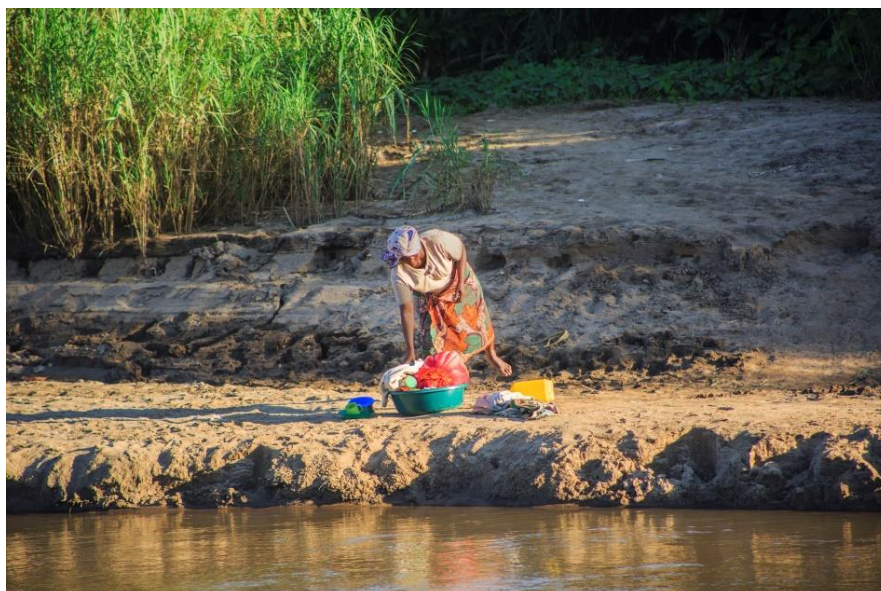


**UNITED REPUBLIC OF TANZANIA  
MINISTRY OF WATER  
WAMI/RUVU BASIN WATER BOARD**



*Water Sector Support Project Phase II in the Wami/Ruvu Basin*



**LIVELIHOOD RESTORATION AND REHABILITATION PLAN  
FOR RUVU, MVUHA AND MGETA RIVERS**

**WAMI/RUVU SAFEGUARD UNIT  
JANUARY 2022.**

## LIST OF ACRONYMS / ABBREVIATIONS

CAMFED	Campaign for Female Education
COP	Communally Owned Plots
DGO	District Game Officers
<b>GRM</b>	Grievance Redress Mechanism
HWC	Human-Wildlife Conflicts
LRRP	Livelihood Restoration and Rehabilitation Plan
MVIWATA	Mtandao wa Vikundi vya Wakulima Tanzania"smallholder farmers network"
PAP	Project Affected People/Parties
PFP	Private Farm Plots
WMA	Wildlife Management Area
RAS	Regional Administrative Secretariat
RUWASA	Rural Water Supply and Sanitation Agency
SAT	Sustainable Agriculture Tanzania
TAWA	Tanzania Wildlife Management Authority
TFS	Tanzania Forest Services Agency
TZs	Tanzanian Shilling
VGs	Village Game Scouts
WRBWB	Wami/Ruvu Basin Water Board
WRBWO	Wami/Ruvu Basin Water Office
WSSP -II	Water Sector Support Project - Phase II
WUA	Water User Associations

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## CHAPTER 1: INTRODUCTION

### 1.1 Background

This Livelihood Restoration and Rehabilitation Plan (LRRP) was prepared by a team of social experts in collaboration with members of the Safeguard Unit at the Wami/Ruvu Basin Water Board (WRBWB). The aim of the LRRP is to guide project activities along the Mvuha, Ruvu and Mgeta rivers, before and after installation of concrete beacons. The LRRP will also be used to guide implementation of other activities under the "Water Sector Support Project - Phase II" (WSSP-II). The WSSP-II is supported by the International Development Agency (IDA) of the World Bank Group. The WSSP-II is a five-year project started in 2017 and will end in 2022. The main objective of the WSSP-II is to improve Integrated Water Resources Management (IWRM) in Tanzania and increase access to Water Supply and Sanitation services in Dar es Salaam City. The IWRM component in the WSSP-II has three subcomponents which are **Institutional Strengthening, Hydromet Systems Strengthening and Water Security and Conservation**.

To ensure water resources are sustainably conserved, managed, and utilized for socio-economic development, protection of river buffers is critical. It is from this understanding the installation of concrete beacons was planned under the IWRM component and in the sub-component on **Water Security and Conservation**. In water resources management, stable buffer zones are critical to protect water resources, biodiversity and various ecosystem services. Globally, stable buffer zones are known to maintain basic aquatic processes in different riverine landscapes. If well protected, the buffer zones provide habitat for aquatic and semi-aquatic species, control flooding and flood-associated social risks. As aforementioned, stable river buffers can also guarantee provision of various valuable ecosystem services required for survival and development at local, national and international levels.

For years and in different river basins (including the Wami/Ruvu Basin), buffer zones have been destructed and degraded by unsustainable land use practices. The unsustainable land use practices are done along the river basins from upstream to downstream areas. To secure the buffer zones in the Wami/Ruvu Basin generally, and particularly along the Mvuha, Ruvu and Mgeta sub-catchments, installation of concrete beacons is deemed crucial. The installation of concrete beacons along Mvuha, Ruvu and Mgeta rivers will not affect any primary residential structures and will not result in physical displacement of any community member and any community asset (e.g. schools, dispensaries, churches, mosques, etc.). Physical displacement is avoided deliberately to avoid negative impacts on communities and their livelihood. Instead, the WSSP-II project team will provide guidance on types of sustainable land use practices along the river banks after installation of concrete beacons.

### 1.2 Rationale for the preparation of the LRRP

The proposed installation of concrete beacons will restrict some land uses done by villagers along the Mvuha, Ruvu and Mgeta rivers (Table 1). Regardless of scale, restriction to access some parts of the river banks will affect livelihood of villagers, especially the (PAPs). Some PAPs depend on the Mvuha, Ruvu and Mgeta rivers for

their livelihood (e.g. freshwater for domestic uses, irrigation, navigation, among several uses). To guide project activities before and after installation of concrete beacons, therefore, preparation of the LRRP was deemed necessary. The LRRP points out the measures that should be undertaken by the project team to avoid and/or minimize the impact on people (livelihood) and the environment during after installation of concrete beacons along the Mvuha, Ruvu and Mgeta rivers<sup>1</sup>.

The LRRP also points out different types of livelihood activities that will be permitted along the Mvuha, Ruvu and Mgeta rivers after installation of concrete beacons (Table 1). Preparation of the LRRP, was necessary to guide installation of concrete beacons in accordance with the World Bank Operational Policy on Involuntary Resettlement OP 4.12<sup>2</sup>. Similarly, the WSSP-II project team prepared the LRRP as a response to questions that were raised by the PAPs in village meetings and during site visits in a process to identify the PAPs and their plots. The LRRP was also prepared following the WSSP II Resettlement Management Framework. Some of the questions asked by the PAPs were related to:

- Access to farm plots. Which type (s) of crops will be permitted in different zones along the Mvuha, Ruvu and Mgeta rivers after installation of concrete beacons?
- Access to freshwater for various uses. Will the PAPs be permitted to access freshwater from the Mvuha, Ruvu and Mgeta rivers after installation of concrete beacons?
- Access to walking paths along the river banks (within 30-60 meters). Will the PAPs and other community members be permitted to walk along the river banks after installation of concrete beacons (continued use of existing walking paths)?
- Access to ritual sites along the Mgeta River (Bunduki village). Are the PAPs going to be permitted to access a ritual site at Bunduki village after installation of concrete beacons along the Mgeta River at Bunduki village?

These and similar other questions and concerns are responded in the LRRP. The entire process to gather inputs and prepare the LRRP engaged state and non-state stakeholders in a transparent manner (leaving no one behind)<sup>3,4,5,6</sup>. Wider-engagement of various stakeholders to prepare the LRRP was critical for sustainability of the project even beyond the WSSP-II life span<sup>7</sup>. *‘Water is necessary for people to*

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<sup>1</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-policies>

<sup>2</sup> OP 4.12, Annex A - Involuntary Resettlement Instruments.

[http://web.worldbank.org/archive/website01541/WEB/0\\_\\_C-390.HTM](http://web.worldbank.org/archive/website01541/WEB/0__C-390.HTM)

<sup>3</sup> <https://www.apm.org.uk/resources/find-a-resource/stakeholder-engagement/key-principles/>

<sup>4</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-policies>

<sup>5</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-policies>

<sup>6</sup> <https://www.apm.org.uk/resources/find-a-resource/stakeholder-engagement/key-principles/>

<sup>7</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-policies>

*live and therefore those that depend on a water resource should have the right to participate in decisions regarding its management*,<sup>8,9</sup>.

Legally, the Environmental Management Act of Tanzania, No. 20 of 2004 (EMA 2004)<sup>10</sup>, also requires all project implementation team to *'hold, where appropriate, public meetings with the affected parties and communities to explain the project and its effects, and to receive their oral or written comments, and (b), identify stockholder's main concerns'*. In most cases project design and implementation in the water sector have avoided been top-driven, and engineering-oriented. Rather, projects in the water sector have tried to embrace participatory processes by engaging appropriate stakeholders at different levels and at different stages of the project implementation.

The stakeholder engagement has remained a key element stipulated in the water sector development policies<sup>11</sup>, and several strategies in Tanzania<sup>12</sup>. On the objectives of water resources management in Tanzania, the Water Resources Management Act, 2009 also stipulate clearly on *e) promoting stakeholders' involvement in water resources management at all levels especially by ensuring decentralisation to the lowest possible level of government, consistent with available capacity at such level*<sup>13</sup>. The Transparent and wide engagement of stakeholders is highly recommended even in the Water Sector Development Programme (2006 – 2025)<sup>14</sup>.

**Table 1: Proposed livelihood activities that will be permitted after installation of concrete beacons along the Mvuha, Ruvu and Mgeta rivers**

Stage of River	Area to be conserved	Distance(m)	Activities
I	60 meters	0-20	No any land use will be permitted. A zone will be strictly protected, except installation of some infrastructure compatible with water resource management.
		20-40	Conservation friendly land uses, including planting water-user friendly trees (for water use efficiency). Avoid land use practices that involve regular weeding and clearing of vegetation (planting of bananas, yams, and spice crops, etc).
		40-60	Planting water-user friendly trees (including fruit tree), bee keeping, and sustainable land use practices (e.g. planting banana and yams).

<sup>8</sup> [https://www.gwp.org/en/learn/iwrm-toolbox/Management-Instruments/Modelling\\_and\\_decision\\_making/Stakeholder\\_analysis/](https://www.gwp.org/en/learn/iwrm-toolbox/Management-Instruments/Modelling_and_decision_making/Stakeholder_analysis/)

<sup>9</sup> <http://documents1.worldbank.org/curated/en/476161530217390609/ESF-Guidance-Note-10-Stakeholder-Engagement-and-Information-Disclosure-English.pdf>

<sup>10</sup> United Republic of Tanzania - THE ENVIRONMENTAL MANAGEMENT ACT, 2004 (Act No. 20 of 2004)- PART IV: THE ENVIRONMENTAL IMPACT ASSESSEMENT- Section 17 - Public participation

<sup>11</sup> Anders Arvidson & Mattias Nordström (2006). Water Sector Policy Review Paper, Stockholm Environment Institute

<sup>12</sup> United Republic of Tanzania- National Water Sector Development Strategy" 2006- 2015

<sup>13</sup> United Republic of Tanzania – The Water Resources Management Act, 2009

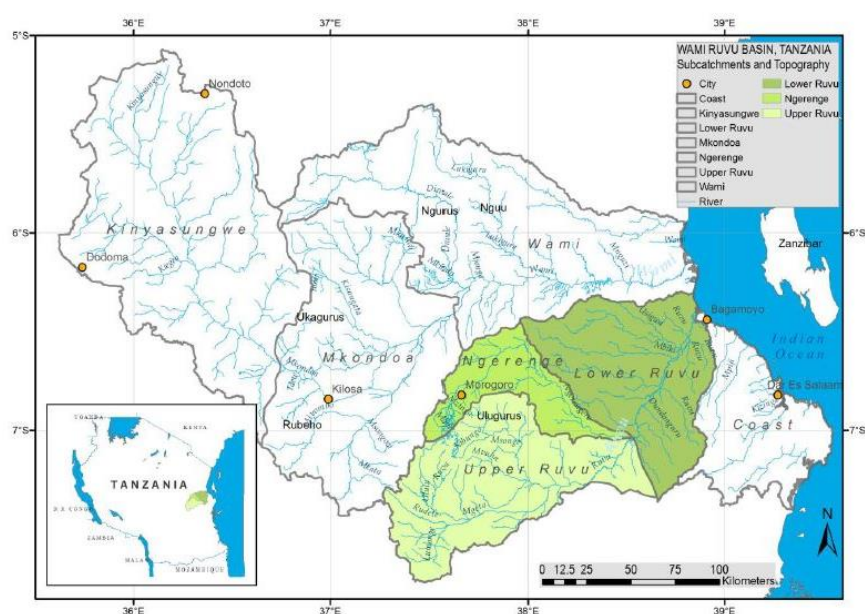
<sup>14</sup> United Republic of Tanzania- Ministry of Water- Water-Water Sector Development Programme (2006 – 2025)- 1.4 Sector Development Challenges: 1.4.7 Stakeholder and Private Sector Participation



<b>II</b>	30 meters	0-10	No any land use will be permitted. A zone will be strictly protected, except installation of some infrastructure to be permitted.
		10-30	Planting water-user friendly trees, bee keeping, and sustainable land use practices (e.g. planting leguminous crops like peas, beans, lentils and bananas)
<b>III</b>	15 meters	0-5	No any land use will be permitted. A zone will be strictly protected, except installation of some infrastructure to be permitted.
		5-15	Planting water-user friendly trees, bee keeping, and sustainable land use practices (e.g. planting leguminous crops like peas, beans, lentils and bananas)

### 1.3 Description of Project Location

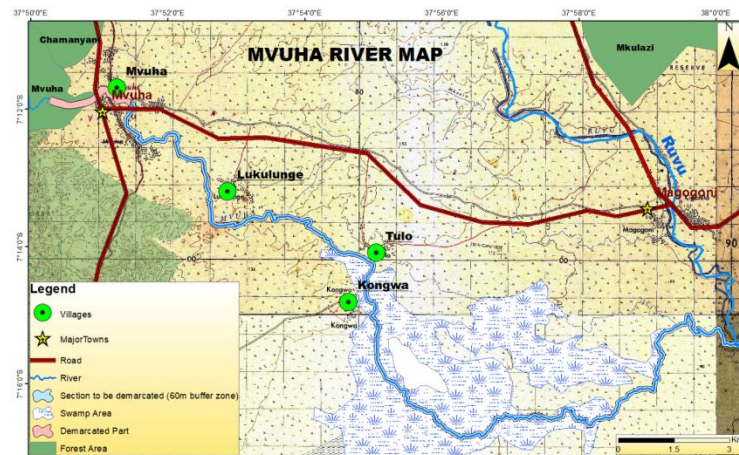
Mvuha, Ruvu and Mgeta rivers are part of the the Wami/Ruvu basin and the great Ruvu River Basin (**Plate 1**). The Ruvu River drains the Eastern Arc Mountains with a basin area of approximately 18,000 km<sup>2</sup>. Water from the Ruvu River are supplied in different areas and used for various purposes ranging from domestic uses, agriculture and industrial uses. Water supplied to the Dar es Salaam City for both domestic and industrial purposes are abstracted from lower Ruvu River. In other words, survival of the Dar es Salaam City (the Tanzania's largest commercial city), hugely depend on water supplied from the Ruvu River and its tributaries; including the Mvuha and Mgeta rivers.



