, water quality and quantity, water discharge regulations etc. The basin has been using different means including reports, brochures, leaflets, banners, workshops and TV and Radio Media to disseminate information to water users and other WRM stakeholders.

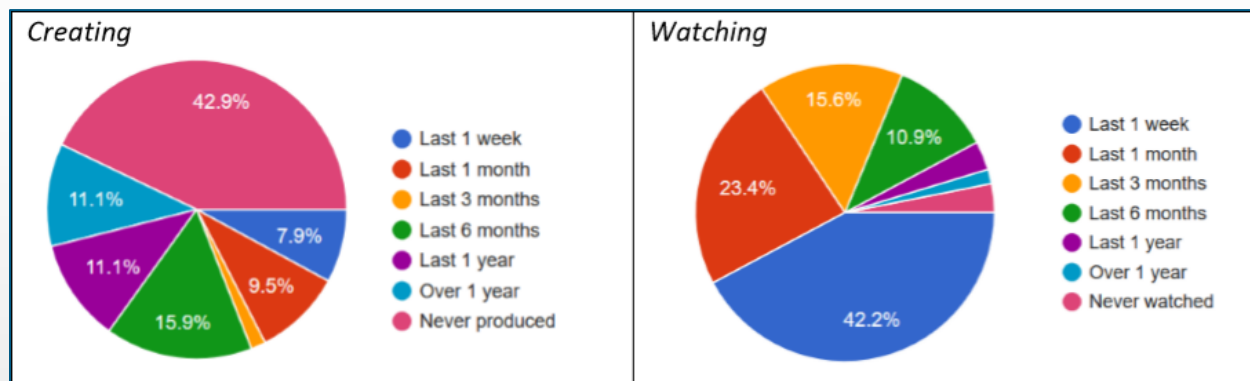
4.6.2. KNOWLEDGE MANAGEMENT TECHNICAL CAPACITY GAPS

Demand for knowledge in the water sector is high. There is a great interest in following current news on water resources governance and management, but there is a limited capacity to produce the news products not only in the Wami-Ruvu BWO but also for other IWRM institutions. Most BWBs including Wami-Ruvu have Communication strategies but lack knowledge management and exchange strategy. In bulky reports accessed (including BWOs Implementation Plans) the word “Knowledge” is rarely mentioned. Even where the word is used, it doesn’t come out clearly how knowledge is going to be harvested, stored and disseminated. For an organization to have effective communication and knowledge management, there has to be a qualified personnel/section to deal with information acquisition and dissemination. With reference to the WRB Communication Strategy document the Basin has no skilled personnel for mass media and

¹⁰ Wami/Ruvu Basin Water Board Communication Strategy 2017 – 2020

communication/information provision issues; this situation proves to be a challenge for the basin in achieving her objectives. Moreover, there is no ICT specialist in the Basin who can be in charge of updating the website, databases, and maintenance of the ICT equipment. In this case, the Basin has to hire an ICT specialist which is costly in terms of funds.¹¹

Similarly, a survey conducted in 2020 by GWPTZ as part of the process to develop Water Knowledge and Exchange hub showed there is a limited capacity in knowledge generation, including of research outputs¹². Participants involved in the survey came from research and academic institutions, government ministry, agency, NGO, private firms, development partners, UN agencies and individual consultants. Based on the survey report most interviewed survey participants never authored technical report. However, consumption pattern shows that if there were knowledge products produced a good number of people would read the products. Likewise, the survey revealed a good number watched a short video on water governance, but among them have never created any video (*See figure below*). This implies that the balance between the two (i.e., capacity of generating knowledge products and consumption pattern- is needed, should be considered. The results show most (42%) of respondents indicated their interest in watching short videos on water governance. However, such a great interest is matched by the same percentage of respondents (42%) who have never produced short videos on water governance.



Source: GWPTZ-LEEDS Water Knowledge Hub Report, 2020

4.6.3. KNOWLEDGE MANAGEMENT FINANCIAL RESOURCES GAPS

Development of KM strategic action plan, carrying out KM activities and monitoring and evaluating the implementation of KM strategy requires resources in terms of human skills, IT infrastructures, time, and finance. In various reports accessed, including IWRMD plans implementation reports the river basins including Wami-Ruvu BWO mention lack of sufficient financial resources needed to implement various IWRM activities as a challenge. There is limited institutional and human capacity to mobilize financial resources. Being the case implementation

¹¹ Wami/Ruvu Basin Water Board Communication Strategy 2017 – 2020

¹²GWPTZ-LEEDS Water Knowledge Hub Final Report, 2020



of Knowledge Management activities may be limited due to scarce financial resources. There is no specific budget for communication and Knowledge Management issues. Most of the communication activities are implemented under the community development budget. This implies that some of the activities involved in communication are not implemented due to limited funds. Mobilizing resources including finance is crucial for successful implementation of Knowledge Management activities in the Wami-Ruvu.

4.6.4. LACK OF KNOWLEDGE SHARING CULTURE

It is a fact that most people lack the ability to accept mistakes made in their areas of work despite the common understanding that “we learn through mistakes.” There is also a say that goes “Knowledge is power.” If that is the case, how could the culture of knowledge sharing help to address the fear that exists when it comes to sharing lessons and experiences in our day-to-day IWRM activities? It goes without saying that fear to accept mistakes and unwillingness to share; makes it difficult for others to learn from mistakes already made to avoid repeating them in their respective workplaces.

Wami-Ruvu river basin is taking several measures to enhance the culture of sharing Knowledge. Current plan (Noted during development of the SAP) by the Wami-Ruvu river basin to address IWRM related challenges and the threats to Tanzania’s water resources base involve carrying out the following measures.

1. Investing in educational programs to different levels of education spheres which includes primary, secondary to colleges and universities
2. Investing on creating awareness to communities around water sources and users through meetings
3. Investing on targeted communication and marketing campaigns to raise awareness and drive behavior change in protection, conservation, use and payment for water
4. Use of media, especially local media such as local FM radios whereby the basin plan to increase stakeholder engagement to raise awareness of IWRM issues.
5. Participate in all government events and use every available opportunity to raise awareness.

BWO has managed to reduce the habit or culture of not sharing information by encouraging transparency, came up with incentives to those who exceptionally perform and has mechanisms for ensuring every team member feel that they are valuable by insisting participation of each department in all activities.

4.6.5. KNOWLEDGE MANAGEMENT MANAGERIAL-RELATED CAPACITY CHALLENGES

Among proposed actions to complement efforts that exist to advance knowledge management and exchange include the “buy-in” of Knowledge Management initiatives by the senior management. Hierarchical-bureaucratic structures, though they generate useful outcomes in some organizational settings and under specific circumstances, are considered to prevent



knowledge sharing and utilization. They impose limits to learning, generation of new knowledge, dissemination and exchange. The Wami-Ruvu Basin managerial level as mentioned earlier is taking several measures to promote the culture of sharing Knowledge at all levels within and outside the organization. Inability to measure performance is also a challenge. Periodic monitoring and evaluation of the action plan will enable the basin to know whether intended goals are being achieved, or if there is a need to re-design the remaining strategic actions based on prevailing circumstances. The development of an appropriate monitoring framework for the strategic the action plan should take into consideration emerging best practices as documented in the course of implementation of planned activities. Also, there is a need to monitor and track the impact of knowledge management and the usage of knowledge products.

4.7 KNOWLEDGE MANAGEMENT AND EXCHANGE STRATEGIC GOALS 2021 – 2030

4.7.1.GENERATE AND COMMUNICATE KNOWLEDGE

This goal focuses on developing the capacity to share knowledge and fostering a dynamic communications culture. To bring about change, people need knowledge to understand the state of water resources and the tools needed to sustainably develop and manage them. Knowledge can stimulate behavioral change towards a new ‘water culture’.

4.7.2.REINFORCE KNOWLEDGE SHARING AND COMMUNICATIONS

This goal focuses promoting a dynamic communications culture, to support better water management.

4.7.3.ENHANCE FINANCIAL CAPACITY FOR KNOWLEDGE SHARING AND MANAGEMENT

This goal focuses on sharing opportunities available for the Basin to mobilize resources required to share knowledge and to promote a dynamic communications culture, to support better water management.