**Plate 1: Location of Ruvu River Basin and the Ruvu River**

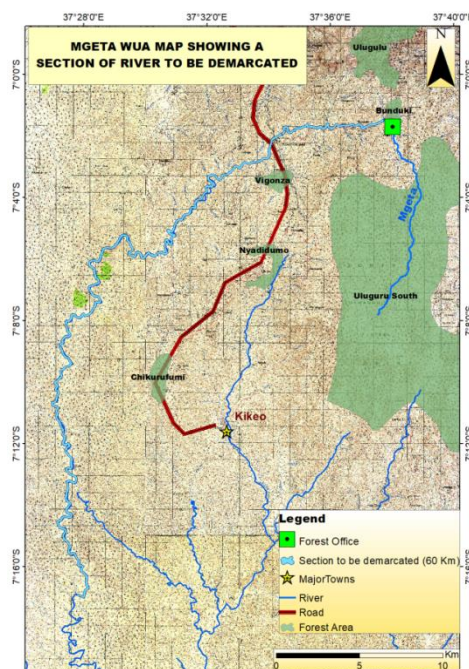
Mvuha River is about 61 km long and is located in upper Ruvu Sub- catchment (**Plate 2**). The Mvuha River originates from Kimhandu Hill (in a forest reserve) and flows through different villages such as Gweme, Lusange, Baga, Balani, Vihengele, Dala, Mvuha, Lukulunge, Tulo, Kongwa before it joins the Ruvu River. The Mgeta River originates from Tchenzema village in Uluguru Mountains (Uluguru South) and flow

though different villages such as Vinile, Lukuyu, Homboza, Bunduki, Kibaoni, Tandali, Lusungi, Pinde, Maguruwe, Masarawe, Kibigiri, Kododo and Yowe (**Plate 3**). The Ruvu River also originates from the Uluguru Mountains and crosses through villages such as Kibangile, Ngong'holo, Tununguo, Kisanga, Tulo, Magogoni, Kiganila and Bwila juu (**Table 1**).



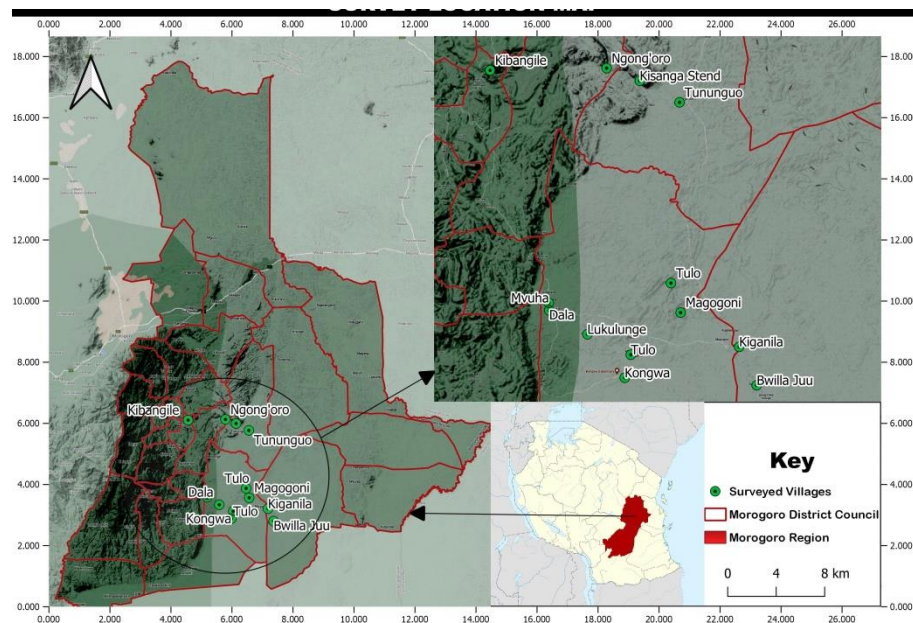
**Plate 2: Location of the Mvuha River and villages to be installed concrete beacons**

The installation of concrete beacons targets approximately 170 km; *i.e.* 50 km along the Mvuha River, 60 km along the Ruvu River and, 60 km along the Ruvu River. The targeted villages along the 170 km are shown on **Table 2**.



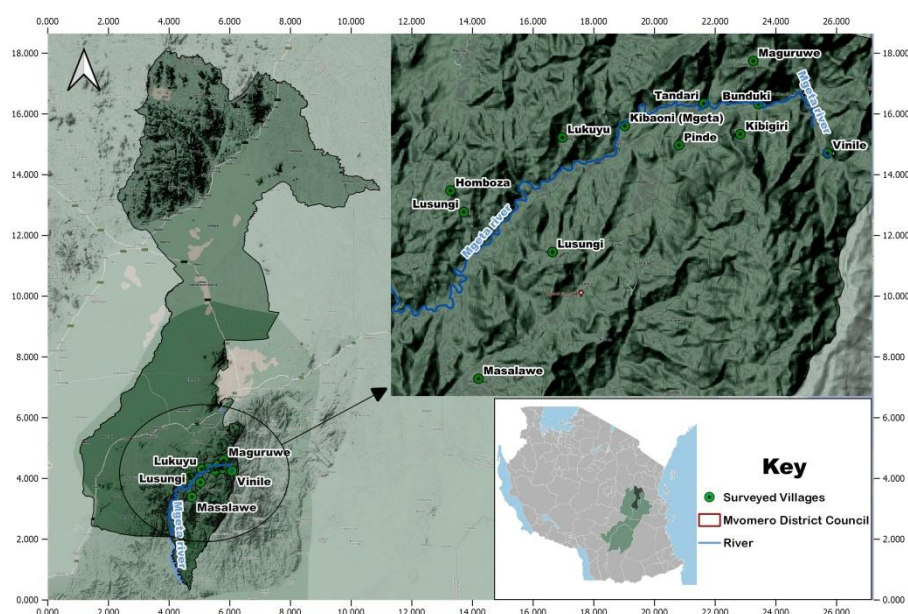
**Plate 3: Location of the Mgeta River and some villages to be installed concrete beacons**

Administratively, the Mvuha, Ruvu and Mgeta rivers are found in Morogoro Region. The Mvuha and Ruvu rivers are found in Morogoro District while the Mgeta River is mainly found in Mvomero District (**Plate 4 and 5**).



**Plate 4: A map showing Morogoro District and some project villages**

At some point, the Mgeta River also gets into the Morogoro District at its confluence with the Ruvu River, Mikula area (IH3 gauging station) within the proposed Kidunda dam (former Kibulumo village). Some parts of the Mgeta River are largely found in Mvomero District and some parts in Morogoro District (Plate 5).



**Plate 5: A map showing Mvomero District and some project villages**



## **CHAPTER 2: SOCIO-ECONOMIC CHARACTERISTICS OF THE PROJECT AREA IN RELATION TO THE PROJECT AFFECTED PEOPLE**

This chapter presents the socio-economic characteristics of villages in which the Project Affected People/Parties (PAPs) were identified and consulted along the Mvuha River (50 km), Ruvu River (60 km) and Mgeta River (60 km). The project team consulted all PAPs in Morogoro and Mvomero districts in Morogoro Region (**Table 2**). Specifically, the chapter presents information related to socio-economic activities conducted by the PAPs, ethnicity and migration patterns, population size and social services in the project targeted villages (**Table 2**).

**Table 2: Villages along the Mvuha, Ruvu and Mgeta rivers where the PAPs were identified and consulted**

<b>S/N</b>	<b>Mvuha River villages</b>	<b>Ruvu River villages</b>	<b>Mgeta River villages</b>
1.	Dala	Kibangile	Vinile
2.	Mvuha	Ngong'olo	Lukuyu,
3.	Lukulunge	Tununguo	Homboza
4.	Magogoni	Kisanga	Bunduki
5.	Tulo	Kiganila	Kibaoni
6.	Kongwa	Bwira juu	Tandali
7.			Lusungi
8.			Pinde
9.			Maguruwe
10.			Masalawe
11.			Kibigiri
12.			Kododo
13.			Yowe

### **2.1. Socio-economic activities**

Major socio-economic activities in villages along the Mvuha, Ruvu and Mgeta rivers include crop farming, livestock keeping, fishing, petty businesses, and small-scale mining. A detailed summary of socio-economic activities conducted by the PAPs is presented in Table 5.

#### **2.1.1 Crop Farming**

Crop farming is the major socio-economic activity in all villages along the Mvuha, Ruvu and Mgeta rivers (**Plate 6**). More than 80% of adult population depends on subsistence agriculture. The agriculture is important for food production and food security as well as source of income in most households<sup>15</sup>. Maize, paddy/rice, cassava, sorghum are major food crops while sesame, spices, sunflower and coconut trees are cash crops. From 1994 onwards farmers started growing sesame as a potential cash

<sup>15</sup> Morogoro District Council Five Year Development Plan, 2016/2017 – 2020/2021.

crop<sup>16</sup>. However, sesame market is not very reliable. The only market available currently is Dar es Salaam City. It is very difficult for farmers to get actual price for sesame in Dar es Salaam market and the only source of price information is the traders who come to buy sesame in the villages. Prices of sesame is low and highly fluctuates. Some crops, however, such as banana, mangoes, sugarcane, legumes, and millet have commercial values despite being food crops.

Rain-fed farming and dry-season irrigation dominates in the villages along the Mvuha, Ruvu rivers. The cropping cycle follows the rainfall pattern of the area with the main growing season covering the period from late February early March to July/August. Second planting of maize is also done in October and coincides with the short rains in November/December. Maize planted in October are harvested in late January. Major irrigation schemes in the targeted villages include Mbarangwe irrigation scheme (in Tununguo Village) and Tulo- Kongwa irrigation scheme along the Mvuha/Ruvu rivers.

Some farming-related challenges facing the PAPs along the Mvuha, Ruvu and Mgeta rivers include poor farming technologies, drought and crop raiding mainly by velvet monkeys. Post-harvest crop losses is another problem mainly caused by poor storage facilities. Regarding marketing-related challenges, the PAPs are also affected by poor marketing system. Local traders offer very low prices. Partly, low prices offered to the villagers is caused by low bargaining power of farmers<sup>17</sup>. Scanty market information could be another factor affecting bargaining power by farmers. Most farmers do not have price information from other sources than from local traders in villages.



**Plate 6: Photos showing some farming activities at Lukulunge (left) and Tulo villages (right) along the Mvuha River (Photo: Kalumanga, 2021)**

### **2.1.2 Livestock Keeping**

Livestock keeping is among major livelihood activities in villages along the Mvuha and Ruvu rivers especially in Kongwa, Tulo, Tununguo and Dala villages (**Table 3; Plate**

<sup>16</sup> GTZ 2001.

<sup>17</sup> Baseline survey of the Eastern pilot Wildlife Management Areas Report, 2003

7). Due to the terrain and altitude, livestock keeping is challenging in most villages along the Mgeta Rivers. Cattle, goats, sheep, donkeys, indigenous chicken are main livestock kept along the Mvuha and Ruvu rivers. Pigs, goats together with chicken broilers and layers are also kept along the Mgeta River.

**Table 3: Livestock Population in selected villages along by the Mvuha and Ruvu River (2020)**

Ward	Cattle	Goats	Sheep	Donkeys	Pigs	Indigenous chicken	Chicken
Kisanga	6	0	0	0	1622	2200	164
Mvuha	16222	3263	1049	53	203	14122	0
Kivukoni	10713	5721	3234	138	84	4119	0
Bwakila Chini	12675	1780	1515	36	321	20112	0
Bwakila Juu	12	320	173	0	1622	2200	164
Tununguo	15742	9650	5700	123	148	5020	55

**Source: Morogoro District Socio-Economic Profile, 2019.**



**Plate 7: A photo showing livestock farming activities at Lukulunge (left) and Tulo villages (right) along the Mvuha River (Photo: Kalumanga, 2021).**

### 2.1.3 Fishing

Fishing forms part of seasonal socio-economic activities in some villages along the Mvuha and Ruvu rivers, especially in Magogoni, Mvuha, Kibangile and Tulo villages (**Plate 8**). Nature of the terrain is among the factors that restrict fishing in the upper parts of the Mgeta River. Crocodile attacks also affect fishing in some villages along the Mvuha and Ruvu rivers. Fish species found in Mvuha and Ruvu rivers are mainly tilapia species (Perege) and cat fish (Kambale).





**Plate 8: A photo showing a person holding a fish at Magogoni village (left) and processed fish at Tulo village along the Ruvu River (Photo: Kalumanga, 2021).**

#### **2.1.4 Petty Business and Mining Activities**

Crop-related businesses dominate in villages along the Mvuha, Ruvu and Mgeta rivers. Other petty businesses include shops, local brew clubs, tailoring, food and fruit vendors (**Plate 9**). Mining activities are also conducted in some villages, especially along the Ruvu River (e.g. Kibangile and Kisanga stand villages; **Plate 10**). Illegal mining using poor techniques is a threat to sustainable management of water resources in the Mvuha, Ruvu and Mgeta sub-catchments. Illegal mining also affects fishing and restricts access to high quality water sources by the villagers along the Ruvu River.



**Plate 9: A person doing petty business at Mvuha centre along the Mvuha River (Photo: Kalumanga, 2021).**



**Plate 10: Illegal mining activity at Kibangile village along the Ruvu River (Photo: Kalumanga, 2021).**

### 2.1.5 Tourism

Wildlife-based tourism is among the social-economic activities done in, and/or adjacent to some villages along the Mvuha, Ruvu and Mgeta rivers. Some of the tourist attractions include forests and wildlife species found in the Uluguru Nature Reserve (along the Mgeta River), Kimboza Forest Reserve (along the Ruvu River) and Ukutu/JUKUMU Wildlife Management Area (along the Mvuha River). The Ukutu Wildlife Management Area has about 750 km<sup>2</sup> and managed by investors in agreement with community members<sup>18</sup>. Some of the villages jointly owning and managing the Ukutu/JUKUMU WMA include Magogoni, Kongwa (along the Mvuha River), Bwakira chini Gomelo, Bonye, Mbwade, Nyarutanga, Dakawa, Kiburumo and Kidunda (partly crossed by the Mgeta River). Common wildlife species attracting local and international tourists to visit natural attractions along the Mvuha, Ruvu and Mgeta rivers include endemic plant species, reptiles and amphibians. Other wildlife species include elephants, buffaloes, eland, hartebeest, wildebeest, lions, and several other species<sup>19</sup>. Revenue collection from wildlife-based tourism in Morogoro District and different years are presented in Table 4.

**Table 4: Morogoro District Revenue Collected from Tourist and Local Hunting**

<b>Year</b>	<b>Local Hunting</b>	<b>Tourist Hunting (25%)</b>
2011	2,420,000.00	4,773,102
2012	1,310,000.00	1,157,598
2013	1,000,000.00	17,000,000
2014	1,210,000.00	-
2015	1,000,000.00	13,911,166.50
2016/17	-	1,408,899.00
2017/18	-	1,129,281.00
<b>Total</b>	<b>37,698,408.00</b>	<b>113,733,020.29</b>

**Source:** Morogoro District Socio-Economic Profile, 2019

<sup>18</sup> Morogoro District Socio-economic Profile, 2019.

<sup>19</sup> Morogoro District Socio-economic Profile, 2019.



**Table 5 :Main Livelihood activities conducted along the Mvuha and Ruvu River in different villages**

SN	Livelihood Activity	Villages	Description of the activity
1	Crop Farming	All villages except Ngong'olo (due to forest reserve and physical barrier)	Crop farming is the major economic activity in all villages along the Mvuha, Ruvu and Mgeta rivers. Banks of the Ruvu River in Ngong'olo village are steep and rocky and thus restricts crop farming. Major food crops along the river banks include maize, irish potatoes, vegetables, banana, cassava, yams, sweet potatoes and paddy. Cash crops produced include tobacco, sunflower, sesame, vegetables, coconut, sugar cane and different types of fruits. Income in almost all the villages is obtained through selling of both food and cash crops in different markets (including the Mvuha open village market scheduled for Thursday every week. Nyandira village also has an open market along the Mgeta River. Several middle men exist and buy cash and food crops from farmers and transport them to Morogoro town, Dar es Salaam and other regions. Moreover, small scale horticulture farming using water pumps are also practiced in most villages. Small-scale irrigation schemes for rice/paddy farming are also practiced at Tulo-Kongwa (along the Mvuha River) and Langali and Kikeo villages (along the Mgeta River). Small-scale irrigation mainly support horticulture.
2	Livestock keeping	All villages except villages in which there is steepy and rocky river banks (e.g. Kibangile and Ngong'olo villages along the Ruvu River and almost all villages in the upper parts of the Mgeta River)	Livestock keeping is done in almost all villages along the Mvuha, Ruvu and Mgeta rivers. The only variation is on types of livestock kept. Nature of terrain in which the rivers cross restricts movement and keeping of livestock in some villages. Some of the livestock kept include cattle, goat and sheep. In all villages the migrants societies like Maasai, Sukuma and Barbaig (Mang'ati) are mostly engaged in livestock keeping compared to local communities. Goats and pigs are kept in the upper parts of the Mgeta River (especially in Homboza and Langali wards). Selling of livestock, milk and other livestock products are among the sources of income in the villages crossed by the Mvuha, Ruvu and Mgeta rivers.
3	Fishing	Dala, Magogoni, Kongwa, Mvuha, Tununguo, Kiganila, Kibangile	Fishing is conducted mainly in Mvuha and Ruvu rivers. In Mgeta River, fishing is done in its lower parts towards its confluence with the Ruvu River (around the proposed Kidunda dam in Morogoro District). <i>Tilapia sp (perege)</i> and catfish ( <i>kambale</i> ) are common fish species in Mvuha and Ruvu rivers. Fishing is done to offer people sources of protein and cash through selling fish to petty traders and food vendors. Fishing methods employed include fishing rods and traditional methods. Some fishing methods are conservation-unfriendly and thus affect sustainable management of the riverine systems and contribute to loss of untargeted biodiversity and diversion of the river channels.
4	Brick Making	Dala, Mvuha, Magogoni, Kisanga stendi,	Brick making and burning is among the livelihood activities done in some villages along the Mvuha, Ruvu and Mgeta rivers. The selling of burnt bricks helps people

			to secure their livelihood. Brick making is done along the river banks within 60-30 meters for easy access of water. To make bricks involve clearing of riverine vegetation and thus exposes the river banks to soil erosion. Removal of riverine vegetation also exposes community members to social risks (e.g. flooding and loss of farm plots).
5	Carpentry and Welding	Mvuha, Dala, Kibaoni/Mgeta	Carpentry and welding along the Mvuha and Ruvu rivers involve making of various furniture such as doors, windows, chairs, beds, etc. The furniture are sold at different markets such as Mvuha open market and Kibaoni/Mgeta. Likewise, local welders make Iron beds, windows, and doors. The selling of products from carpentry and welding is among the sources of income and livelihood to the youth engaged in capentry and welding activities.
6	Mining	Kibangile, Kisanga stendi, Tununguo, Magogoni Tulo(sand)	Mining, mostly illegally and by artisal miners, is conducted along the Ruvu River. Artisal miners along the Ruvu River targets mainly gold. Some of the villages targeted by artisal miners along the Ruvu River include Kibangile, Kisanga stand, Tununguo and Magogoni villages. Sand mining largely take place along the Mvuha River. Mining is done purposely for securing livelihood of people. Mining along the river banks, however, have caused destruction of the river banks, pilling of sands on the river bed which also reduces river depth, shifting of the river and water pollution. Illegal mining pose a challenge of unsustainable use of the rivers which adversely affect water sources.
7	Petty businesses	Major business centres include Dala, Mvuha (along the Mvuha River) and Kibaoni/Mgeta, Pinde (along the Mgeta River)	Petty businesses range from food and fruit vending, local blew selling, mats weaving, etc. The petty businesses are mostly conducted in some centres along the Mvuha River (e.g. Mvuha, Dala) and Mgeta River (e.g. Kibaoni/Mgeta and Pinde). Some petty businesses are also done along the main footpaths from Mvuha to upstream villages of Kasanga, Kolero and Bungu wards (Mvuha River catchment). Petty businesses are also conducted along the Kibaoni/Mgeta-Vine road through the Bunduki village. Weekly, there is an open market at Mvuha on Thursday and serves people from different places, including traders from major towns and cities like Morogoro and Dar es Salaam. Horticultural produce from the villages along the Mvuha and Ruvu river are bulkily collected on Thursdays and supplied in Morogoro, Dar es Salaam and other towns in Tanzania

**Source:** Field Survey, 2020/2021

## **2.2. Ethnicity and migration patterns**

Main indigenous tribes along the Mvuha, Mgeta and Ruvu rivers are Luguru, Kutu, Zigua, Kwere, and a few Kaguru and Nguu. Upper parts of the Mgeta River are dominated by Luguru people, especially Mgeta and Mlali divisions. It from the Luguru tribe the Uluguru Mountains are named. In 19<sup>th</sup> Century, a few groups of Ngindo, the Ndengereko, and Ngoni arrived in villages along the Mvuha, Ruvu and Mgeta rivers due to tribal warfare and incessant famines.

Presently, people from different tribes and regions are migrating to Morogoro and Mvomero districts in search of fertile land and reliable water<sup>20</sup>. Groups of pastoralists and agro-pastoralists from drought-devastated regions of Simiyu, Shinyanga, Manyara, Arusha, and Mwanza are increasingly migrating to villages along the Mvuha, Ruvu and lower parts of the Mgeta River. As a result, Sukuma, Masai, and Barbaig (Mang'ati) have become parts of the community members in Morogoro and Mvomero districts. A complex and diverse community with diverse socio-economic activities has emerged in Mvomero and Morogoro districts. Pastoralism has also emerged among major livelihood activities in a community that was purely dominated by smallholder farmers in villages along the Mvuha, Ruvu and Mgeta rivers.

Farmers-farmers conflicts as well as farmers-pastoralists conflicts have become common along the Mvuha, Ruvu and lower parts of the Mgeta River. Farmers require fertile land and water from the rivers. Similarly, pastoralists arriving in Morogoro and Mvomero districts require pasture and water mainly available along the Mvuha, Ruvu and lower parts of the Mgeta River.

## **2.3. Population Size**

In 1967, Morogoro District, previously combining both the Morogoro District and Mvomero District, had a total population of 291,373 people. In 1978, the human population reached 344,083 people. In year 1988, the Morogoro District had 430,237 people. By year 2000, some divisions, wards and villages in Morogoro District were moved into other administrative districts, including the Mvomero District. In year 2002, Morogoro District, excluding Mvomero District, had a population of 263,920 individuals (129,285-Males; 134,635-Females<sup>21</sup>). In 2012, the Mvomero District had a population of 312,109 people (154,843 males; 157,266 female<sup>22</sup>). By year 2017, the Morogoro District had 321,985 people where 158,405 were males and 163,580 female<sup>23</sup>. On average, each household in Morogoro and Mvomero districts has 4.2 persons per household. Overall, there is an increasing trend of human population in both Morogoro and Mvomero districts, especially in the villages along the Mvuha, Ruvu and Mgeta rivers<sup>24</sup>.

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<sup>20</sup> SCP/GTZ, 2002.

<sup>21</sup> Population and Housing Census, 2012.

<sup>22</sup> Mvomero District Socio-Economic Profile, 2020.

<sup>23</sup> Morogoro District Socio-Economic Profile, 2019.

<sup>24</sup> Baseline survey of the Eastern pilot Wildlife Management Areas Report, 2003

**Table 6: Population size and trend in the PAPs villages**

<b>Village</b>	<b>1996</b>	<b>Households</b>	<b>2012</b>	<b>Households</b>	<b>2019</b>	<b>Households</b>
Dala	-	-	3591	766	4158	857
Mvuha	2424	606	2382	632	3128	767
Magogoni	885	148	1986	452	2,055	866
Kongwa	1,153	231	3,780	730	4,457	861
Tulo	1,023	205	1,593	352	2,055	415
Tununguo	-	-	2587	-	3119	811
Kisanga	-	-	1842	-	2,154	518
Lukulunge	3,579	716	1192			
Kiganila	2,128	266	1386	-	2,013	580
Bwila juu	881	220	1143	-	-	-
Ngong'olo	-	-	2239	-	-	-
Kibangile	-	-	1852	-	-	-
Vinile			813		1854	460
Lukuyu			1326		2017	326
Homboza			5797		3468	434
Bunduki			1532		1505	345
Kibaoni			1174		1103	404
Tandali			1455		1861	911
Lusungi			1361		1919	317
Pinde			1020		1002	239
Maguruwe			1268		1505	312
Masalawe			1515			
Kibigiri			2068		1939	895
Kododo			2371		2470	599
Yowe						

**Source:** Baseline survey of the Eastern pilot Wildlife Management Areas Report, 2003, National Population Census, 2012 & Morogoro District Socio-Economic Profile, 2019.

## **2.4. Social Services**

Presence and absence of social services in any community affect livelihood of people directly and/or indirectly as well as positively and/or negatively. In the villages along the Mvuha, Ruvu and Mgeta rivers, presence and/or absence of different social services were assessed in relation to access by the PAPs. Some of the assessed social services included:

### **2. 4.1 Transport Infrastructure**

The transport infrastructure available in villages along the Mvuha, Ruvu and Mgeta rivers were roads and railways.