4.8 KNOWLEDGE MANAGEMENT AND EXCHANGE STRATEGY FOR WAMI/RUVU BASIN WATER BOARD

4.8.1.ENHANCING TECHNICAL CAPACITY FOR KNOWLEDGE MANAGEMENT

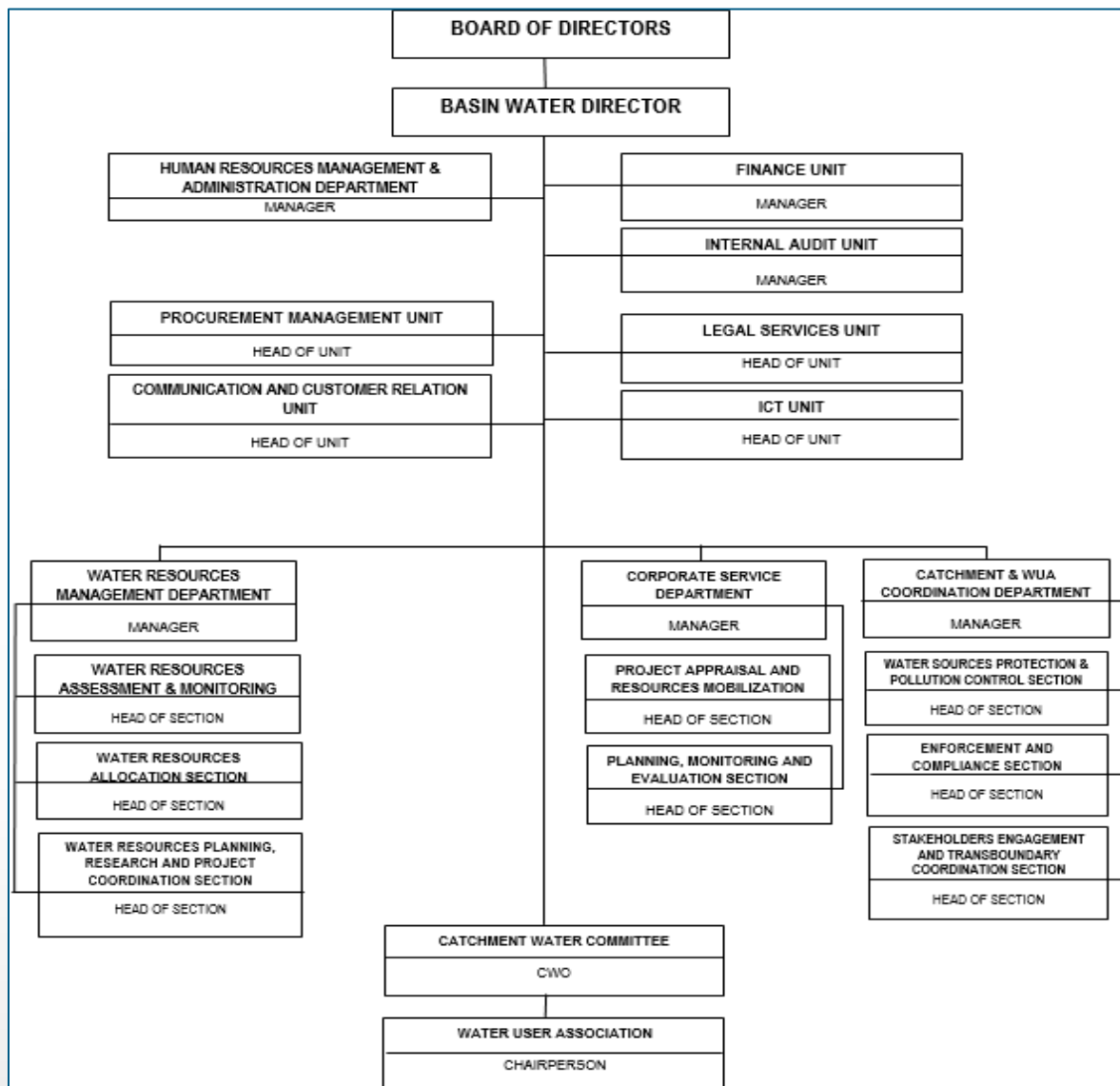
Targeted Knowledge Management training, e.g., enhancement of writing capacity and reading culture among Wami-Ruvu basin staff is crucial. This involves building capacity for Knowledge Management Planning and mapping, Knowledge identification, capture and analysis and dissemination of knowledge. To develop Knowledge Management and exchange strategy is crucial as well as to get someone taking a lead in KM. For effectively functioning of the KM



designated person, there should be a supportive IT infrastructure and systems for information sharing. The KM designated person plays a role of being like a 'KM hub' working closely with other collaborating partners and IWRM institutions. It is important to get someone taking a lead in KM. Knowledge Management designated person should be responsible to take a lead in KM activities which include the following one;

- Develop Action Plan on KM at each level and capture innovation and learning as it happens in the field by project activities
- Harvest stories for dissemination by translating raw data into meaningful Knowledge products
- Share relevant information and knowledge on lessons, results and impact.
- Assist the respective river basin or IWRM institution on media related issues such as media engagement of journalists etc.
- Collecting relevant data that is useful for the team as knowledge
- Developing an overall framework that guides knowledge management.
- Actively promoting the knowledge agenda within and beyond the team
- Overseeing the development of the knowledge infrastructure
- Facilitating connections, coordination and communications

With the presence of MoW's Water Resources Centre of Excellence for Applied Research, GWPTZ Water Knowledge and Exchange Hub, National Multi-Sectoral Forum (NMSF) on Water Resources Management and Development and availability of various media platforms, Wami-Ruvu River Basin foresees a better future in terms of KM. During development of this strategic action plan, it was noted that BWBs will have to collect and manage revenues making sure 40% of the total collections cater for operations costs and 60% development. There was also a move for Wami-Ruvu Basins to becoming semi-autonomous organization. The new structure for the BWO below will have a unit that will be dealing with knowledge management roles including capturing and sharing knowledge for improved implementation of IWRM.



WRBWB Organization chart.

SOURCE: Wami-Ruvu BWO

The plan at the WRBWB is to raise awareness of threats to Tanzania’s water resources base through;

- Investing in educational programs to different levels of education spheres which includes primary, secondary to colleges and universities
- Investing on creating awareness to communities around water sources and users through meetings
- Investing on targeted communication and marketing campaigns to raise awareness and drive behavior change in protection, conservation, use and payment for water
- Use of various media platforms



- Participate in all government events and use every available opportunity to raise awareness

4.8.2. ENHANCING FINANCIAL CAPACITY FOR KNOWLEDGE MANAGEMENT

This Strategic Action Plan for knowledge management and exchange will require consistent and sustainable funding to meet implementation cost for planned activities. Without sustainable funding, the Wami-Ruvu will not be able to implement the strategic actions, rendering it inoperative. Setting out a budget for knowledge management at the start of each financial year should be prioritized. Apart from Wami-Ruvu own sources there are several development partners who are willing to support such water related initiatives. Mapping of potential stakeholders for resources mobilization is also a key activity. Building institutional and human capacity to mobilize financial resources is needed. For example, building technical capacity in proposal writing that attract funds. Detailed information on resource mobilisation for Wami-Ruvu Basin is well documented by consultants developing a Resource Mobilization Action plan for Wami-Ruvu basin. During development of this strategic action plan, it was noted that BWBs will have to collect and manage revenues making sure 40% of the total collections cater for operations costs and 60% development. There was also a move for Wami-Ruvu Basins to becoming semi-autonomous organization. The new structure for the BWO will have a unit that will be dealing with knowledge management roles including capturing and sharing knowledge for improved implementation of IWRM.

4.8.3. STRATEGIES TO ENHANCE STAKEHOLDERS' ENGAGEMENT

Stakeholder's engagement is key to building synergies and highlighting opportunities for collective action in water resources management. Wami/Ruvu will implement a comprehensive communications strategy that builds on its knowledge base and expands water advocacy more broadly to take in social and economic development. Specific elements of the strategy to reach this desired goal are outlined below.

1. Outreach:

Outreaches help people realize that sharing information between departments, regions and cooperating Partners strengthens the network and augments its contribution to the wider stakeholder's community as well as informing the water sector, this will involve engaging with non-water ministries, such as Finance and Planning, and with key NGOs, such as TAWASANET.

2. Strategic messages:

This strategy will support Wami-Ruvu BWB to tap into knowledge based on experience and grounded in sound theory and methodology. Wami-Ruvu can use available platforms for stakeholder's engagement such as media outlets (social media platforms and traditional media). Additionally, local council, ward and village meetings can play an important role in Stakeholder's engagement. During recent years Tanzania has witnessed an increased number of media



activities¹³. Disseminating information on IWRM through media engagements by using tools such as radio, social media, TV etc. is necessary to put in the limelight strategic IWRM messages. During this period of increased connectivity and digitalization, there are various platforms that can be used to disseminate information in much faster and effective ways. Also, the National Multi-Sectoral Forum (NMSF) on Water Resources Management and Development aims to enhance collaboration, build synergies, and highlight opportunities for collective action in water resources management. The NMSF provide strategic guidance in implementation of IWRMD plans as well as to perform advisory functions and support undertakings of National Water Board, research agenda and other water related sectors and institutions through enhanced coordination at the national and basin levels. Likewise, strengthened collaboration between WRBWB as well as other river basins with academic institutions can provide students great opportunities for exploring more of IWRM issues.

4.8.4. ENHANCING KNOWLEDGE SHARING CULTURE

How a culture supporting KM can be created? How can people with knowledge stop working in silos or walking with knowledge in their heads, instead willingly sharing what they know? Part of the solution could be organizing knowledge exchange interventions. Knowledge sharing events and Exchange tours provide tangible experiences to water sector stakeholders on tested solutions for integrated water resources management. Such in-the-field learning can catalyze sustainable action within Tanzania. For example, through the NMSF, stakeholders can identify successful IWRM enterprises that can be used for learning through exchange tours. Basin Multi Stakeholder Forums could also plan for exchange tours to enable basin-to-basin or peer-to-peer learning. In this way it can help people to open up to sharing knowledge they possess. WRBWO has managed to reduce the habit of not sharing information by encouraging transparency. The basin has come up with a strategy to provide incentives to those who exceptionally perform well in the area of sharing information or knowledge. The basin has put in place a mechanism for ensuring every team member feel that they are valuable by insisting participation of each department in all activities.

4.8.5. PROMOTING AFTER ACTION REVIEW (AAR)

Wami-Ruvu basin is going to monitor and track the impact of knowledge management and the usage of knowledge products. This also involves setting out a clear approach to monitoring, evaluation, learning and reporting of implemented knowledge management initiatives. After-Action Review (AAR) is among approaches for consideration by Wami-Ruvu basin. AAR is a structured review or debriefing process for analysing what happened, why it happened, and how

¹³Constantine, D. (2013), The Social Media and Organizational Performance among Civil Society Organizations in Tanzania; The Case of Policy Forum and Selected Member Organizations, M.A. (Development Management) Dissertation University of Dar es Salaam



it can be done better by the participants and those responsible for the project or event. AAR is a powerful and effective method for harvesting and applying lessons learnt from the experience of conducting different IWRM activities. Their (AAR) use has extended to business as a knowledge management tool and a way to build a culture of accountability. An AAR occurs within a cycle of establishing the leader's intent, planning, preparation, action and review. An AAR is distinct from a de-brief in that it begins with a clear comparison of intended versus actual results achieved. An AAR is distinct from a post-mortem in its tight focus on participants' own actions; learning from the review is taken forward by the participants. Recommendations for others are not produced. AARs in larger operations can be cascaded in order to keep each level of the organization focused on its own performance within a particular event or project.

4.9 WRBWB ACTION PLAN MATRIX FOR KM AND EXCHANGE

Among proposed actions (*see table below*) to complement current efforts done by Wami-Ruvu Basin to operationalize knowledge management and exchange include building capacity for Knowledge Management planning and mapping, Knowledge identification, capture, and analysis as well as documentation and dissemination. Likewise, strengthened collaborations, resource mobilisation and increased stakeholders and media engagement as well as getting on board KM designated focal person. Wami-Ruvu can strategically consider taking the following actions to enhance Knowledge Management in the Basins and other IWRM institutions in Tanzania.

KEY PROPOSED ACTION	TIME FRAEME	Key Leads	Result
<p>To develop Knowledge Management and exchange strategy <u>Activities</u></p> <ul style="list-style-type: none"> - Working out how the strategy is going to contribute to overall organizational goals - Identify people, processes, and technology needed 	Y22	WRBWB	Knowledge Management and exchange strategy
<p>To designate KM focal person (salary for 12 months)</p> <ul style="list-style-type: none"> - Develop detailed knowledge management competencies - facilitate continuous sharing, transfer, and capture knowledge among WRBWB staff 	Y22	WRBWB	Designated KM skilled focal person
<p>Implementation of day-to-day KM activities as they occur <u>Activities</u></p> <ul style="list-style-type: none"> - Collecting/harvesting information/ stories 	Y22, Y23, Y24, Y25, Y26, Y27, Y28, Y29		Well packaged knowledge products, shared and stored for use



<ul style="list-style-type: none"> - Production of documentaries on IWRM Organizing and synthesizing data - Developing knowledge products - Storing/ managing repository - Sharing knowledge products - Carrying out After Action Reviews Evaluating changes resulting from shared knowledge products 			
<p>To build capacity for Knowledge Management <u>Activities</u></p> <ul style="list-style-type: none"> - Planning, - Identification of knowledge, documentation (harvesting/ collecting) - analysis and storage - dissemination knowledge products 	<p>Y22, Y23, Y24, Y25, Y26, Y27, Y28</p>	<p>Academic Institutions, GWPTZ, WRBWB</p>	<p>Improved capacity to undertake Knowledge Management functions</p>
<p>To strengthen collaborations among IWRM stakeholders <u>Activities</u></p> <ul style="list-style-type: none"> - Facilitating connections, coordination's and communications Promote exchange of lessons learnt - Strengthen development partners coordination - Conflict management - Capacity building for identified weakness - Procure and application of required IT facilitating collaboration 	<p>Y22, Y23, Y24, Y25, Y26, Y27, Y28</p>	<p>WRBWB & IWRM institutions</p>	<p>Strengthened collaborations among IWRM stakeholders</p>
<p>To increase media engagement for IWRM issues awareness creation <u>Activities</u></p> <ul style="list-style-type: none"> - Build capacity of journalists on IWRM - Establish, support journalism award on IWRM - Participate in radio/TV talk show 	<p>Y22, Y23, Y24, Y25, Y26, Y27, Y28</p>	<p>Media, WRBWB, Media Council of Tanzania, IWRM CSOs, GWPTZ</p>	<p>Increased media engagement for IWRM issues</p>



<ul style="list-style-type: none"> - Conduct learning & Knowledge sharing events on IWRM issues 			
<p>To mobilize more resources for Knowledge Management activities <u>Activities</u></p> <ul style="list-style-type: none"> - Mapping of potential stakeholders for resources mobilization - Building capacity in proposal writing - Developing proposals for potential funding 	Y22, Y23, Y24, Y25, Y26, Y27, Y28	WRBWB & Consultants	Increased resources for Knowledge Management activities
<p>To establish an IWRM information and knowledge repository <u>Activities</u></p> <ul style="list-style-type: none"> - Procure supportive IT infrastructure and systems for information - Populate, manage the repository 	Y22, Y23	WRBWB, GWPTZ	Knowledge Management and Exchange hubs/ repositories



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CHAPTER 5. MONITORING AND EVALUATION STRATEGY FOR ENHANCING IMPLEMENTATION OF IWRM IN WAMI-RUVU BASIN

5.1 INTRODUCTION

Monitoring refers to checking progress against plans. It allows results, processes and experiences to be documented and used as a basis to steer decision-making and learning processes. Monitoring is the systematic process of collecting, analyzing and using information to track a programme's progress toward reaching its objectives and to guide management decisions. Monitoring usually focuses on processes, such as when and where activities occur, who delivers them and how many people or entities they reach. Evaluations appraise data and information that inform strategic decisions, thus improving the project or programme in the future. Evaluation is the systematic assessment of an activity, project, programme, strategy, policy, topic, theme, sector, operational area or institution's performance. Evaluation focuses on expected and achieved accomplishments, examining the results chain, processes, contextual factors and causality, in order to understand achievements or the lack of achievements. For this assignment, the evaluation aims at determining the relevance, impact, effectiveness, efficiency and sustainability of interventions and the contributions of the intervention to the results achieved. An evaluation should provide evidence-based information that is credible, reliable and useful. Monitoring and Evaluation is used to assess the performance of projects, institutions and programmes set up by governments and organizations. Its goal is to improve current and future management of output. Also, the findings, recommendations and lessons of an evaluation should be used to inform the future decision-making processes regarding the programme.



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The monitoring and evaluation plan should include plans for internal dissemination among the program team, as well as wider dissemination among stakeholders and donors. For example, a program team may want to review data on a monthly basis to make programmatic decisions and develop future work plans, while meetings with the donor to review data and program progress might occur quarterly or annually. Dissemination of printed or digital materials might occur at more frequent intervals. These options should be discussed with stakeholders and your team to determine reasonable expectations for data review and to develop plans for dissemination early in the program. If these plans are in place from the beginning and become routine for the project, meetings and other kinds of periodic review have a much better chance of being productive ones.

5.2 MONITORING AND EVALUATION EXISTING PRACTICES AT WAMI/RUVU BASIN

The Wami-Ruvu basin has a department dealing with monitoring and Evaluation of basin activities. However, during the survey it was found that such department was not there before and by the time it had only one month of undertaking its activities. Moreover, it was found that capacity building for this department is foreseeable to enhance the undertaking of its daily activities and therefore, this work is of most important to be used at the department in undertaking its daily activities in implementing SDG 6.5.1 at the basin. Moreover, Wami-Ruvu Basin SWOC analysis (Table 5.2.1) has shown the weakness and challenges that need attention for effective implementation of IWRM at the basin and therefore it shows the necessity of developing this tool. Despite the strengths and opportunities, the survey observed that weakness (poor internal communication, inadequate ICT devices and services, inadequate internal controls, insufficient staff, inadequate working facilities) and threats (dependency on donor funded projects, effects of climate change, unwillingness to pay for Water use fee and discharge permits) should be given high attention for efficient and effective implementation of the monitoring and evaluation of strategic action plan.