- ***Road Transport***

The villages along the Mvuha, Ruvu and Mgeta rivers are crossed by different feeder roads and trunk roads<sup>25</sup>. Majority of roads, however, are not passable throughout the year. The only reliable road includes a trunk road that links Nyandira and Morogoro municipality through Kibaoni/Mgeta centre (along the Mgeta River). Another reliable trunk roads links Mvuha centre and Morogoro Municipality through the Manyani forest reserve. From the Mvuha centre there is another reliable road that goes through Ngerengere division all the way to the Dar es Salaam-Zambia highway (along the Mvuha and Ruvu rivers). The reliable roads facilitates transportation of people and goods from different villages to market places and areas with various social services. Along the Mvuha River, almost all villagers require access to Mvuha district hospitals and Mvuha district council/district administrative secretariat. Several bridges of different sizes are also constructed permanently and temporarily across the Mvuha, Ruvu and Mgeta rivers.

- ***Railway Transport***

The Tanzania-Zambia railway managed by Tanzania and Zambia Railway Authority (TAZARA) passes through some villages crossed by the lower parts of the Mgeta River<sup>26</sup>. The TAZARA is also used by almost villagers in villages crossed by Mvuha and Ruvu rivers in Morogoro District. TAZARA is the most reliable means of transport used by most villagers to transport goods and access social services in major centres and towns, including Dar es Salaam and Mbeya cities.

## **2.4.2 Health Services**

The PAPs along the Mgeta River have access to health services at Homboza, Langali, Kibaoni/Mgeta and Kikeo villages. Along the Mvuha and Ruvu rivers, the PAPs also have access to village dispensaries and the district hospital at Mvuha centre. A health centre owned by the Tanzania People's Defence Force (TPDF) at Ngerengere military base, also provide health services to some villages along the Ruvu River (e.g. Kisanga standi and Tununguo). One of the challenges facing most health services at the village facilities, however, is shortage of qualified personnel and drugs.

Public health services along the Mvuha, Ruvu and Mgeta rivers are also offered by non-state organizations. Some of non-state organizations include UMWEMA Morogoro, which promotes maternal and child health-nutrition as well as campaign on balanced diet. EngenderHealth is another organization that operates in villages along the Mvuha, Ruvu and Mgeta rivers and deals with community health and gender issues. The USAID Lishe Endelevu Program in Morogoro District deals with sustainable nutrition while the USAID-Boresha Afya program deals community health program. Other non-state organizations in Mvomero and Morogoro districts include Sustainable Agriculture Tanzania (SAT) that promotes organic farming and organic food. The

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<sup>25</sup> Morogoro District Socio-Economic Profile, 2019.

<sup>26</sup> Morogoro District Socio-Economic Profile, 2019.

CAMFED Tanzania also exists in villages along the Mvuha, Ruvu and Mgeta rivers and promotes a Campaign for Female Education. The Epidemic Control (Epic program) is also implemented in Morogoro and Mvomero districts. Non-state organizations provide primary health care services to different community groups on health-related matters such as family planning, HIV/AIDS, COVID-19, balanced diet, etc. Most common diseases in villages along the Mvuha, Ruvu and Mgeta rivers include malaria and water-borne diseases such as dysentery, typhoid and diarrhea<sup>27,28</sup>.

### 2.4.3 Water Service

Not all villagers, including the PAPs, have access to relatively safe and clean water in villages along the Mvuha, Ruvu and Mgeta rivers. By 2018, about 111,805 people (36%) had no access to any source of safe and clean water in Morogoro District<sup>29</sup>. Similarly, not all villages along the Mgeta River in Mvomero District have access to relatively safe and clean water. Rivers are still major sources of freshwater in all villages along the Mvuha, Ruvu and Mgeta rivers. Other sources of water include bore holes, shallow wells (pumped water), gravity-fed schemes, charcoal dam, rain water harvesting, and spring water.

Pure Lion's water and CAMFED are among the non-state actors supporting rural water supply projects in Morogoro and Mvomero districts. For instance, the Pure Lion's water and CAMFED drilled a well at Kongwa village (along the Mvuha River) to provide clean and safe water to community members. Water from drilled well, however, are not frequently used by the villagers due to high salinity level. The salinity makes people depend on Mvuha, Ruvu and Mgeta rivers for various uses (**Plate 11**). High dependency on the rivers exposes people to crocodiles and hence increased number of crocodile attacks. For instance, in Tununguo village (along the Ruvu River) almost the entire population and their livestock depend on the Ruvu River.



**Plate 11: Children pumping water from a drilled well at Lukulunge village (left) and a woman fetching water from the Mvuha River at Dala village along the Mvuha River (Photo. Joseph Evanse, 2021).**

<sup>27</sup> Morogoro District Socio Economic Profile, 2019.

<sup>28</sup> Baseline survey of the Eastern pilot Wildlife Management Areas Report, 2003.

<sup>29</sup> Morogoro District Socio-Economic Profile, 2019.

#### **2.4.4 Education Service**

All villages along the Mvuha, Ruvu and Mgeta rivers have access to primary and secondary schools. Some schools are public and some are privately-owned. Campaign for Female Education (CAMFED) is an organization that has been supporting non-state efforts to influence and support female students to acquire primary and secondary education in Morogoro and Mvomero districts. Presence of education facilities is one thing, increased enrollment and performance is another thing. During rain seasons, attendance is low in some schools because school children are supposed to cross rivers and flood plains (e.g. Tulo, Kongwa, Kiganila, Bwira juu and Tununguo villages along the Mvuha and Ruvu rivers). Access to other social services become difficult as well.

#### **2.4.5 Energy sources**

Firewood and charcoal are main sources of energy used for cooking in all families along the Mvuha, Ruvu and Mgeta rivers. Compared to other sources, firewoods and charcoal are readily available in almost all villages, especially along the Mvuha and Ruvu rivers<sup>30</sup>. Electricity connected through the Rural Energy Agency (REA) electrification program is another source of energy include to centres such as Kibaoni/Mgeta, Pinde and Mvuha. Some households and institutions are also connected to solar energy for lighting and other uses. Kerosene is still used for lighting by almost every households not connected to electricity.

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<sup>30</sup> Morogoro District Socio-Economic Profile, 2019.

## CHAPTER 3: APPROACHES USED TO ENGAGE STAKEHOLDERS AND COLLECT VIEWS AND CONCERNS ABOUT INSTALLATION OF CONCRETE BEACONS AND LIVELIHOODS

This chapter presents various approaches that were used to engage stakeholders at different levels and get their views and concerns about installation of concrete beacons along the Mvuha, Ruvu and Mgeta rivers. Some of the approaches used to engage stakeholders included:

### 3.1: Stakeholder identification in areas crossed by Mvuha and Ruvu rivers

Stakeholder identification was an initial and a critical stage in the process to engage stakeholders and discuss about a proposal to install concrete beacons along the Mvuha, Ruvu and Mgeta rivers (see Box 1 for the stakeholder adopted definition). To observe the government reporting protocol, the stakeholder identification started at Morogoro Regional Administrative Secretariat, then, the District Administrative Secretariats (Morogoro and Mvomero districts), the Morogoro and Mvomero District Councils, the governors (Matombo, Mvuha, Ngerengere, Mgeta and Mlali divisions), ward executive officers as well as the village leaders (chairpersons and village executive officers).

#### Box 1: Who is a stakeholder?

*"stakeholder" refers to individuals or groups who: (a) Are affected or likely to be affected by the project (project-affected parties); and (b) May have an interest in the project (other interested parties).*

*Source:*

At the village level, the project team also worked closely and transparently with leaders of Water User Associations (WUAs) to identify stakeholders along the Mvuha, Ruvu and Mgeta rivers. Along the Mgeta River, the project management team engaged Mgeta juu-A WUA (with 11 villages) and Mgeta juu-B WUA (with 16 villages). Similarly, along the Mvuha River, the project team engaged the Mvuha WUA (with 15 villages). Along the Ruvu River, the project team engaged Mfizingo WUA (with 12 villages). The project team engaged WUA leaders to make the WUA leaders understand the Wami/Ruvu Water Basin's proposal to install beacons along the Mvuha, Ruvu and Mgeta rivers (under the WSSP-II). In WUA villages, both village and WUA leaders worked as a team. In non-WUA villages, the project team engaged only village leaders. Some of the non-WUA villages include Kisanga stand, Tununguo, Kibangile and Magogoni (along the Ruvu River).

Land tenure/land ownership was one of the criteria that was used by the project team to identify the appropriate stakeholders at the village level. A key guiding question was who owns land and/or conducts some livelihood activities in areas proposed to install beacons along the Mvuha River (50 km), Ruvu River (60 km) and Mgeta river (60 km)?. For institutions, a target was to consult and engage state and non-state institutions implementing different projects in the villages along the Mvuha, Ruvu and Mgeta rivers.



## 3.2 Stakeholder Consultations

The project management team managed to consult different stakeholders and at different levels. The aim was to gather inputs from different stakeholders to be able to prepare and implement an informed Livelihood Restoration and Rehabilitation Plan (LRRP). The project team carefully observed existing hierarchy of authority and power when consulting stakeholders at different levels. The project team was also sensitive with social-cultural issues when consulting stakeholders at the village levels (e.g. whom to consult on clan/family lands, graveyards along the river banks). All meetings and discussions were conducted in Kiswahili. Stages on how different stakeholders were consulted are described below:

### 3.2.1: Discussion with the Morogoro Regional Administrative Secretary (RAS)

Administratively, the RAS is mandated to oversee all projects that engage community members directly. The RAS is supposed to be engaged on all matters related to people's livelihoods in the region. With that understanding, the project management team visited the Regional Administrative Secretary to get views and concerns about how to restore and rehabilitate livelihood along the Mvuha, Ruvu and Mgeta rivers in Morogoro and Mvomero districts. The Morogoro RAS, through the Deputy RAS office (infrastructure -including water resources) was engaged at all stages during stakeholders consultation. The RAS-Morogoro commended the initiative by the Ministry of Water through the Wami/Ruvu Basin to protect water sources given the importance of water at national and local levels; socially, economically and on the environment. In summary, the RAS urged the project team to ensure that the entire process to install beacons is transparent, participatory and holistic (Appendix I for details). Ideally, a transparent and participatory approach was proposed in order to strengthen the collaboration with the regional administration, but also help to improve project acceptance and its sustainability at the regional level (Box 2).

#### **Box 2: Leave no one behind**

*-Engage all stakeholders at different levels in a transparent and effective manner and make sure they participate in the process to install concrete beacons in parts of the river banks within their villages (in their village lands)*

*Eng. Ezron C. Kilamhama, Regional Administrative Secretariat (Infrastructure)- Morogoro (Appendix I)*

Overall, the RAS team strongly recommended to the project team to ensure that the whole process to install beacons along the Mvuha, Ruvu and Mgeta rivers does not involve displacing people from their settlements and even their farm plots (Box 3). Rather, people should be guided on sustainable land management practices to be conducted along the river banks.

#### **Box 3: Do not displace people in the process to install beacons**

*- Strive to choose project options which are socially the least disruptive and which do not cause human displacement*

*Eng. Ezron C. Kilamhama, Regional Administrative Secretariat (Infrastructure)- Morogoro (Appendix I)*

### 3.2.2 Discussion with the Morogoro District Commissioner and District Administrative Secretary

The project team managed to organize meetings and have discussions with the Morogoro and Mvomero District Commissioners (DCs) as well as the Morogoro and Mvomero District Administrative Secretaries (DASs) – **Plate 12**. Both, DCs and DASs are aware about the WSSP-II project and a proposed activity to install concrete beacons along the Mgeta River (60 Kms), Mvuha River (50 Kms) and the Ruvu River (60 Kms). Generally, the DCs and DASs were happier to share their views about strategies to restore, rehabilitate and sustain livelihood in villages crossed by Mvuha, Ruvu and Mgeta rivers in Morogoro and Mvomero districts. Commenting on the strategies, Hon. Bakari Msulwa, DC-Morogoro, said *'Consult as many people as possible to get a broader picture and inputs on viable strategies to restore, rehabilitate and sustain livelihood of smallholder farmers and majority of the rural poor along the Mvuha, Ruvu and Mgeta rivers'*, end of quote. Commenting on the strategies, Ms. Ruth John, DAS- Morogoro, insisted on careful consideration of land tenure and land ownership issues.



**Plate 12:** A group photo after discussion with the DAS (first left) and DC (third from left) at DC office in Morogoro (Photo: B. Shimba (2021))

### 3.2.3: Discussions with the District Executive Directors, Council Management Teams and the Division officers

At Morogoro and Mvomero districts, the project team had meetings with District Executive Directors, some members of the Council Management Team (CMTs) and governors for the Mvuha, Matombo, Ngerengere, Mgeta and Mlali divisions (**Plate 13**). At the meetings, the project team and district/division officials discussed about key stakeholders to be engaged in the process to install concrete beacons along the Mvuha, Ruvu and Mgeta rivers, among other things. The list of stakeholders that were proposed to be engaged included both state and non-state actors. The project team decided to actively and deliberately engage the district officials because are main players in implementation of any development project in the villages of Tanzania. Almost all ward and village

employees perform their duties under the DEDs through the CMTs (mostly heads of departments in district councils).

In the discussions, the DEDs advised the project team to engage the village leaders in the process to carefully identify people conducting livelihood activities along the Mvuha, Ruvu and Mgeta rivers. At the meeting with the DEDs, the project management team learnt that sustainable efforts to restore and rehabilitate livelihood require careful consideration of land tenure/ownership issues. *'Deal with land owners for strategies that require long-term investment on land (e.g. planting of trees)'*, said the DED at Morogoro District Council office-Mvuha. Decisions on long-term investments (e.g. tree planting) and sustainable management of farm plots have to be made by land owners. The project team made sure that engagement of the PAPs along the river banks targeted the land owners and not land renters. Prior information, however, will be given to both land owners and land renters to make sure people have time to harvest their annual crops. Guidance will also be provided to make sure land owners and land renters understand sustainable land management practices to be allowed along the river banks (Table 1).