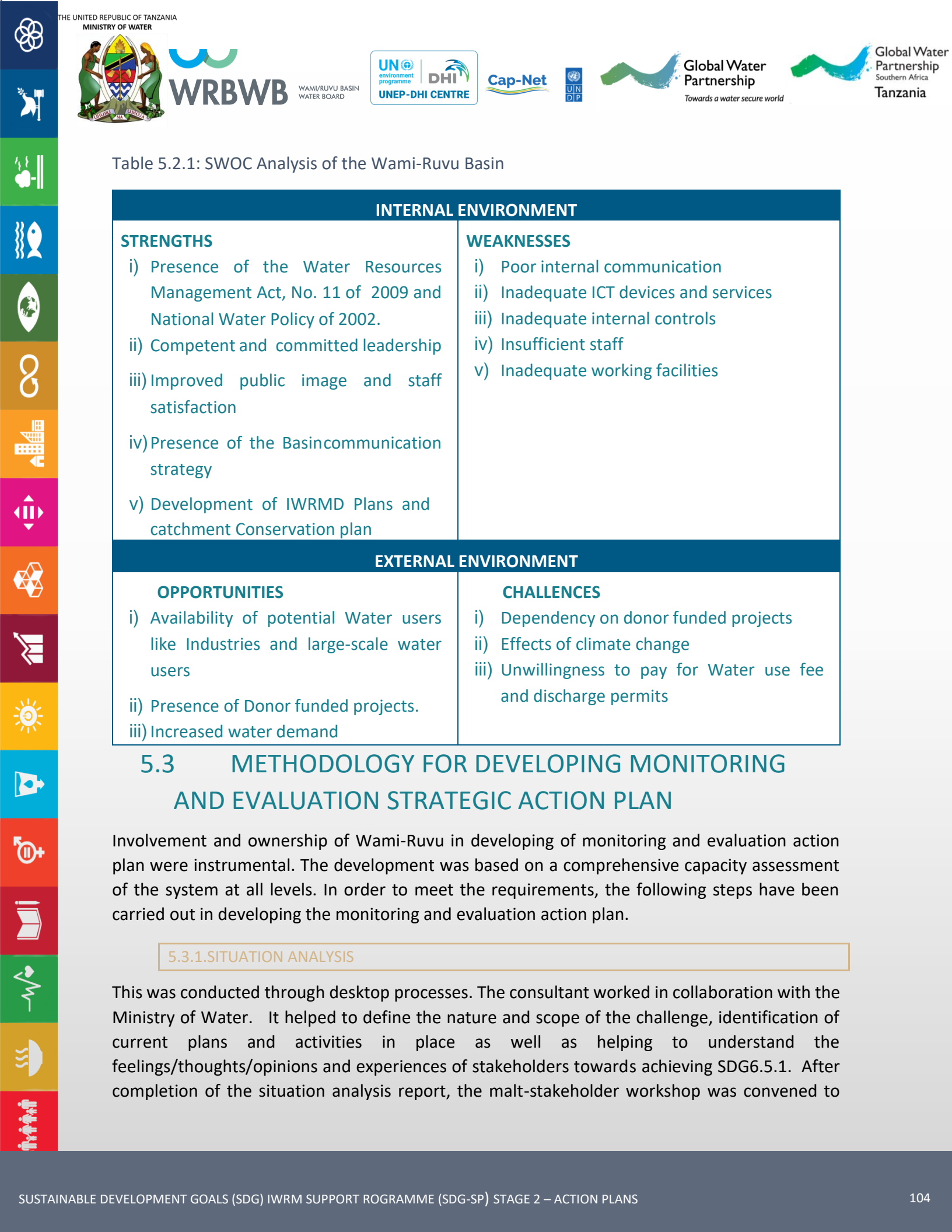


Table 5.2.1: SWOC Analysis of the Wami-Ruvu Basin

INTERNAL ENVIRONMENT	
<p>STRENGTHS</p> <ul style="list-style-type: none"> i) Presence of the Water Resources Management Act, No. 11 of 2009 and National Water Policy of 2002. ii) Competent and committed leadership iii) Improved public image and staff satisfaction iv) Presence of the Basin communication strategy v) Development of IWRMD Plans and catchment Conservation plan 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> i) Poor internal communication ii) Inadequate ICT devices and services iii) Inadequate internal controls iv) Insufficient staff v) Inadequate working facilities
EXTERNAL ENVIRONMENT	
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> i) Availability of potential Water users like Industries and large-scale water users ii) Presence of Donor funded projects. iii) Increased water demand 	<p>CHALLENGES</p> <ul style="list-style-type: none"> i) Dependency on donor funded projects ii) Effects of climate change iii) Unwillingness to pay for Water use fee and discharge permits

5.3 METHODOLOGY FOR DEVELOPING MONITORING AND EVALUATION STRATEGIC ACTION PLAN

Involvement and ownership of Wami-Ruvu in developing of monitoring and evaluation action plan were instrumental. The development was based on a comprehensive capacity assessment of the system at all levels. In order to meet the requirements, the following steps have been carried out in developing the monitoring and evaluation action plan.

5.3.1. SITUATION ANALYSIS

This was conducted through desktop processes. The consultant worked in collaboration with the Ministry of Water. It helped to define the nature and scope of the challenge, identification of current plans and activities in place as well as helping to understand the feelings/thoughts/opinions and experiences of stakeholders towards achieving SDG6.5.1. After completion of the situation analysis report, the malt-stakeholder workshop was convened to



interrogate the respective situation analysis report where key recommendations on focal activities under each priority area were highlighted.

5.3.2. DESK REVIEW AND PRODUCTION OF DRAFT STRATEGY

The Program Management and Monitoring Unit Technical support team conducted a rigorous desk review of Wami-Ruvu Basin Fact sheet, Wami Basin (A Situation Analysis¹⁴), National Water Policy 2002¹⁵, Wami-Ruvu Basin Annual Work Plan and Budget for Financial Year 2021/2022¹⁶, Ministry of water budget 2020 and the Water Resources Management Act 2009¹⁷. Lessons learned from best practices in monitoring and evaluation in other countries, and project progress and technical reports from multiple government, non-government organizations and development partners working in the water sector for development.

5.3.3. STAKEHOLDER CONSULTATION

Stakeholders' consultation was employed to capture data for developing the Monitoring and Evaluation Strategic Action Plan for SDG 6.5.1. Stakeholders include; Water User Associations, GWP Tanzania officials, Wami-Ruvu Basin Officials, Local Government Authority Officials, Morogoro Urban Water Supply and Sanitation Authority (MOROWSSA) and Dar es Salaam Water and Sewerage Authority (DAWASA). Moreover, during the workshop organized by GWP Tanzania for validation of situation analysis report, the basin officer invited to the workshop contributed many inputs to this assignment. It is our understanding that more inputs will be gathered during the final workshop to be held on 20th December 2021 in Dar es Salaam.

5.3.4. DISSEMINATION AND FINALIZATION

The final draft was disseminated during the monitoring and evaluation action workshop, and the final version of the monitoring and evaluation action plan was presented in the meeting on 20/12/2021 for the final review and forward for approval by the IWRM. Upon approval, the monitoring and evaluation action plan was put in place.

5.3.5. THE PURPOSE OF MONITORING AND EVALUATION ACTION PLAN

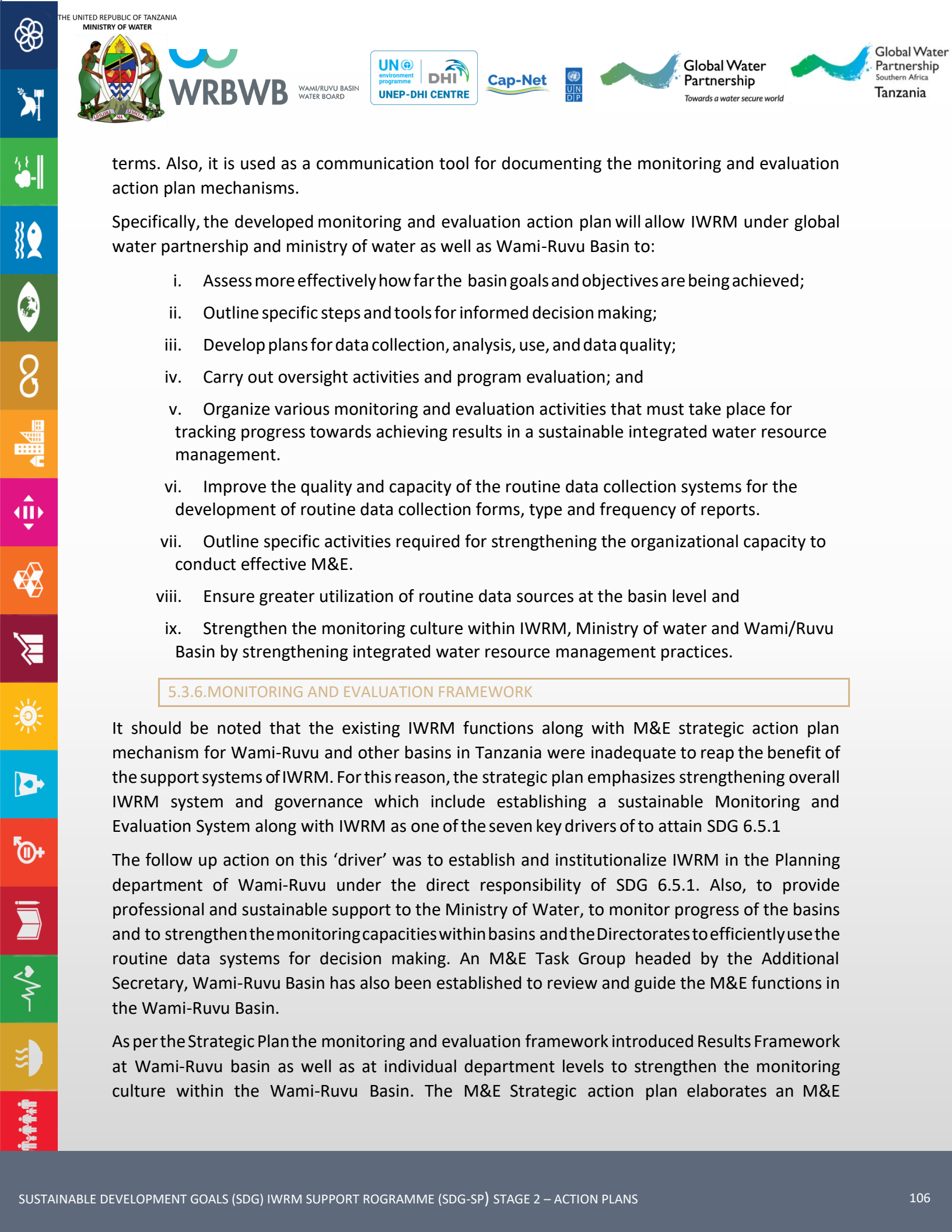
The main purposes of the monitoring and evaluation action plan is to outline various roles and responsibilities regarding monitoring and evaluation with a view to tracking progress and demonstrating results, the used tool for monitoring progress both in physical and financial

¹⁴ URT, Wami A situation Analysis Report, Report for the Wami-Ruvu Basin Water Office Supported by IUCN, Authors; Prof James Ngana, University of Dar es Salaam Florence Mahay, WRBWO Katharine Cross, IUCN, 2010.

¹⁵ URT, 2002. National Water Policy.

¹⁶ URT 2021, Wami Basin Annual Work Plan and Budget for Financial Year 2021/2022.

¹⁷ URT, 2009. The Water Resources Management Act.



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terms. Also, it is used as a communication tool for documenting the monitoring and evaluation action plan mechanisms.

Specifically, the developed monitoring and evaluation action plan will allow IWRM under global water partnership and ministry of water as well as Wami-Ruvu Basin to:

- i. Assess more effectively how far the basin goals and objectives are being achieved;
- ii. Outline specific steps and tools for informed decision making;
- iii. Develop plans for data collection, analysis, use, and data quality;
- iv. Carry out oversight activities and program evaluation; and
- v. Organize various monitoring and evaluation activities that must take place for tracking progress towards achieving results in a sustainable integrated water resource management.
- vi. Improve the quality and capacity of the routine data collection systems for the development of routine data collection forms, type and frequency of reports.
- vii. Outline specific activities required for strengthening the organizational capacity to conduct effective M&E.
- viii. Ensure greater utilization of routine data sources at the basin level and
- ix. Strengthen the monitoring culture within IWRM, Ministry of water and Wami/Ruvu Basin by strengthening integrated water resource management practices.

5.3.6. MONITORING AND EVALUATION FRAMEWORK

It should be noted that the existing IWRM functions along with M&E strategic action plan mechanism for Wami-Ruvu and other basins in Tanzania were inadequate to reap the benefit of the support systems of IWRM. For this reason, the strategic plan emphasizes strengthening overall IWRM system and governance which include establishing a sustainable Monitoring and Evaluation System along with IWRM as one of the seven key drivers of to attain SDG 6.5.1

The follow up action on this 'driver' was to establish and institutionalize IWRM in the Planning department of Wami-Ruvu under the direct responsibility of SDG 6.5.1. Also, to provide professional and sustainable support to the Ministry of Water, to monitor progress of the basins and to strengthen the monitoring capacities within basins and the Directorates to efficiently use the routine data systems for decision making. An M&E Task Group headed by the Additional Secretary, Wami-Ruvu Basin has also been established to review and guide the M&E functions in the Wami-Ruvu Basin.

As per the Strategic Plan the monitoring and evaluation framework introduced Results Framework at Wami-Ruvu basin as well as at individual department levels to strengthen the monitoring culture within the Wami-Ruvu Basin. The M&E Strategic action plan elaborates an M&E



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framework for the ongoing IWRM that comprises a range of indicators at various levels to measure, monitor and evaluate both implementation and impact IWRM at basin level. The M&E Framework also lists the data sources, regularity of updating the indicators, and analysis and reporting of results. The M&E Framework is primarily based on the result-based approach, with the idea that achieving SDG 6.5.1 at different levels that would lead to desired IWRM impact.

Literature indicates that, in developing Monitoring and Evaluation Strategic Action Plan for implementation of IWRM at the basin scale, it is important to consider the following: dissemination of IWRM monitoring and evaluation information, electronic reporting, monthly reports, annual monitoring reports, survey reports, bi-annual or six-monthly report, annual programme implementation report, development and implementation of the capacity building plan. Moreover, development of standardized M&E training materials, development of skilled M&E trainers through a train-the-Trainer (TOT) program, development of a multi-year training plan to facilitate structured and sequenced M&E training; and implement training using the capacity building modalities within the basin.

5.3.7. DISSEMINATION OF IWRM MONITORING AND EVALUATION INFORMATION

The generated information from different sources shall be translated into information that is relevant for utilization at different levels of decision-making. Progress of the basins will also be monitored by different actors outside WAMI-RUVU BASIN. Dissemination, monitoring and evaluation of IWRM can be done by basin employees. However, midline and end-line evaluation should be done external expert with no direct interest to the basin activities.

5.3.8. ELECTRONIC REPORTING

Both the monitoring and evaluation information from different departments and units in Wami-Ruvu basin, the data available need to be reported electronically to all basin water stakeholders. The electronic reporting found to be more efficient and effective means or reporting information across all sectors owing to its capacity of reaching large number of expected recipients within a short period of time.

5.3.9. MONTHLY REPORTS

The monthly reports basing on the status of the implemented IWRM components in attaining the SDG 6.5.1 shall be produced based on measurable indicators to itemize the status of performance. This report will be submitted to the basin heads through heads of departments, sections and units.

5.3.10. ANNUAL MONITORING REPORTS

The most accessed and utilized sources of routine IWRM information are the Annual Reports produced to report the performance of the basin's statistics and reports on IWRM programs and



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performances of the basins provides service statistics information/data received from departments, units and section implementers to plan, formulate, monitor and evaluate IWRM performance.

53.11. SURVEY REPORTS

Survey reports on water management sector are the most commonly disseminated and utilized tools in monitoring progress in implementing the IWRM. Major is to be conducted in regular intervals to provide update on a number of impact- and outcome-level indicators and used as a basis to confirm the occurrence. In order to inform the basin sector program results in informing decision makers and policy note to highlight specific findings requiring policy attention.

53.12. ANNUAL OR SIX-MONTHLY PROGRESS REPORT

The bi-annual progress reports for the first six month are prepared based on the quarterly reports or monthly reports. Also, the report presents information on financial utilization, progress in achieving monitoring and evaluation indicators and the status of performance. It also indicates the probing analyses of the reasons for slower utilization of funds during the first half of the Financial Year and highlights specific actions needed for improving service delivery and for strengthening systems. It also draws attention to some less attended issues mainly surrounding reform initiatives and problems of basin management.

5.3.13. ANNUAL PROGRAM IMPLEMENTATION REPORT

The Annual Program Implementation Report (APIR) is useful in highlighting areas of progress and challenges in implementing the IWRM. The report assesses progress on the annual work plans and an overall assessment of basin performance against the targets set in the IWRM. All section, units and departments of Wami-Ruvu Basin by the end of the year on the implanted activities to answer the key questions on progress and performance based on the level of indicators. The APIR presents a detailed account of annual performance against the core and programmatic indicators of the basin strategic action plan, comparing current results with results of previous years, and formulate challenges and recommendations by department, units and sections The APIR provides the background and in-depth information to feed into the APR every year.

5.4 THE DEVELOPMENT AND IMPLEMENTATION OF THE CAPACITY BUILDING PLAN

The goal of the Capacity Building Plan under the M&E Strategic action plan is to facilitate and promote the development of monitoring and evaluation knowledge, skills and competence employees who are to implement the program. In line with the performance indicators outlined above, the key tasks for implementation of the M&E capacity building plan will include:



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5.5 DEVELOPMENT OF STANDARDIZED M&E TRAINING MATERIALS

In conjunction with In-Service Training (IST) will develop, disseminate and conduct training utilizing:

- i) Standardized Basic M&E Training Materials on how the IWRM M&E strategic action plan is implemented
- ii) Standardized Advanced M&E Training Materials (including statistics and epidemiology)

The standardized training materials will be informed by training needs and are in- keeping with the international best practices. In developing the training materials, available training materials will be consulted.

5.6 DEVELOPMENT OF SKILLED M&E TRAINERS THROUGH A TRAIN-THE-TRAINER (TOT) PROGRAM

The basin will design and conduct TOT sessions with staff of selected partner agencies to deliver the training materials that have been developed.

5.7 DEVELOPMENT OF A MULTI-YEAR TRAINING PLAN TO FACILITATE STRUCTURED AND SEQUENCED M&E TRAINING

The basin will develop a multi-year capacity building plan to ensure that the current level of routine data systems will sustain and operate efficiently. A training database will be developed to ensure that relevant, targeted individuals access the package of M&E strategic action plan trainings. In an effort to systematically develop participants' knowledge, skills and competencies to become fully functional M&E practitioners in their respective positions, participants will be encouraged to access a package of training opportunities including refreshers' training.

5.8 IMPLEMENT TRAINING USING THE CAPACITY-BUILDING MODALITIES

The consulting organization will deliver its training package utilizing different training modalities and utilize the staff trained under TOT program. Given their leadership role, the basin will continuously develop their capacity and remain up to date on recent IWRM developments in M&E strategic action plan.

5.9 MONITORING AND EVALUATION PROGRAMME

The monitoring and evaluation action plan developed by considering eight (8) key objectives namely, strengthened stakeholder capacity & participation, knowledge management and exchange strategy developed; Reliable information to support planning & management, resources mobilized efficiently planned and managed; human resources managed, strengthened regulation and compliance; capacity building and sustainable financing ensured. The key 8 (eight) objectives were established during the stakeholders meeting between the lead team and the Wami-Ruvu Basin officers in Morogoro. For monitoring and evaluation purpose, activities, verifiable indicators, time for implementing each activity, means of verification, responsible actor and cost for implementation were established for each objective as per Table 5.9.1. The implementation of the 8 key objectives is detailed in section 5.10 of this report.





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Table 5.9.1: Monitoring and Evaluation Log-frame

S/N	Objective	Activities	Verifiable Indicator	Time for Implementation	Means of Verification	Actor	Outcome/Impact Level	Cost for Implementation
1	Strengthened stakeholder capacity & participation in IWRM implementation	Conduct basin stakeholder's forum	Number of stakeholders attending the forum	Once per year	Minutes, progress report	CWC Department	Basin stakeholder's forum conducted by 100%	20,000,000
		Conduct awareness meetings	Number of people attending the meeting	Four times per year(quarterly)	Minutes,	CWC Department	Awareness meetings conducted by 75%	30,000,000
		Conduct Public awareness through different media	Number of media engaged	Eight times per year	Response from audience/public	CCR Unit	Public awareness through different media conduct by 75%	20,000,000
		Formation of stakeholders forum	Number of forum conducted	Twice per year	Minutes, report	CWC Department	stakeholder's forum Formed by 100%	60,000,000
2	Knowledge management and exchange	Participate in intersectoral forum	Number of forum attended	Quarterly	Report	Water related sectors	Basin employees participate in	20,000,000



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strategy developed							intersectoral forum by 75%	
	Sharing and dissemination of information communication and materials	Number of materials disseminated	Quarterly	Report,	CCR Unit	Information communication and materials shared and disseminated by 75%	30,000,000	
	Prepare documentaries	Numbers of documentaries prepared.	Quarterly	Available recording devices e.g., flash discs, externals	CCR Unit	Documentaries prepared by 100%	30,000,000	
	Prepare adverts and jingles on WRM	Number of adverts and jingles prepared	Quarterly	Available recording devices e.g., flash discs, externals	CCR Unit	Adverts and Jingles on WRM prepared by 75%	10,000,000	
	Sponsoring commercial Radios and TV programs	Numbers of Tv and radio programs sponsored.	Quarterly	Reports	CCR Unit	Commercial Radios and TV programs Sponsored by 100%	40,000,000	