**Plate 13:** A discussion with DED (first far left) in the DED office at Mvuha, the Headquarters-Morogoro District Council (Photo: Tajiri Kihemba, 2021)

At the meetings with district officials, the project team also learnt about existence of non-state stakeholders that exist and permitted to implement development project in some villages along the Mvuha, Ruvu and Mgeta rivers. The project team was advised to consult some non-state stakeholders to get their views and concerns about the process to install concrete beacons along the river banks. Inputs from non-state stakeholders was also required as inputs to guide decisions on how to restore and rehabilitate livelihood in villages along the Mvuha, Ruvu and Mgeta rivers. Some of non-state stakeholders implementing some development projects in Morogoro and Mvomero districts, include Tanzania Christian Refugees Services (human rights issues); Pure Lions Water (rural

water supply); Tanzania Gender Networking Programme (value addition and reduce post-harvest loss); Morogoro Paralegal Centre (legal advice); UMWEMA Morogoro (Maternal and child health-nutrition - promote use of balanced diet); Tanzania Elephant Foundation (human-elephant conflicts in villages), and the USAID Lishe Endelevu Program (sustainable nutrition project). The members of the Council Management Teams (CMTs) in Morogoro and Mvomero district, mainly heads of various departments, also accompanied the project team to visit villages in which installation of concrete beacons is proposed (**Plate 14**).

### **3.2.4: Discussions with village governments and community members**

The project team managed to arrange meetings with village leaders and community members to discuss about; i) a proposed project activity under the WSSP-II to install concrete beacons along the Mvuha, Ruvu and Mgeta rivers; ii) identify different livelihood activities conducted by villagers along the Mvuha River (50 km), Ruvu River (60 km) and Mgeta River (60 kms); iii) identify the Project Affected People/Parts (PAPs); iv) discuss about installation of concrete beacons in communally-owned lands along the Mvuha, Ruvu and Mgeta rivers (e.g. rituals sites, burial sites); v) discuss and agree on some livelihood activities to be permitted in different zones after installation of concrete beacons along the Mvuha, Ruvu and Mgeta rivers. (**Plates 15**). In each village, meetings with elders and women were organized differently. During discussions care was taken to make sure social-cultural issues are observed. Swahili language was used to ensure fully understanding of the participants.



**Plate 14:** Some members of the council management team – Morogoro District, the division councilors, Mvuha WUA chairperson, the village chairperson- Magogoni village and the project team at one the sites proposed to install concrete beacons along the Ruvu River at Magogoni and Kiganila villages (Photo: Juma Mwinyishehe, 2020)

The participation of women and disabled people was highly encouraged in all meetings and women were given priority to share their views and concerns about livelihood issues in relation to installation of beacons on parts of the rivers crossing their villages. At the meetings, village members suggested a number of strategies and actions that must be



considered by the project team in the process to restore and rehabilitate livelihood of the PAPs along the Mvuhā, Ruvu and Mgeta rivers.



**Plate 15: Consultation meetings with village members at Kiganila village (left) and Vinile village (right): (Photo: Joseph Evance, 2021 and Kassambili, 2020 respectively)**

Protection of river banks from unsustainable land use practices was highly recommended in most village meetings. The villagers were concerned about on-going loss of riverine vegetation and its resulting impacts on their livelihood (e.g. loss of farm plots and graveyards). The villagers, also insisted on the need to protect river banks even in communal land that are currently not under any use. Their concerns come from a reality that Morogoro Region is one of the hotspots for land use conflicts in Tanzania. Daily, there are groups of people and livestock arriving in Morogoro Region from drought-devastated regions of Mwanza, Simiyu, Shinyanga, Manyara and Arusha. River basins are major target destinations by migrating pastoralists and agro-pastoralists. Presence of concrete beacons might deter immigrants from conducting unsustainable land use practices along the protected river banks.

Today, due to erosion on the river banks, demarcating a border between Tununguo and Kisanga stand villages in Morogoro District has become a challenge. The Ruvu River has changed its course and the former channel used to mark a boundary between the two villages. Commenting on the shift of the Ruvu River channel, Mr. Constantine Luanda, the Ward Executive Office-Tununguo Ward said, *'mto unapobadilisha mwelekeo kuna sababisha migogoro ya mipaka na migogoro ya ardhi kwa ujumla. Watu wanatumia mito kama mipaka ya vijiji na hata maeneo mengine ya utawala'*. Translating in English, 'wherever a river changes its course land use conflicts is an immediate result/implication.

**Box 4: Installation of concrete beacons should start immediately in areas that are not occupied by people before it is too late (communal and unoccupied land)**

*Costantine Luanda – Ward Executive Officer – Tununguo- (Appendix I)*

Oftentimes, rivers are used to mark village boundaries and other administrative areas (e.g. districts, regions and even countries'). Fortunately, almost all villagers understand parts of the village lands that are privately owned along the river banks. Even when a

river changes its course at a border between two villages and/or within the same village, villagers recognize owners of the affected land plots. That is why it is easy to find a villager from village X (e.g. Tununguo) farming along the river bank in another neighbouring village (e.g. Kisanga stand). If asked, the villagers will explain historical shifts in river courses and how such shifts re-arranged farm matrices/configurations regardless of administrative boundaries. In other words, people along the river banks understand how to manage private lands even when affected by changes in the river course. Protection of riverine vegetation, however, is highly recommended among other ways to secure river banks from erosive powers and prevent human-induced changes of river courses.

### **3.2.5: Discussions with non-state stakeholders**

The project management team also managed to get views and concerns on how to restore, rehabilitate and sustain livelihood in villages along the Mvuha, Ruvu and Mgeta rivers from CARE International (economic empowerment), USAID-Boresha Afya (community health), Epidemic Control (Epic), MVIWATA (Mtandao wa Vikundi vya Wakulima Tanzania- smallholder farmers network), CAMFED Tanzania - Campaign for Female Education, EngenderHealth (community health and gender issues) and Sustainable Agriculture Tanzania (SAT). The project team also collected views from state agencies such as the Tanzania Forest Services Agency (TFS) and Rural Water Supply and Sanitation Agency (RUWASA).

## CHAPTER 4: CENSUS OF PROJECT AFFECTED PEOPLE ALONG MVUHA, RUVU AND MGETA RIVERS

The project management team, accompanied by village leaders, walked along the Mvuha, Ruvu and Mgeta rivers to: i) identify the Project Affected People/parties (PAPs)- (**Plate 16**-Appendix II); ii) gather the PAPs views and concerns about installation of concrete beacons; iii) identify livelihood activities conducted by the PAPs along the river banks (**Plate 17**); iv) record land sizes owned by the PAPs along the Mvuha, Ruvu and Mgeta rivers; v) estimate costs/loss to be incurred by the PAPs after installation of beacons (in monetary terms); vi) discuss about sustainable land management options/livelihood activities along the river banks after installation of concrete beacons and; and vii) discuss different interventions/actions required to restore and rehabilitate livelihood of the PAPs after installation of concrete beacons.



**Plate 16:** *Some members of the project team walking to meet and discuss with some PAPs along the Mvuha River, at Kiganila village, Morogoro District. The team was accompanied by a village leader (far left) and Secretary-Water User Association –Mvuha (far right) (Photo: Joseph Evance, 2021).*

Land tenure/ownership was a main criterion used to identify the PAPs along the Mvuha River (50 km), Ruvu River (60 km) and Mgeta River (60 km). the Project management team was advised by the regional and administrative secretariats to carefully consider land tenure/ownership issues in the process to identify the PAPs. From the consultations and site visits, it was learnt that lands along the Mvuha, Ruvu and Mgeta rivers are owned and managed differently. Categorically, some lands traversed by the rivers are village lands, some reserved lands and some are general/public lands.

Village lands are lands that fall within village jurisdiction and are under control of the village government council on behalf of other villagers. Some parts of the village lands,



however, are owned collectively (communal lands) and some village lands are owned privately (private lands owned by individual villagers). Thus, at the village level, decisions on privately owned pieces of lands are done by individuals while decisions about communally owned lands are done by village leaders on behalf of villagers and/or through village assemblies.



**Plate 17:** A project team member in her discussion with pastoralists along the Mvuha River at Lukulunge village, Morogoro District (Photo: Joseph Evance, 2021).

On the sustainable land management practices, the project team explained to the PAPs about zoning and different activities that will be permitted in each zone after installation of concrete beacons along the Mvuha, Ruvu and Mgeta rivers. The project team, also explained to the PAPs about some restrictions to be imposed after installation of beacons along the Mvuha, Ruvu and Mgeta rivers. In the explanations, members of the project team pointed out clearly that restriction on type of land uses along the river banks will depend on types of rivers and based on their minimal flows (**Table 7**). For instance, beacons will be installed within 60 m for large rivers; 30 m for medium rivers and 15 m for small rivers. Activities that will be permitted along the river banks are shown in Table 1.

The project team also explained to the PAPs that annual crops already planted in different farm plots along the Mvuha, Ruvu and Mgeta rivers will not be uprooted. During the transition, the PAPs will be given time to harvest planted annual crops. To the large extent, PAPs along the Mvuha, Ruvu and Mgeta rivers grow horticultural crops that take between three to six months to be harvested (growth period). As explained in Table 1, PAPs with perennial crops will be allowed to continue owning the crops as part of agroforestry (integrated land management practices through agroforestry).

**Table 7: Three types of rivers and sizes of zones to be demarcated (m)**

No.	Stage	Type of River	Minimal flow(m <sup>3</sup> /s)	Area to be demarcated (m)
1	I	Large Rivers	>2	60
2	II	Medium Rivers	0.5-2	30
3	III	Small Rivers	0-0.5	15



#### 4.1. PAPs along the Mgeta River: Assets and estimated losses

The project team recorded a total of 486 plots in 13 villages along the Mgeta River (**Table 8; Appendix II**). Categorically, the plots were recorded as Private Farm Plots (PFPs), Communally Owned Plots (COPs), settlements, reserved lands, and lands under no use. The PFPs included pieces of land that are owned by individual villagers and planted with some crops (lands under use). The COPs included school areas, church areas, walking paths, graveyards, livestock watering points, areas for irrigation intakes, fishing camp, mining site, and bricks making site. Reserved lands included communally owned pieces of land that are reserved as village forests and/or ritual sites.

For clarity, it should be noted that, even 'lands under no use' are either privately and/or communally owned. A decision to separate the 'lands under no use' from other categories was made to avoid over-estimation of loss to be incurred by the PAPs after installation of concrete beacons. The loss was estimated based on quantity of crops produced by the PAPs in each piece of land annually, times the market value of the produced crops.

**Table 8: PAPs along the Mgeta River**

Village	PFPs	COPs	Settlements	Reserved lands	No use	Total-plots
Tandali	32	-	-	2	16	50
Kibaoni/Mgeta	52	2 plots	-	-	7	61
Pinde	8	-	-	-	3	11
Lusungi	91	-	-	-	5	96
Lukuyu	15	-	-	-	-	15
Vinile	27	1 plot	-	-	-	28
Homboza	24	-	-	-	1	25
Bunduki	53	3 plots	-	-	-	56
Maguruwe	28	2 plots	-	1	-	31
Masarawe	65	-	-	-	-	65
Kibigiri	25	-	-	-	-	25
Kododo	10	-	-	-	-	10
Yowe	13	-	-	-	-	13
<b>TOTAL</b>	<b>443</b>	<b>8</b>	<b>-</b>	<b>3</b>	<b>32</b>	<b>486</b>

On land ownership, majority of the PAPs along the Mgeta River owns quarter ( $\frac{1}{4}$ ) of an acre, some two third ( $\frac{2}{3}$ ), three quarter ( $\frac{3}{4}$ ), and a few, mainly institutions, owns more than one acre (e.g. schools and churches). On the income per plot, the PAPs owning  $\frac{1}{4}$  acre earn an average income of TZS 260,000 to 480,000 annually from selling various farm produce such as vegetables, banana, maize, irish potato, sugar cane, among other crops (**Table 9**). Based on the income per plot in a year, the PAPs owning  $\frac{1}{4}$  acre (estimated to earn 260,000-480,000/year) will lose access to parts of lands and almost half of their income (estimated to be TZS 130,000 to 240,000) will be lost after installation of concrete beacons along the Mgeta River.

On average, the PAPs owning  $\frac{3}{4}$  acres, earn an income between TZS 360,000 and 680,000 annually from selling various farm produce (**Table 9**). Prices of farm produce, however, vary depending on seasons of the year. Assuming other factors are constant, the restriction of some land uses along the Mgeta River after installation of concrete beacons will reduce income of  $\frac{3}{4}$  acre-land owners by almost half (i.e. 210,000 to 396,000 TZS annually). Similarly, earning of the PAPs owning 1-2 acres and an average earning of TZS 520,000 to 1,360,000 annually, will earn between TZS 260,000 and 680,000 annually from the remaining plots, after installation of concrete beacons.

For communally owned assets, installation of beacons within 30 m will restrict access to playgrounds (football and basketball) at Mgeta secondary school. Some parts of the school garden will be included as well. Some lands at Bunduki Catholic Church are also within the 30 m. Thus, installation of beacons within 30 m along the Mvuha River will restrict some incompatible land uses at Bunduki Catholic Church as well.