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		Participate in Exhibition events like NaneNane, Maji week etc.	Number of events	Once per year	No, awareness materials disseminated, registration books, reports	CCR Unit	Participated in Exhibition events like NaneNane, Maji week etc. by 100%	40,000,000.
		Buying airtime on TV stations for airing documentaries	Number of programs aired	Quarterly	Reports	CCR Unit	Airtime on TV stations for airing documentaries sold by 75%	20,000,000.
3		Enhancing sustainability of hydrometric and hydro-meteorological stations	Number of functional hydrometric and hydro-meteorological stations	Quarterly	Credible data	WRM Depart	hydrometric and hydro-meteorological stations enhanced by 75%	150,000,000
		Enhancing sustainability of ground water monitoring stations	Number of functional GW monitoring stations	Quarterly	Credible data	WRM Depart	Sustainability of ground water monitoring stations enhanced by 75%	120,000,000



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	Reliable information to support planning & management	Prepare work plan and budget	Work plan & Budget in place	Annually	Smooth implementation of activities	CS Depart	Work plan and budget Prepare by 100%	1,000,000
		Reduce catchment stress by constructing small dams and weirs	Number of dams and weirs constructed	Annually	Availability of water	WRM Depart	Reduced catchment stress by constructing small dams and weirs by 100%	
		Gathering water resources data	Number of parameters collected	Quarterly	Availability of database	WRM Depart	Water resources data gathered by 100%	20,000,000
		Data processing and sharing of information	Number of data processed and shared	Quarterly	informed decision	WRM Depart	Data processed and information shared by 100%	10,000,000
		Prepare proposal for funding	Number of proposals prepared	Quarterly	No of project funded	CS Depart	Proposal for funding prepared	10,000,000
		4	Resources mobilized efficiently,	Prepare water use fee bills	Number of bills prepared and disseminated	Annually	Bills paid	Finance Unit



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	planned and managed	Receiving funds from the government	Number of cycles fund received from the government	Quarterly	Bank Statements	Finance Unit	Funds from the government received and used efficiently by 100%	5,000,000
		Collection of debts	Number of reminders prepared and disseminated	Annually	Debts collected	Finance Unit	Water use debts collected by 100%	20,000,000
5	Human Resources developed and managed	Motivation and promotion	Number of people promoted	Annually	Performance improvement	BWB	Motivation and promotion done by 100%	20,000,000
		Promoting staff to take annual leave	Number of leave forms leaved	Annually	No staff going for annual leave	HR Unit	Staff promoted to take annual leave by 100%	60,000,000
		Training and capacity building	Number of trainings conducted	Quarterly	Performance improvement	HR Unit	Training and capacity building implemented by 75%	30,000,000
		Filling OPRAS form	Number of forms filled	Annually	Performance improved	HR Unit	OPRAS form Filled by 100%	30,000,000



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		Prepare job description	Number of job description prepared	Annually	Activities implemented as per job description	BWB	Job description prepared by 100%	20,000,000
6	Strengthened regulations and compliance	Prepare warning sign board	Number of sign board prepared	Annually	Sign board installed and people abide to law and regulations	BWB	Warning sign board prepared by 100%	10,000,000
		Conduct inspection to for different users for compliance	Number of inspections conducted	Quarterly	customers complying	BWB	Inspection to for different users for compliance conducted by 75%	30,000,000
		Demarcation of water sources (buffer zone)	Number of beacons prepared. Area restored	Annually	Beacons installed and people abide to law and regulations Water sources gazetted	BWB	Water sources (buffer zone) demarcated by 75%	



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		Collection of water samples	Number of samples collected	Quarterly	Water quality reports	BWB	Water samples collected by 75%	30,000,000
7	Capacity building	Conduct in-house and long-term training	Number of trainings conducted	Quarterly	Performance improved	BWB	In-house and long-term training conducted by 75%	20,000,000
		Equip staff with modern working tools	Number of working tools provided	Annually	Performance improved	BWB	Equipped staff with modern working tools by 75%	50,000,000
		Provide good working environment	Number of offices available	Annually	Conducive working environment	BWB	Provided good working environment by 100%	20,000,000
8	Sustainable financing ensured	Visit to unpaid customers	Number of visits to customers	Twice are year	Customer paying fees	BWB	unpaid customers visited by 100%	20,000,000
		Press conference (Awareness)	Number of press conference	Quarterly	Increase customers to comply to fees payments	BWB	Press conference conducted by 100%	20,000,000



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		Identify illegal customers	Number of illegal customers identified	Twice a year	Permit applications	WRM Depart, CS Depart, Finance	Illegal customers identified by 100%	10,000,000
		Total						231,000,000



5.10 NOTE: The 8 Key Objectives were demand driven by the Wami-Ruvu Basin

5.10.1. DATA COLLECTION METHODS, SOURCES, MONITORING, EVALUATION, ROLES AND RESPONSIBILITIES

For the purpose of Monitoring and evaluation of project activities, it is important to establish the data collection methods and sources, and monitoring and evaluation roles and responsibilities for each project indicator. For the purpose of this assignment, the indicators for each key project objective in Table 5.10.1 shows the data source, timing and the data manager for monitoring and evaluation of Strategic Action Plan for attaining SDG 6.5.1.

Table 5.10.1: Data collection methods and sources; monitoring and evaluation roles

S/n	Indicator	Data source	Timing	Data Manager/Actor
1	Number of stakeholders attended the forum	Forum attendance sheet	Once per year	Catchment and WUA coordination Dept
2	Number of people attended the meeting	Meeting attendance sheets	Four times per year(quarterly)	Catchment and WUA coordination Dept
3	Number of media engaged	Contract of media engaged	Eight times per year	Communication and customer relation Unit
4	Number of forums conducted	Forum attendance sheet	Twice per year	Catchment and WUA coordination Dept
5	Number of materials disseminated	Report on dissemination	Quarterly	Communication and customer relation Unit
6	Number of functional hydrometric stations	Report on functional hydrometric stations	Quarterly	Water Resources Management Dept



S/n	Indicator	Data source	Timing	Data Manager/Actor
7	Number of functional GW monitoring stations	Report on functional GW monitoring stations	Quarterly	Water Resources Management Dept
8	Work plan & Budget prepared	Work plan & Budget	Annually	Corporate Service Dept
9	Number of water resources parameters collected	Report on water parameters collected	Quarterly	Water Resources Management Dept
10	Number of data processed and shared	Report on data processed and shared	Quarterly	Water Resources Management Dept
11	Number of proposals prepared	Report on proposal prepared	Quarterly	Corporate Service Dept
12	Number of bills prepared and disseminated	Report on bills prepared and disseminated	Annually	Accountant -
13	Number of reminders prepared and disseminated	Reports on reminders prepared and disseminated	Annually	Accountant
14	Number of people promoted	Human resource promotion report	Annually	Human Resource Manager
15	Number of leave form leaved	Human resource leave report	Annually	Human Resource Manager
16	Number of trainings conducted	Training attendance sheet	Quarterly	Human Resource Manager



S/n	Indicator	Data source	Timing	Data Manager/Actor
17	Number of forms filled	Report on forms filled	Annually	Activity Manager
18	Number of job description prepared	Human resource job description report	Annually	Human Resource Manager
19	Number of sign board prepared	Report sign board prepared	Annually	Water Resources Manager
20	Number of inspections conducted	Report on inspection conducted	Quarterly	Water Resources Manager
21	Number of working tools provided	Working tools provision report	Annually	Activity Manager
22	Number of offices available	Facility report	Annually	Human Resource Manager
23	Number of visits to customers	Signed visits sheets	After every six months	Human Resource Manager
24	Number of press conference	Conference attendance sheets	After every six months	Head-Communication and customer relation Unit
25	Number of illegal customers identified	Report on illegal customers identified	After every six months	Head – Water allocation section/PME
26	Numbers of documentaries prepared.	Numbers of documentaries prepared.	Quarterly	Head - Communication and customer relation Unit
27	Number of adverts and jingles prepared	Number of adverts and jingles prepared	Quarterly	Head - Communication and customer relation Unit



S/n	Indicator	Data source	Timing	Data Manager/Actor
28	Numbers of Tv and radio programs sponsored.	Reports	Quarterly	Head - Communication and customer relation Unit
29	Number of events	No, awareness materials disseminated, registration books, reports	Once per year	Head - Communication and customer relation Unit
30	Number of programs aired	Reports	Quarterly	Head - Communication and customer relation Unit
31	Number of beacons prepared. Area restored	Annually	Beacons installed and people abide to law and regulations. Water sources gazzeted.	Manager – Water Resources Department
32.	Number of dams and weirs constructed	Annually	Availability of water	Manager - WRM Depart

5.10.2. DATA ANALYSIS PLAN AND REPORTING

The monitoring and evaluation supposed to include a section showing details about what data will be analyzed and how the results will be presented. However, the evaluators can perform any statistical tests to get the needed results. Once the data have been collected, the analyst will need to compile and analyze it to fit in a results table for internal review and external reporting. The given blank table 5.10.2 will be used by the Wami-Ruvu Basin Office for this task.

Table 5.10.2: Data Analysis Plan and Reporting

S/n	Indicator	Baseline	Year	Lifetime target	% of target achieved
1	Number of stakeholders attended the forum				



S/n	Indicator	Baseline	Year	Lifetime target	% of target achieved
2	Number of people attended the meeting				
3	Number of media engaged				
4	Number of forum conducted				
5	Number of material disseminated				
6	Number of functional hydrometric stations				
7	Number of functional GW monitoring stations				
8	Work plan & Budget prepared				
9	Number of water resources parameters collected				
10	Number of data processed and shared				
11	Number of proposal prepared				
12	Number of bills prepared and disseminated				
13	Number of reminders prepared and disseminated				
14	Number of people promoted				



S/n	Indicator	Baseline	Year	Lifetime target	% of target achieved
15	Number of leave form leaved				
16	Number of trainings conducted				
17	Number of forms filled				
18	Number of job description prepared				
19	Number of sign board prepared				
20	Number of inspections conducted				
21	Number of working tools provided				
22	Number of offices available				
23	Number of visits to customers				
24	Number of press conference				
25	Number of illegal customers identified				

5.10.3. DISSEMINATION AND REPORTING

Data collected should be disseminate to all potential stakeholders who have influence in ensuring water resources management is enhanced at the basin. This will include the success and progress of the project, modifications and corrections done on the course of implementing the project; and the way forward for improving the project implementation practices and make it more effective for attaining the objectives. The Monitoring and evaluation should include plans for internal dissemination among the project team as well as project stakeholders. For this project,



workshops, meetings, forums, leaflets, electronic sharing will be used for disseminating and reporting project results.