**Table 9: Land sizes owned by different PAPs along the Mgeta River**

No	Number of PAPs	PAPs (%)	Owned Farm size	Farm size within 30m	Available assets within 30m
1	267	60	$\frac{1}{4}$ Acre	$\frac{1}{8}$ Acre	Vegetable gardens, Fruit Trees
2	107	24	$\frac{2}{3}$ Acre	$\frac{1}{4}$ Acre	Vegetable gardens, Fruit Trees and cassava and sugar cane
3	51	12	$\frac{3}{4}$ Acre	$\frac{1}{3}$ Acre	Vegetable gardens, Fruit Trees, Banana, Maize and, Irish potato, sugar cane
4	18	4	1-2 Acres	$\frac{1}{2}$ Acre	Vegetable gardens, Fruit Trees, banana, Cassava, sugar cane, Sunflower, Irish potato, timber trees
	443 -PFPs	100			
	8				Communally owned plots
	3				Reserved lands
	32				No use
	486				

## 4.2 PAPs along the Mvuha River: Assets and estimated losses

The project team recorded a total of 492 plots in six villages along the Mvuha River (**Table 10**). Most of the communally owned lands were mainly graveyards and water infrastructure (e.g. irrigation intake and water point for livestock). Some settlements along the Mvuha River were recorded within 60 m from the river banks. Partly, increasing population and settlements at Mvuha and Dala centres has made some people to construct temporary and permanent settlements along the Mvuha River (**Plate 18**). Most settlements, however, are away from the river banks by at least 30 to 40 meters. In other words, presence of settlements (temporary and permanent) will not affect the 0-15 m zone in which incompatible land uses will be restricted. Resettlement will not be

needed. Rather, capacity building will be done to make sure the PAPs are able to adopt sustainable land management practices and engage in conservation-friendly income generating activities.

**Table 10: PAPs along the Mvuha River**

Village	PFPs	COPs	Settlements	Reserved lands	No use	Total-plots
Dala	88	2 graveyards	39	-	-	129
Mvuha	65	1 water infrast	19	-	1	86
Kongwa	29	3 water infrast	-	-	-	32
Lukulunge	65	1 boundary	-	-	1	67
Tulo	147	3 water infrast	-	-	-	150
Magogoni	5	4 plot	10	2	7	28
<b>TOTAL</b>	<b>399</b>	<b>14</b>	<b>68</b>	<b>2</b>	<b>9</b>	<b>492</b>



**Plate 18: A map showing location of the Mvuha centre and Dala village in relation to the Mvuha River**

On the earnings and loss after installation of concrete beacons, the PAPs owning  $\frac{1}{4}$  acre earn an income ranging from TZS 200,000 to 380,000 annually from selling bananas, maize, sugar cane and cassava (**Table 11**). For PAPs conducting farming in an area of  $\frac{2}{3}$  acre earn between TZS 250,000 to 480,000 annually. At a relatively large-scale, PAPs with 1-2 acres earn between TZS 550,000 to 1,600,000 annually depending on market availability. Installation of concrete beacons is likely to reduce the income in the absence of other productive and intensive farming techniques by half for PAPs with 1-2 acres (i.e. TZS 225,000 to 800,000).

**Table 11: Land sizes owned by different PAPs along the Mvuha River**

No	No. PFPs	(%)	Farm size	Farm size- 60m	Available assets within 60m
1	42	11	¼ Acre	1/8 Acre	Maize, vegetables, Banana, cassava
2	66	17	2/3 Acre	¼ Acre	Vegetable gardens, Fruit Trees, Maize, cassava.
3	127	32	¾ Acre	1/4 Acre	Fruit Trees, Banana, Maize and, sugar cane, sesame, cassava
4	153	38	1-2 Acres	1/3 Acre	Fruit Trees, banana, Cassava, sugar cane, Sunflower, sesame, pigeon peas.
5	11	3	3-5 Acre	¾-1 Acre	Fruit Trees, banana, Cassava, sugar cane, Sunflower, sesame, pigeon peas.
	399 PFPs	100			
6	68				Settlements
7	9				No use
8	2				Forest/reserved land
9	14				Community owned plots
	492				

### 4.3 PAPs along the Ruvu River: Assets and estimated losses

The project team recorded a total of 110 plots in five villages along the Ruvu River (**Table 12**). The communally owned lands were mainly graveyards, bricks making site, and mining site. Some settlements were also recorded within 60 m along the Ruvu River (**Plate 18**). Annually, the Bwira juu and Kiganila are affected by floods. Regarding the installation of concrete beacons, however, settlements along the Ruvu River are away from the river banks by at least 30 to 40 meters. In other words, presence of settlements will not affect zones to be strictly protected from incompatible land uses (0-15 m).

**Table 12: PAPs along the Ruvu River**

Village	PFPs	COPs	Settlements	Reserved lands	No use	Total-plots
Bwira juu	16	-	2	-	1	19
Kiganila	62	-	4	1	-	67
Kisanga standi	5	6	-	1	1	13
Tununguo	6	3	1	-	-	10
Ngong'olo			-	1		1
<b>TOTAL</b>	<b>89</b>	<b>9</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>110</b>

Estimating income per plot along the Ruvu River, PAPs owning ¼ of an acre earn about TZS 220,000 to 380,000 annually from selling various produce shown on **Table 13**. Assuming all factors are constant, losing access to half of a land that otherwise would earn TZS 220,000 to 380,000 annually would result into earning TZS 110,000 to 190,000 annually. Similarly, PAPs owning 2/3 acre of land earn an estimated income of TZS

300,000 to 500,000 annually. The PAPs owning  $\frac{3}{4}$  acres earn an estimated income of TZS 400,000 to 750,000 annually while those owning 1-2 acres earn an estimated income of TZS 600,000 to 1,700,000 annually. Generally, during income estimation the project team assumed that more land more income, assuming also all production factors are constant. For instance, PAPs owning 2-3 acres earn an estimated income of TZS 850,000 to 2,100,000 annually. Restriction to access some parts of the land will not significantly affect the PAPs owning relatively large lands. All PAPs recommended alternative and conservation friendly income generating activities, especially the PAPs owning relatively small land plots along the Ruvu River.

**Table 13: River Land sizes owned by different PAPs along the Ruvu**

No	Number of PFPs	(%)	Owned Farm size	Farm size within 60m	Available assets within 60m
1	21	24	$\frac{1}{4}$ Acre	$\frac{1}{8}$ Acre	Maize, vegetable gardens, Banana, cassava
2	23	26	$\frac{2}{3}$ Acre	$\frac{1}{4}$ Acre	Vegetable gardens, Fruit Trees, Maize, cassava.
3	16	18	$\frac{3}{4}$ Acre	$\frac{1}{4}$ Acre	Fruit Trees, Banana, Maize and, sugar cane, sesame, cassava
4	18	21	1-2 Acres	$\frac{1}{3}$ Acre	Fruit Trees, banana, Cassava, sugar cane, Sunflower, sesame, pigeon peas.
5	9	10	3-9 Acre	$\frac{3}{4}$ -1 Acre	Fruit Trees, banana, Cassava, sugar cane, Sunflower, sesame, cashewnuts, pigeon peas.
	87 PFPs	100			
	2 investors excluded in the analysis				Investors land
	7				Settlements
	2				No under use
	9				Communally owned lands
	3				Reserved lands
	110	100			

## CHAPTER 5: CONCERNS RAISED BY DIFFERENT STAKEHOLDERS ALONG MVUHA, RUVU AND MGETA RIVERS

Major concerns that were raised by the PAPs along the Mvuha, Ruvu and Mgeta rivers are mostly related to restrictions that might be imposed after installation of concrete beacons. The PAPs and other villagers were concerned that installation of concrete beacons might restrict them from conducting some land uses and restrict access to some resources from the Mvuha, Ruvu and Mgeta rivers. On daily basis, the PAPs require freshwater from the rivers. Some PAPs also have farm plots along the river banks. To some PAPs, the Mvuha, Ruvu and Mgeta rivers are used for navigation. People use canoes to cross the rivers. The PAPs also raised concerns related to access to graveyards and ritual sites on the river banks. Seasonally, some people visit the Mvuha, Ruvu and Mgeta rivers for fishing. There are also walking paths along the Mvuha and Mgeta rivers that are located within 60 m along the river banks. The walking paths are commonly used by people while moving from different parts of their village lands and across villages. Generally, the concerns and views from the PAPs varied because there are variations on how the PAPs depend on the Mvuha, Ruvu and Mgeta rivers for their livelihood. The PAPs concerns are elaborated below.

*4.1 Access to freshwater: PAPs concern was whether installation of concrete beacons might restrict villagers from accessing freshwater; especially the permission to clear riverine vegetation on some areas along the river banks and get easy access to the freshwater*

On daily basis, almost every household require freshwater from the Mvuha, Ruvu and Mgeta rivers for various uses. Deliberately, villagers are forced to clear riverine vegetation in some parts of the river banks to have secure access to freshwater (**Plate 19**). Sometimes, crocodiles hide in thick vegetation along the river banks. For years, regular attacks by crocodiles have become a major threat to villagers at Magogoni village when visiting the Ruvu River to fetch freshwater for various uses. “*our tomorrow is unpredictable with uncertainty*”, said one of the participants while conducting Focus Group Discussion at Magogoni village. In 2021, three people were killed by crocodiles while accessing freshwater in the Ruvu River at Magogoni village.

Almost all PAPs pointed out very clearly that installation of concrete beacons should take into consideration the reality that people will always need to clear some portions along the river banks to have secure access to freshwater. The project management team and the village leaders will agree on size of river bank to be cleared for safety of people when accessing freshwater.



**Box 5:** The Ruvu River has been changing its channel. Apart from losing land and crops, graves are also destroyed and buried human remains washed away. We are forced to exhume the buried remains of our relatives and bury them where it is safer and easier to attend the graves of our parents and relatives.

*Ahamadi R. Chanzi – Village Chairperson, Kisanga Stand-Morogoro District*

**Plate 19:** A cleared part of a river bank to allow secure access to freshwater in Ruvu River at Magogoni village (Photo: B. Shimba, 2021).

*4.2 Access to graveyards: Some PAPS were concerned that installation of beacons might deny them access to graveyards and/or restrict the PAPS to continue with their voluntary decision to exhume buried remains of their relatives and re-bury them in relatively secure places (Box 5; Plate 20)*



**Plate 20:** One of the PAPS at Tununguo village standing at one the graves that the family decided to exhume and shift the buried remains to a relatively safer place (Photo: Kalumanga, 2020).

*4.3 Access to walking paths: Some PAPS were concerned that installation of beacons might deny them access to walking paths within their villages and across villages.*

Geophysically, some areas crossed by the Mvuha, Ruvu and Mgeta rivers are challenging (hilly, valley dominated terrain). In some villages, walking is only practical along the river banks. For instance, a walking path that connects Mvuha centre and Kasanga Ward is found along the Mgeta River (within 60 m on the river banks). The Mvuha-Kasanga



walking path is the only easiest route for people to walk from Mvuha and Kasanga village through the Balani village, Koloni, Bungu, Kitonga, Longwe, Ukwama villages (**Plate 21**). The PAPs and other villagers are concerned that installation of beacons might restrict people from using the walking path connecting the Mvuha and Kasanga ward. Currently, the Mvuha-Kasanga walking path is used by people to access various services at Mvuha; e.g. district headquarter, district hospital and a reliable weekly open market on Thursday. The Mvuha-Kasanga walking path is also used to access to a reliable bus stand for people going to Morogoro municipality and other places in Tanzania including Dar es Salaam and Dodoma cities.



**Plate 21:** Villagers using a walking path connecting Kasanga village and Mvuha centre thin 60 M from the Mvuha River bank (Photo: Joseph Evance, 2021).

Walking path concerns were also raised along the Mgeta River by PAPs and villagers at Kododo, Yowe, Masalawe and Homboza villages. The most common walking paths that connects Kododo-Yowe-Nyandira-Misengele as well as Masalawe and Homboza walking paths, are all located within 30 M along the Mgeta River. The other walking path along the Mgeta River is used to connect Kibaoni and Lukuyu villages. The project management team explained clearly and transparently to the PAPs that walking paths will not be restricted. The WRBWO will make sure clearing of riverine vegetation and setting of fire are strictly prohibited along the walking paths to secure the river banks from erosive powers.

*4.4 Access to the river banks to park and operate canoes: Some PAPS were concerned that installation of beacons might deny them access to park and operate canoes in the Mvuha, Ruvu and Mgeta rivers.*

Canoes are used to move people and their properties in different sides of the Mvuha and Ruvu rivers (**Plate 22**). Some PAPs were concerned that installation of concrete beacons might restrict them to park and operate canoes in Mvuha, Ruvu and Mgeta rivers.





**Plate 22:** One of the PAPs crossing through the Mvuha River using a local canoe at Tulo village (Photo V. Ephraim, 2021)

In response to the PAPs concern, the project management team pointed out clearly that, the PAPs and other villagers will not be denied access to park and operate local canoes. Instead, people operating canoes will be guided on how to park and operate canoes in a manner that does not destroy riverine vegetation on river banks. Removal of riverine vegetation can cause soil erosion and its associated consequences such as flooding as well as destruction of properties and loss of lives.

#### *4.5 Access to playgrounds at Mgeta Secondary along the Mgeta River.*

At Mgeta Secondary (Kibaoni village-Mvomero District), flat areas that are practically possible to establish playgrounds are only found along the Mgeta River (**Plate 23**). Other areas in Kibaoni villages are hilly in nature. Parents in Kibaoni villages raised their concern and asked whether installation of concrete beacons will not deny their kids to have access to the already established play grounds for football and basketball along the Mgeta River (within 30 m).

In response to the PAPs concern, the project management team explained very openly that students will not be restricted to play on the grounds along the Mgeta River. The school management, however, will be required to make sure the playing grounds are kept green with grasses to control soil erosion. Planting of recommended tree species along the river banks and adjacent to the playing grounds will be encouraged as well to maintain a greenbelt.



**Plate 23:** *A basketball playground along the Mgeta River at Mgeta Secondary, Kibaoni Village, Mvomero District (Photo: Kalumanga, 2021).*

*4.6 Access to water for livestock: Groups of pastoralists and agro-pastoralists were concerned that installation of concrete beacons might restrict them access to Mvuha and Ruvu rivers for their livestock (Plate 24)*



**Plate 24:** *Livestock grazing adjacent to farm plots along the Mvuha River (Photo: Joseph Evance, 2021).*

Already, overgrazing along the river banks is causing loss of vegetation, weakening the river banks, and exposing the river banks to erosion and flooding. Similarly, livestock grazing on river banks is intensifying conflicts between pastoralists and peasants and further causing degradation of water sources. To secure water sources from overgrazing, a holistic and integrated approach is required to continuously engage agro-pastoralists and pastoralists in decision making. The idea is make pastoralists and agro-pastoralists

understand consequences of overgrazing and unsustainable land use practices on water sources.

#### *4.7 Access to a ritual site along the Mgeta River at Masarawe/Bunduki village.*

At Masarawe/Bunduki village there is a well protected forest patch along the Mgeta River that is used as a ritual site (**Plate 25**). The ritual site has been protected for years using local institutions/traditional management systems and taboos. The PAPs raised their concern and worried whether installation of concrete beacons will deny them access to the ritual site that covers some parts of the river banks (within 0 m from the Mgeta River). The WRBWO will make sure that the traditional leaders are transparently engaged to guide access to the ritual site during installation of concrete beacons along the Mgeta River. The project team will make sure the ritual site is full protected in accordance with the World Bank Policy on Physical Cultural Resources<sup>31</sup>.



**Plate 25:** A sketch map showing a forest patch along the Mgeta River that is used as a ritual site at Bunduki village, Mvomero District.

#### *4.8 Access for continued maintenance of roads connecting villages in Mgeta Division and Morogoro Municipality.*

Some parts of a main road connecting villages in Mgeta Division and Morogoro Municipality passes along the Mgeta River (**Plate 26**). Similarly, some parts of the Kibaoni-Vinile road through Bunduki village passes along the Mgeta River. Villagers were concerned that maintenance of the roads along the Mgeta River (within 30 m) might be restricted after installation of concrete beacons. The project management team at Wami/Ruvu is keenly engaging with the Tanzania Rural and Urban Roads Agency (TARURA) to make sure that environmental issues (including eco-engineering) are

<sup>31</sup> World Bank-Operational Manual - OP 4.11 - Physical Cultural Resources



thoroughly taken care during maintenance of roads that goes along the Mgeta and other rivers in Morogoro and Mvomero districts. One of the measures recommended to TARURA is to avoid and/reduce activities that might clear riverine vegetation within 5 meters from the river banks.



**Plate 26:** *A main road connecting Mgeta Division and Morogoro Municipality (left) and a road connecting the Mgeta Secondary to the Morogoro-Mgeta Road (right) – (Photo: Kalumanga, 2021).*

#### *4.9 Access to flat plots to establish trenches and supply water tapped from upstream sources to supply farm plots downstream.*

Irrigation sustains smallholder farming in Mgeta and Mlali Division along the Mgeta River. To supply water from upstream to farm plots downstream, smallholder farmers normally establish trenches and direct water to different zones in their village lands (**Plate 27**). Flat lands along the Mgeta River are mostly used to establish the trenches to distribute water to different farm plots. The PAPs were concerned that installation of concrete beacons along the Mgeta River (30 m) will restrict the PAPs to establish trenches and farm plots for irrigation.



**Plate 27:** *A trench directing water from upper stream sources to farm plots downstream along the Mgeta River (Photo: Kalumanga, 2021).*

#### *4.10 On cutting large trees along the Mvuha, Ruvu and Mgeta rivers to keep away vervet monkeys, which destroy crops*

Some PAPs are concerned that installation of concrete beacons may prohibit people from cutting trees along the river banks. Yet, cutting down trees has been used as a strategy to keep away vervet monkeys that destroy their crops (**Plate 28**). *'Hope I will not stop cutting trees along the Mvuha River because large trees adjacent to my farm plots host Vervet monkeys, which are very destructive to our crops'*, said a 74 year participant during a discussion at Lukulunge village, Morogoro District. People are concerned that, if the large trees are not cut, then risk of crop loss and destruction by monkeys is likely to be high.

The cutting of large trees, however, much that it keeps away the vervet monkeys, has significant negative impact on sustainable management of the water resources in Mvuha, Ruvu and Mgeta rivers. Trees, and riverine vegetation in general, protects river banks and thus prevents flooding and loss of lives and farm plots. If continued, it is easier for the river channels to shift and increasingly pose several social risks and loss of ecosystem services required by the rural poor for their survival.

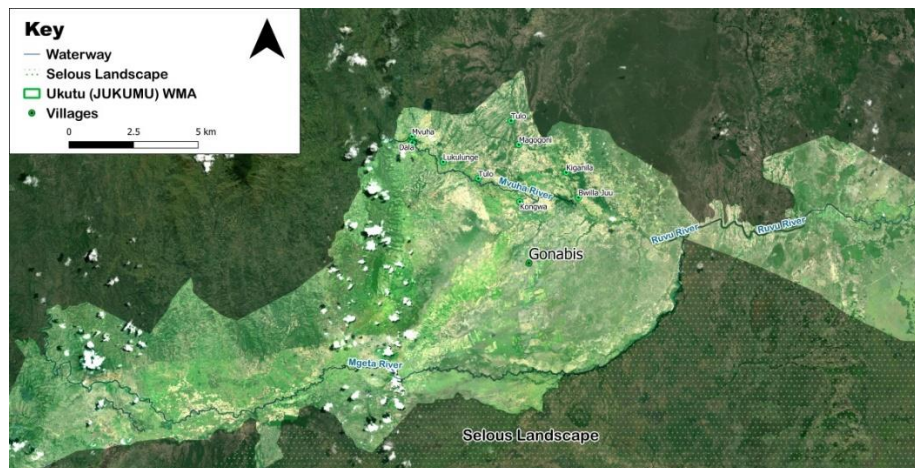


**Plate 28:** Some trees cut along the Mvuha River to keep away vervet monkeys at Lukulunge village (Photo: J. Kasambili, 2021).

Moreover, handling of vervet monkeys requires engagement of the Ministry of Natural Resources and Tourism, as well as other wildlife conservation stakeholders. The famous 'Gonabis' is a well-known dispersal area with different wildlife species in village lands in northern part of the Selous landscape (**Plate 29**). In late 1990, some villages along the Mvuha, Ruvu and Mgeta rivers were mobilized and agreed to form a consortium that manages a Wildlife Management Area (WMA) in the northern part of the Selous landscape



To join a consortium, all member villages agreed to set aside parts of their village lands for wildlife management. In turn, most village reporting Human-Wildlife Conflicts (HWCs) are mainly members of a JUKUMU WMA; e.g. Magogoni, Kiganila, and Bwila Juu, Bwila Chini, Tulo, Kongwa, among other villages. Concerns about HWCs, including cutting of large trees along the river banks, should be handled in a holistic and integrated manner. At the village levels, the Village Game Scouts (VGS) managing a WMA should actively be engaged to combat HWCs in collaboration with other conservation actors.



**Plate 29:** A sketch map showing location of the Mvuha, Ruvu and Mgeta rivers in relation to wildlife-rich areas in the northern part of the Selous landscape in the JUKUMU Wildlife Management Area (Gonabis).

#### *4.11 Access to fishing sites after installation of concrete beacons*

Some villagers are involved in seasonal fishing in Mvuha, Ruvu and Mgeta rivers. On access to fishing sites, some PAPs were concerned that installation of concrete beacons might restrict them from fishing in Mvuha and Ruvu rivers (**Plate 30**). Some PAPs, however, recommended for restrictions to be imposed on areas to be restored along the river banks. Ideally, restricted access to some restored sites along the river banks will give time to the restored vegetation to grow and in turn help to control soil erosion.



**Plate 30:** Some people involved with fishing activities in Mvuha River (left) and Ruvu River (right) at Lukulunge and Magogoni villages respectively

Further explanations were given to the PAPs and made them to understand that installation of beacons will not restrict people to access river banks for fishing. For sustainability, however, sustainable fishing practices will be highly encouraged. Some on-going fishing practices in Mvuha, Ruvu and Mgeta rivers are not sustainable. For instance, establishing a reed's fence to trap fish can even trap different materials transported by the river (load) and block normal flow of water along the river channels. As a result, weaker parts of the river banks are eroded to pave way to channel (**Plate 31**).



**Plate 31:** A typical example of unsustainable local fishing practice used in Ruvu River (Photo Kalumanga, 2020)

#### *4.12 Need to restore degraded river banks using native species (e.g. using fig species, reeds and bamboo trees)*

Some PAPs are concerned that restoration of eroded river banks might introduce exotic species that might not be effective to protect river banks from erosive forces. Most PAPs recommended to the project team to restore the river banks (0 to-10 metres) by planting fig species (*Ficus capreifolia*-locally known as Mizaya) after installation of concrete beacons (**Plate 32**). Compared to other riverine vegetation, mizaya are shorter trees, thus not preferred by vervet monkeys. Additionally, Mizaya are highly protective against erosion due to their inter-woven root systems. Compare to many riverine trees, Mizaya also grow faster. The PAPs also recommended to the project team to plant elephant grasses, reeds, and bamboo trees, which are also compatible with the mizaya.

Apart from protecting river banks from erosive forces, restoration will also prevent the changes of river channels and its associated risks on the surrounding communities (e.g. flooding, loss of grave yards, loss of farm plots, and and several other properties along the river channels).



**Plate 32:** A tree species that is highly recommended by the PAPs to be planted along the river banks after installation of concrete beacons; ‘the mizaya’ (Photo V. Ephraim, 2021).

#### *4.13 On the need for support from different stakeholders in order to diversify income generating activities, reduce reliance and pressure on river banks, and improve livelihood*

Some PAPs are concerned that installation of concrete beacons will restrict land uses on a portion of river banks between 0-15 m from the river channel. In most villages, a portion between 0-15 m is used for irrigated farming. Majority of the PAPs cannot afford to buy water pumps that can facilitate them to conduct irrigated farming some distance from the river banks. After installation of beacons, PAPs requested support from different stakeholders to be able to increase production in their farm plots away from river banks. To increase production and thus reduce food and income poverty, the PAPs require reliable extension services, affordable agro-chemicals (that will also not affect water quality), storage facilities for horticultural produce, linkages to markets and financial services and other measures to reduce post-harvest losses. The project management team has already managed to consult different stakeholders such as CARE International –Tanzania, SAT and MVIWATA to discuss mechanisms that can be used to assist the PAPs to improve production and thus improve their livelihood and wellbeing.

In the discussions, the PAPs also requested to be linked to opportunity that will make them engage in non-farming activities. Instead of relying entirely on rain-fed and irrigated farming along the river banks, the PAPs requested to be linked to opportunities that will supplement their income and improve livelihood. Similar to farming activities, non-farm activities (e.g. petty business) also require support to be able to access financial services and markets.

#### *4.14 On health issues such as HIV/AIDS and communicable diseases (e.g. COVID-19) during installation of concrete beacons*

The PAPs are concerned that some people from other places away from Morogoro District, and away from their villages, might be engaged by the project management team during installation of concrete beacons. To remain safe from HIV/AIDS and other communicable diseases, the PAPs requested the project management team to continuously engage



public health workers to create awareness, and if possible, distribute necessary safety materials (e.g. condoms, soap and water for regular washing of hands, sanitizers, facemasks, etc.).

## **CHAPTER 6: PROPOSED ACTIONS TO RESTORE AND REHABILITATE LIVELIHOOD ALONG THE MVUHA, RUVU AND MGETA RIVERS: ELIGIBILITY AND ENTITLEMENT OF PAPs**

The proposed livelihood restoration and rehabilitation actions are divided into two parts; a) livelihood restoration and rehabilitation actions based on PAPs' immediate needs; and b) livelihood restoration and rehabilitation actions based on long-term livelihood sustainability needs.

### **A: livelihood restoration and rehabilitation actions based on PAPs' immediate needs**

**6.1 Save lives:** *permit people to access freshwater from the rivers and permit them, for their safety from crocodiles and hippopotamus, to clear some vegetation on river banks for visibility. Size of cleared sites, however, should be minimal to avoid significant impacts on the environment.*

Installation of concrete beacons will restrict the PAPs to clear vegetation on the river banks (0-10 m). To access freshwater, people require walking paths and specific sites on the river banks that are free from vegetation (**Plate 33**). Yearly, there are death reports of people killed by crocodiles while fetching water, especially along the Mvuha and Ruvu rivers (e.g. Kiganila, Magogoni, Bwila Juu and Bwila Chini villages). During installation of concrete beacons, specific sites that will be used by PAPs and other villagers to access fresh water from the Mvuha, Ruvu and Mgeta rivers will be demarcated. As a long-term measure, the Wami/Ruvu Basin Water Office (WRBWO) will set aside funds to install structures on river banks that will protect people while accessing freshwater and protect river banks from erosion.



**Plate 33:** One the PAPs fetching water from Mvuha River at Dala village

### *6.2 Support and provide guidance to families intending to voluntarily exhume the buried remains along the Mvuha and Ruvu Rivers in accordance with the Graves (Removal) Act No. 9 of 1969*

Along the Ruvu River, some families at Tununguo and Kisanga Stand villages have voluntarily started to exhume buried remains of their relatives. The entire process to exhume the buried human is a social issue, but with great public health concern. The project team, therefore, will support and guide the entire process to exhume buried human remains in accordance with the Graves (Removal) Act No.9 of 1969. To do that, the project team will engage the Minister of Water to give notice of his intention to facilitate removal of some graves and dead body in Tununguo and Kisanga stand villages (Section 4)<sup>32</sup>. The notice to be given by the Minister will describe the land from which it intended to remove the graves and dead body, and an address at which particulars of the graves and dead bodies concerned may be inspected. The notice will also give a name and description of the cemetery or burial ground where it is proposed to re-enter the dead bodies and the manner in which it is proposed to re-instate such graves or any parts thereof. With due regard to religious matters, solemnity, respectful treatment and privacy, the process will ensure that no dead body is exposed to public view in a manner which is injurious to public health. In other words, government permits and traditional/religious rites should be carefully considered in the entire process to exhume the buried bodies.