5.10.4. IMPLEMENTATION STRATEGIES

For effective implementation of the Monitoring and Evaluation Strategic Action Plan, feasible Implementation strategies are paramount:-

- (i) Wami-Ruvu basin should identify itself as a key stakeholder in implementing all activities.
- (ii) Capacity building (training on software uses, proposal writing; planning, monitoring and evaluation; and procurement and contract management) to basin staff should be done to enhance their capacities in executing their daily activities.
- (iii) Carrying out awareness programmes on payment of water user fees and management of water resource
- (iv) Enhance efforts on debt recovery so as to increase revenue collections for facilitating implementation of basin activities
- (v) Review water user charges to reflect the existing costs in running the basin activities
- (vi) Promotion, adoption and use of Government Electronic Payment Gateway (GePG).
- (vii) Preparation of Project Proposals by various Wami-Ruvu basin departments for submission to potential funders who can finance some project activities.
- (viii) Water User Associations (URT, 2009) be promoted through provision of Income Generating Activities.
- (ix) Cost related to the implementation of project objectives should be incorporated during the national budget for 2022/2023.

5.11 POTENTIAL STAKEHOLDERS IN IMPLEMENTATION OF IWRM IN WAMI/RUVU BASIN

5.11.1. ROLES IN IMPLEMENTATION OF IWRM

The Implementation of IWRM in the Wami-Ruvu Basin is done in collaboration with various stakeholders from both public and private sectors including Water Supply and Sanitation Authorities, Local Government Authorities, Irrigators, Industries, National Parks, Higher Learning Institutions, Mfuko wa Taifa Wa Maji, Ministry of Water, Sadani National Park Authority, Mtibwa Sugar Estate LTD, Chalinze Wami Water Treatment Plant and Supply Scheme, International Union for Conservation of Nature (IUCN); Ministry of Agriculture, Livestock and Fisheries, local communities etc. Roles played by the stakeholders include participating in raising awareness on water resource management, ensure sustainability of efficient and sustainable technology in irrigation, managing and resolve conflicts on water use and participate in national events (for example Maji week, Environmental Week etc.). The Medium-Term Strategic Plan 2021/2022 – 2025/26 details stakeholder's analysis at the basin on services offered, expectation and potential risks as per Table 5.11.1. This is important for undertaking various IWRM activities at the Wami-Ruvu Basin.

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Table 5.11.1: Stakeholder Analysis

No.	Stakeholder	Services Offered	Expectation	Potential Risks if Expectation not met
1	Water Supply Authorities	<ul style="list-style-type: none"> Water use and discharge permits 	<ul style="list-style-type: none"> Protection of water sources Surface water and groundwater information (quality and quantity) Timely water use/Discharge Permit 	<ul style="list-style-type: none"> Increased Non- Payment of water use fee. Increase of Cost in water treatment increased water use conflicts
2	Irrigators, Mining companies, Aquacultures, Industries, Fishermen and Hotels.	<ul style="list-style-type: none"> Water use and discharge permits 	<ul style="list-style-type: none"> Protection of water sources Surface water and groundwater information (quality and quantity) Timely water use/Discharge Permit Education on water use efficiency technologies 	<ul style="list-style-type: none"> Increased Non- Payment of water use fee. Will affect sustainability of water sources Low compliance on water use permits conditions. Increased number of water use conflict among water users Increase in water pollution
3	Borehole drilling companies	<ul style="list-style-type: none"> Geophysical survey Drilling permit 	<ul style="list-style-type: none"> Groundwater information Expertise Ground water mapping Drilling borehole permit 	<ul style="list-style-type: none"> Dry boreholes Depletion of aquifer Increased ground water use conflicts Increase in ground water pollution



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No.	Stakeholder	Services Offered	Expectation	Potential Risks if Expectation not met
4	Ministry of Water	<ul style="list-style-type: none"> Water Resources Management 	<ul style="list-style-type: none"> Adhering to Water Policy, Legislation and guidelines. Implementation of IWRMD Plan To provide Reports Promptly/timely conflict resolution. Increase revenue collections 	<ul style="list-style-type: none"> Loss of credibility Restructuring of governing Basin WaterBoard. Failure to achieve basin goals. Depletion of water sources.
5	NEMC, Research Institutions, TMA, Universities and Local Government Authorities (LGAs)	<ul style="list-style-type: none"> Sharing of basin water resources data and information 	<ul style="list-style-type: none"> Partnership and Collaboration Data/Information sharing Capacity building 	<ul style="list-style-type: none"> Loss of credibility Uncoordinated Plans Failure to incorporate WRM issues in their plans Improper informed decision on water management



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No.	Stakeholder	Services Offered	Expectation	Potential Risks if Expectation not met
6	Water Users Associations and Catchments Water Committees	<ul style="list-style-type: none"> Guideline on water resources management and protection Capacity building 	<ul style="list-style-type: none"> Capacity building on IWRM, leadership skills, financial management, working facilities Timely Registration Timely conflict resolution Financial support collaboration 	<ul style="list-style-type: none"> Increased Non-compliance. Depletion of Water Resources Increased number of water use conflict among water users
7	Media	<ul style="list-style-type: none"> Provision of Basin water resources information 	<ul style="list-style-type: none"> Information sharing Awareness rising. 	<ul style="list-style-type: none"> Imbalanced reporting/ distortion Wrong interpretation of water resources Delay of water information/data to public
8	Politicians	<ul style="list-style-type: none"> Implementation of water policy and legislation. 	<ul style="list-style-type: none"> Information sharing Awareness raising 	<ul style="list-style-type: none"> Wrong image to the Public Distortion of information Unwillingness to implement water resources management projects
9	NGOs	<ul style="list-style-type: none"> Provision of Basin water Resources data and information 	<ul style="list-style-type: none"> Collaboration Data and information sharing 	<ul style="list-style-type: none"> Duplication of efforts



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No.	Stakeholder	Services Offered	Expectation	Potential Risks if Expectation not met
10	Development Partners	<ul style="list-style-type: none"> Provision of Basin water Resources data and information 	<ul style="list-style-type: none"> Collaboration Information sharing 	<ul style="list-style-type: none"> Loss of Credibility Withdraw of financial support.
11	Religious leaders, Police, Judiciary, community leaders	<ul style="list-style-type: none"> Provision of Basin water resources information 	<ul style="list-style-type: none"> Information sharing Awareness creation 	<ul style="list-style-type: none"> Encroachment of watersources Water use conflicts
12	Basin WaterBoard Staff	<ul style="list-style-type: none"> Conducive working environment Capacity building 	<ul style="list-style-type: none"> Conducive working environment Reasonable staff welfare 	<ul style="list-style-type: none"> Decreased productivity Increased complaints and morale Increased staff turnover
13	Board members	<ul style="list-style-type: none"> Good Basin performance 	<ul style="list-style-type: none"> Training and capacitybuilding Timely Board meeting Credible reports from the basin 	<ul style="list-style-type: none"> Wrong image to public due to non-issuance of permits. Loss of Strategic Directives



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5.12 CHALLENGES FOR STAKEHOLDERS IN IMPLEMENTATION OF IWRM IN THE BASIN

Climate change has been identified as a major challenge in the management of water resources in the basin owing to its devastating impacts on water resources at the basin scale. Other challenges include; increase in water demand due to population increase, expansion in agriculture sector and industrial development; water use conflicts among farmers and livestock keepers, insufficient knowledge on Integrated Water Resource Management among water beneficiaries. Literature shows that in 2012/2013, of the 24 water use conflicts reported in all nine water basins in Tanzania, five (5) were observed in Wami-Ruvu basin¹⁸.

5.13 STRATEGIES IN PLACE TO COUNTER ACT THE OBSERVED CHALLENGES IN THE BASIN

During the survey at the Wami-Ruvu basin offices it was observed that there are some strategies in place to counter act the challenges. These include; providing awareness to stakeholders on climate change impacts, coping and adaptation mechanisms, involve potential stakeholders in the implementation of IWRM, and harmonization of interrelated laws and policies managing water resources in the country as well as at a global level. Moreover, the Wami-Ruvu Basin medium term strategic plan 2021/2022 – 2025/26 aimed to achieve results in (8) strategic areas namely: (i) Increase efficiency in water allocation and water use fee collection (ii) strengthen water resources protection and conservation (iii) enhance stakeholders engagement and public awareness for water resources management (iv) strengthen WRBWB financial resources and funding (v) improve institutional capacity of the board to implement its functions (vi) implement actions to address corruption (vii) implement interventions on HIV/AIDS and con-communicable diseases and (viii) promote and strengthen water governance institutions¹⁹. This implies that implementation of IWRM activities for the next five years has given more attention at the basin level. Human and Financial Resources at the Basin

5.13.1. HUMAN RESOURCE

The human resource capacity at the basin scale has shown to be adequate as per details in Table 5.13.1. The table indicates number of staff and the professionals required as per basin establishment requirements against the available staff. Understanding of human resource capacity at the basin scale is of paramount importance for undertaking the monitoring and internal evaluation of project activities at the basin. For compliance to Environmental

¹⁸ United Republic of Tanzania, 2013. Ministry of Water. Water Sector Development Programme

¹⁹ United Republic of Tanzania 2021. Wami-Ruvu Medium Term Strategic Plan 2021/2022 – 2025/26



Management Act, Environmental Policy and other sectorial policies and regulations, there is a high need of employing the lawyer at the basin office who will ensure effective implementation of the laws and regulation government the operationalization of basin activities. Expertise of human resources at the basin should be fulfilled as per requirements so as to ensure effective execution of various activities.

Table 5.13.1: Human Resource Capacity at the Basin

No	Specialty	Required human resource	Available Human Resource	Deficit
1.	Water Engineer	01	01	-
2	Human Resource Officer	02	01	01
3	Secretary	03	01	02
4	Records	02	01	01
5	Hydrologist	03	03	-
6	Hydro-geologist	06	06	-
7	Technician hydrologist	23	23	-
8	Technician hydro geologist	10	06	04
9	Engineers	06	06	-
10	Community Development Officers	08	08	-
11	Environmental Officers	03	-	03
12	Environmental Engineer	02	01	01
13	Lawyer	01	-	01
14	Accountants	06	04	02
15	Procurement Officers	06	03	03
16	Assistant Procurement Officers	02	02	-



No	Specialty	Required human resource	Available Human Resource	Deficit
17	ICT	01	-	01
18	Laboratory Technician	08	04	04
19	Chemistry		-	01
19	Drivers		-	06
21	Office assistants	01	-	01
22	Journalist			

5.13.2. FINANCIAL RESOURCE

Over years the Wami-Ruvu basin has been receiving financial resources from the government of Tanzania. Statistics shows that there is a small difference between the approved government budget and the actual amount received as per Table 5.13.2. Although in 2020/2021 there was a big difference of 30% of the amount received compared to other years. This difference could significantly affect the implementation of various activities at the basin and therefore financial resource allocation should be given more priority for ensuring effective implementation of the activities at the basin.

Table 5.13.2: Approved Budget and Actual Amount Received at the Wami-Ruvu Basin

S/N	Year	Approved Government Budget	Actual Amount Received at the Basin	Difference of the Amount Received at the Basin	% Difference	Reason of the Difference
1	2020/2021	3,750,000,000	2,629,357,261	1,120,642,738	30	Insufficient working tools, change in collection policies
2	2019/2020	2,320,000,000	1,934,410,300	385,589,700	17	Insufficient working tools and human resources/staff
3	2018/2019	2,665,500,000	2,225,542,660	439,957,340	16	Insufficient working tools and human resources/staff



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4	2017/ 2018	950,000,000	857,503,190	92,496,810	10	Insufficient working tools and human resources/staff
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5.14 MULTI-SECTORIAL WATER RESOURCE MANAGEMENT POWER AND FUNCTIONS AT THE BASIN

The National Water Resource Management Act, 2009 stipulate clearly the roles of various actors (such as Director of water resources, National Water Board, Basin water Boards) to ensure effective management of water resources in the country as well as trans-boundary water resources. Understanding the powers and functions of the actors is important for ensuring effective implementation of the Monitoring and Evaluation Strategic Action Plan at Wami-Ruvu Basin. This is due to the fact that each actor shall play the roles as per the Act for enhancing effective implementation of the OWRM.

5.14.1. THE DIRECTOR OF WATER RESOURCES

In Matters pertaining to sustainable management of water resources, the director shall:-

- a) Co-ordinate activities of basin water Boards,
- b) Conduct national water resources management planning and implementation strategy
- c) Oversee water basin planning and management
- d) Integrate inter-sectorial coordination and planning on aspects that may have impact on water resources
- e) Evaluate existing and proposed policies and activities of the government ministries and agencies relating to the allocation, management and protection of water resources and on the basis of that formulate policies and programmes aiming at management and development of water resources and control of water pollution
- f) Ensure the water resource management operates according to the principles of environmental sustainability
- g) Supervise and co-ordinate the activities of Basin Water Boards and serve as a link channel of communication between these bodies and the government
- h) Resolve inter-sectorial and inter basin conflicts
- i) Supervise and coordinate data collection and national water resources and assessment
- j) Determine national investment priorities and financial patterns on water resources



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- k) Co-ordinate and harmonize externally funded projects and programmes affecting water resources
- l) Facilitate the conduct of water audits and provide technical support in terms of information, tools, basin models and decision support systems.

5.14.2. NATIONAL WATER BOARD

The national water board shall have the following powers and functions to-

- a) Examine any matter which may be referred to it by the Minister or any other Ministry relating to sustainable management of water resources and shall recommend to the Minister of the sector Ministry, as the case may be such action as is necessary for achieving the objectives
- b) Advise on investment priorities and financing patterns and co-ordinate and harmonize externally funded projects and programmes affecting water resources
- c) Advice on integration of inter-sectoral water resources assessment and planning
- d) Advise coordination of basin planning and management
- e) Advice on inter-sectoral or inter basin conflicts
- f) Advice on trans-boundary water resources management
- g) Recommend to the Minister legislative measures for the management of water resources and effective control of water pollution
- h) Liase wit the director of technical matters
- i) Prepare the bi-annual report on the state of the water resources; and
- j) Perform such water resources advisory functions as the Minister may deem necessary

5.14.3. BASIN WATER BOARDS

The basin water boards shall have the following powers and functions to-

- a) Prepare basin water resources management plans, projects, budgets and its implementation strategy
- b) Integrate district plans into basin water resource management plans
- c) Provide guidelines and standards for construction and maintenance of water resource structures
- d) Monitor, evaluate and approve construction and maintenance of water resource structures
- e) Collect, process and analyze data for water resource management



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- f) Maintain and update assessment of the availability and potential demand for water resources
- g) Approve, issue and revoke water use and discharge permits
- h) Maintain water register in accordance with section 78
- i) Monitor and enforce water use and discharge permits and pollution prevention measures
- j) Resolve intra-basin conflicts
- k) Implement water resources management projects and programmes
- l) Coordinate the inter-sectoral water resource management at the basin level and serve as a channel of communication
- m) Advise the Director on technical aspects of trans-boundary water issues in the basin
- n) Appointment of Chairman and members of the Catchment and Sub-catchment Committee
- o) Prepare reports on the state of water resources in a basin

5.15 CONCLUSION

Development of this Monitoring and Evaluation Strategic Action Plan was developed in a participatory manner. Various key stakeholders for Wami-Ruvu basin were involved to create ownership of this work and therefore, implementation of IWRM at the basin scale has necessary tools to achieve its objectives.



Annexes

6.1 ANNEX 1: DATA COLLECTION INSTRUMENTS (QUESTIONNAIRE AND INTERVIEW QUESTIONS)

6.1.1. QUESTIONNAIRE FOR THE DEVELOPMENT OF RESOURCES MOBILIZATION STRATEGIC ACTION PLAN FOR ACHIEVING SDG6.5.1 IN RIVER BASIN IN TANZANIA

SECTION 1: UNDERSTAND IMMEDIATE TARGET AREAS/ INTEREST FOR SDGs IMPLEMENTATION IN BASIN OFFICES

- 1.1 What are the Key target areas of interest for immediate action?
- 1.2 Estimate Resource Needs at your basin

SECTION 2: ASSESSMENT OF THE PAST & CURRENT RESOURCE MOBILIZATION STRATEGIES

- 2.1 What are the potential sources of funds at your basin?
- 2.2 Do you have any Resources mobilization structure (e.g special department dealing with resources mobilization issues?)
- 2.3 What are the existing partners at your basin?
- 2.4 What are the potential partners to collaborate with in your basin for achieving of SDG6.5.1 IWRM implementation?

SECTION 3: BASINS RESOURCES MOBILIZATION DEVELOPMENT CONTEXT

- 3.1 Development of basins and partners' framework
- 3.2 Does your basin staff have Professional development like: tools, guidelines, manuals and training for resources mobilization?
- 3.3 Does the basin staff have a Technical capacity of developing the bankable proposals?
- 3.4 Previous efforts on securing funds: Successful proposals developed by Basins with partners for the past 5years



- 3.5 Have the basin staff ever acquired a training on bankable proposal writing? If yes, how does the staff apply the skills acquired from the training on development of bankable proposals?
- 3.6 Other skills development on resources mobilization in the basin e. training
- 3.7 What are the capacity required for developing the bankable projects (what capacity is required)?
- 3.8 What are the resources mobilization challenges facing the basins

SECTION 4: THE WAY FORWARD

- 4.1 Proposed needs for facilitating access and management of resources for the basins.

6.1.2.QUESTIONNAIRES: KNOWLEDGE MANAGEMENT

- 1. Do you have skilled KM designated person responsible for implementing Knowledge Management activities? A: if yes, tell us what his / her roles are. If No tell us who does the KM activities, how KM is implemented in your organization.

- 2. How does your Institution familiar with concepts of Knowledge Management and implementation of Knowledge Management activities?

- 3. **Indigenous Knowledge:** How are you going to identify, collect (harvested), synthesize, store and share (disseminate) knowledge including indigenous knowledge?

- 4. Do you have Knowledge Management strategy and or communication strategy? (Yes/No). Tell us how do you capture and document IWRM lessons in your institution/organization



5. How a culture supporting KM can be created? How can people with knowledge stop working in silos or walking with knowledge in their heads, instead willingly share what they know?

6. Tell us of any available opportunities for improved knowledge management and exchange for IWRM issues.

7. Do you in your organisation face any capacity gaps on Knowledge Management? Please mention the gaps and explain how would you prefer to receive support on addressing the gaps

8. Media plays a big role in informing the public about IWRM issues. How are you going to engage media (Media engagement) in knowledge exchange of IWRM activities?

9. How do you capture knowledge, store it and share it with your audiences?

10. Information produced being 'too technical', how can you make simple, user friendly? Adding 'journalistic flavor'?



11. What do you see as the main challenges for knowledge management in your institutions? _____

12. How are you going to share/ exchange knowledge harvested from IWRM activities? (Written materials, CDs, videos, social media pages hashtags, WhatsApp status...)

13. Do you have a website? A: Yes/ No/ under construction. If you have website, what are the contents uploaded? (News, success stories, databases, archives, useful links, others...)

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