Regarding compensation, Section 9 of the Graves (Removal) Act No.9 of 1969; (subsection 1 and 2) stipulated clearly how the process will be handled -‘*where the removal of a grave or dead body is undertaken by a person interested, compensation shall be limited to reasonable expenses incurred in the removal, transportation, reinstatement and re-interment of the grave or dead body and any placatory or expiatory ties or other ceremony accompanying such removal and re-interment*’. The WRBWO, therefore, should facilitate the removal in accordance with Section 9, subsection 1 and 2 of the Graves (Removal) Act No.9 of 1969.

### *6.3 Consult clan/family leaders before installation of concrete beacons in graveyards along the Mvuha and Ruvu Rivers.*

Some sites along the Mvuha and Ruvu rivers have clan/family graveyards that are still attended by clan/family members (**Plate 34**). Graveyards are respected. Traditionally, access to graveyards require permission from clan/family leaders. Prior information, therefore, will be given to the clan/family members to be aware about the timing for installation of concrete beacons in and/or around graveyards.

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<sup>32</sup> Section 4: Notice of intention to remove the graves – The Minister shall give notice of intention to remove graves in any area.



**Plate 34:** An elder during a visit at one of family graveyard at Kisanga stand village along the Ruvu River (Photo: Joseph Evance, 2021).

#### *6.4 Permit people to have access to some walking paths after installation of concrete beacons along the river banks*

Some land uses will be restricted after installation of concrete beacons along the river banks. The WRBWO through the project team will permit people to use walking paths that connects some parts of the village and even cross villages. Permission will be granted to a walking path connecting the Mvuha centre and villages in Kasanga ward; within 60 m along the Mvuha River (**Plate 35**). Similarly, permits will be given to walking paths that connects Kododo-Yowe villages, Nyandira-Misengele, and Masalawe-Homboza villages along the Mgeta River. Sign posts will be installed to illustrate some of the land use practices allowed along the walking path and acts to be prohibited (e.g. setting fire, cutting trees, and actions that pollute river banks and flowing water in the rivers). In other words, while people will be permitted to use the walking paths, they will also be made aware to observe good practices to protect the river banks and entire riverine systems.



**Plate 34:** Location of the Mvuha-Kasanga walking path along 60 m from the Mvuha River

*6.5 Permit the PAPs to establish special areas to park and operate canoes while making sure they protect the integrity of riverine systems*

Installation of concrete beacons will consider places along the river banks that can be used by the PAPs and other villagers to park and operate canoes. People will be permitted to establish special zones to park and operate canoes along the river banks. The process to establish places to park and operate canoes, however, involves clearing of riverine vegetation. Removal of vegetation makes riverbanks prone to flooding, which in turn is a threat to lives and properties (**Plate 36**). For sustainability, guidance is needed to make sure areas to park and operate canoes is protected and people regularly observe sustainable practices to conserve the river banks and sustain ecosystem services required by the rural poor for their survival (e.g. collection of wastes, and avoidance to cut trees on the river banks).



**Plate 36:** A parked canoe ready to move people from one side of the Mvuha River at Tulo village (Photo V. Ephraim, 2021)

*6.6 Permit livestock keepers to have access to freshwater in Mvuha and Ruvu rivers using very specific sites to be agreed in each village.*

Installation of concrete beacons will restrict livestock grazing, among other land uses; especially 0-15 m from the river bank. To be able to access fresh water, the Wami/Ruvu Basin Office will permit livestock keepers to access freshwater through some specific sites along the river banks (**Plate 37**). Care will be taken, however, to make sure water quality and the integrity of riverine system is effectively observed. Overgrazing and excessive use of same place along river banks could lead to erosion and expose communities to flooding. Erosion along the river banks could also lead to massive loss of ecosystem services required by PAPs and other people at different levels in Tanzania.





**Plate 37:** Cattle at a point used by livestock keepers to access fresh water along the Mvuha River at Lukulunge village (Photo V. Ephraim, 2021)

*6.7 Leverage resources with state and non-state actors and continue to establish infrastructure that will provide water for livestock along the Mvuha, Ruvu and lower parts of the Mgeta River.*

Installation of concrete beacons will restrict free movement of livestock along the river banks. Support to establish infrastructure that will provide water for livestock away from the rivers will minimize conflicts among different water user groups, especially farmers and pastoralists (**Plate 38**). The WRBWO will set aside funds and support efforts to establish infrastructure that provide water for livestock along the Mvuha, Ruvu and lower parts of the Mgeta River. The infrastructure that provide water for livestock away from river banks would also lead to sustainable protection of river banks and riverine vegetation.



**Plate 38:** Livestock at a cattle trough constructed by Wami/Ruvu Basin Water Office at Tulo village (Photo. Venance Ephraim, 2021)

*6.8 Support efforts to control vervet monkeys (combat human-wildlife conflicts) and restrict cutting of large trees along the river banks by engaging state and non-state actors*

Large riverine trees (e.g.. *Ficus sycomorus*) are removed along the river banks as a measure to combat human-wildlife conflicts (keep away vervet monkeys). As a short-term measure to reduce human-wildlife conflicts, but removal of large trees exposes the PAPs and other villagers to flooding and its associated risks. To secure and sustain water resources and various ecosystem services, protection of river banks and riverine vegetation is critical. To combat human-monkeys conflicts, the WRBWO will engage state and non-state actors at different levels. Some of the actors will include the District Game Officers (DGO)- Morogoro and Mvomero districts, Tanzania Wildlife Management Authority (TAWA), and the JUKUMU/UKUTU- Wildlife Management Area. measures, besides cutting of large riverine trees will be encouraged.

*6.9 Permit the PAPs to establish special areas for fishing while making sure they protect the integrity of riverine systems*

Installation of concrete beacons will consider places along the river banks that can be used by the PAPs and other villagers for fishing. People will be permitted to establish special zones for fishing along the river banks. For sustainability, guidance will be provided to make sure fishing areas and the fishing process is done in ways that does not affect the integrity of riverine systems and does not reduce the fish stock. Sustainable fishing practices and proper fishing gears will be highly encouraged (**Plate 39**).



**Plate 39:** A photo showing PAPs carrying a local fishing gear to be used in Ruvu River at Kiganila village (Photo. Joseph Evanse, 2021)

*6.10 Tap indigenous knowledge and engage state and non-state actors to restore degraded river banks along the Mvuha, Ruvu and Mgeta rivers*



Some farm plots are already affected by flooding along the Mvuha, Ruvu and Mgeta rivers (**Plate 40**). The Wami/Ruvu Basin Office will establish demonstration plots to restore degraded river banks mainly using a fig tree (*Ficus capreifolia*) locally known as Mizaya, as recommended by the PAPs. The Mizaya have proved to effectively protect the river banks from erosion and controls. Similarly, the the Wami/Ruvu Basin office will engage Tanzania Forest Services (TFS) Agency and other actors to recommend some of the tree species and crops to be planted along the river banks. Some of the criteria to select a tree species to be planted along the river banks will include water use efficiency and ability to protect the river banks from erosions.



**Plate 40:** A farm plots affected by flooding along the Mvuha River at Dala village (Photo. Joseph Evanse, 2021)

*6.11 PAPs will be allowed to select crops and trees of their preferences to plant in the permitted zones along the rivers*

PAPs along the Mvuha, Ruvu and Mgeta rivers have varied options in terms of crops and trees to be planted in the permitted zones within the 60 M to be installed with concrete beacons (**Plate 41**). Most PAPs prefer mizaya, reeds, elephant grasses and bamboo trees with 0-15 m. Other common preference includes planting of fruits trees such as mangoes, oranges, bread fruit, papayas and yams. On horticulture, PAPs prefer different crops due to a number of factors including market forces, availability of agro-chemicals, extension services, skills and knowledge, labour demand, water requirements, soil characteristics, presence of vervet monkeys, among other vermins etc.



**Plate 41:** A photo a petty trade at Mvua center along the Mvuha River (Photo. Kalumanga, 2021)

#### *6.12 Leverage resources to support initiatives to provide freshwater from Gravity-Fed Schemes in Morogoro and Mvomero districts*

Mvuha, Ruvu and Mgeta rivers are still the main sources of freshwater for various uses in adjacent villages, except in some villages such as Lukulunge village (along the Mvuha River) where some villagers have access to freshwater from the Lukulunge, Ludete and Tazangara wetlands. Similarly, along the Mgeta River, some villagers have access to freshwater from gravity-fed schemes, tapped by the villagers and/or by the government. The WRBWO will work with RUWASA to tap and supply freshwater through gravity-fed schemes (gravity flows) to different villagers along the Mvuha, Ruvu and Mvuha rivers. Presently, almost all drilled wells in villages along the Mvuha and Ruvu rivers have salinity that makes people rely on water from Mvuha and Ruvu rivers for various uses (**Plate 42**).



**Plate 42:** Photo showing drilled well and a water storage tank (at Tulo village) and children pumping water at Lukulunge village along the Mvuha River

### *6.13 Support and promote sustainable fishing practices, including aquaculture*

Presently, fishing in villages along the Mvuha and Ruvu rivers is unsustainable, usually using inefficient traditional methods. Fish catch is low and mainly for subsistence. Instead of trapping fish, sometime logs and other loads transported by river are also trapped. Piles of loads sometime diverts the river channel through weaker points, thus poses other social risks to the surrounding communities (e.g flooding associated with loss of lives and properties).

The project will promote aquaculture, preferably using common species such as catfish, etc. The project team will learn from other similar on-going aquaculture projects in Morogoro Region, and specifically in the Wami/Ruvu Basin (e.g. the former supported aquaculture project at Mbalangwe village, Morogoro District)

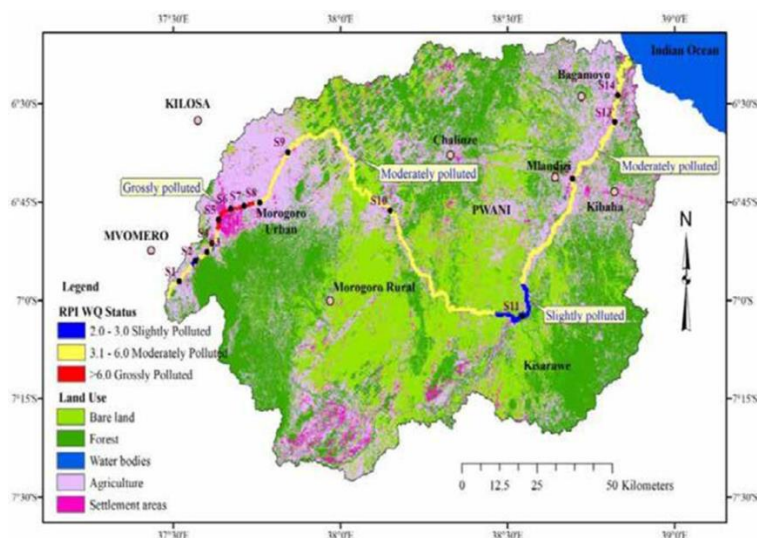
### *6.14 Support efforts to continue raising awareness about sustainable practices along the river banks*

There is high rural-rural migration in Morogoro Region, including the villages along the Mvuha and Ruvu rivers in Morogoro District. Sustained efforts, therefore, are required to create awareness on sustainable management of water sources with particular focus on new arrivals such as small-scale miners, agro-pastoralists and pastoralists (**Plate 43; 44**). The project will strengthen and engage local institutions to manage water sources apart from Water Users Associations. Awareness raising is required because small-scale miners and pastoralists, apart from destructing water sources, also destroy burial and ritual sites used by local people (e.g. Wakutu). Small-scale miners also contribute to increased water pollution in small and major river systems.



**Plate 43:** A photo showing the project management team talking to small-scale miners along the Ruvu River at Kibangile village (Photo. Kalumanga, 2021)





**Plate 44:** Land use characteristics of Ruvu river basin categorized in five classes as reported by (Aphao and Sharma, 2018). Ruvu River Pollution Index (RPI), shows land use characteristics and urban areas exhibits very high influence on water pollution followed by agricultural areas.

## **B: Livelihood restoration and rehabilitation actions through long-term targeted interventions.**

### *6.15 Engage state and non-state actors to execute the long-term interventions aiming to enhance livelihood along the Mvuha, Ruvu and Mgeta rivers*

Partnership is critical to effectively and efficiently implement livelihood enhancement strategies (delivering through partnership). Installation of beacons will restrict some land uses along the river banks, including a restriction to plant some tree species (excessive water user trees). Experience matters. There are state and non-state actors that are interested and experienced to offer support in any initiative aiming to restore, rehabilitate and sustain livelihood in rural areas (**Table 14**). In the partnership, the district community development office will be instrumental in any efforts to mobilize community groups and continue to create awareness, among other project activities. The RUWASA officers in Morogoro District have shown interest to assist in all matters related to water and sanitation in the villages crossed by the Mvuha, Ruvu and Mgeta rivers. Similarly, the district cooperative officers for Morogoro and Mvomero district have interest and mandated with all tasks to establish community groups aiming to establish and manage projects as well as microfinances (to guide implementation of the Community Microfinance Act, No. 10 of 2018).

Some of the non-state actors with interest to partner with a project team (WSSP-II) and address livelihood issues in villages along Mvuha, Ruvu and Mgeta rivers include CARE International (economic empowerment), USAID-Boresha Afya (community health), Epidemic Control (Epic), MVIWATA (Mtandao wa Vikundi vya Wakulima Tanzania-

smallholder farmers network), Sustainable Agriculture Tanzania (SAT), CAMFED Tanzania - Campaign for Female Education, and EngenderHealth (community health and gender issues). Other partners will include Tanzania Christian Refugees Services (human rights issues), Pure Lions Water (rural water supply), Tanzania Gender Networking Programme (value addition and reduce post-harvest loss), Morogoro Paralegal Centre (legal advice), UMWEMA Morogoro (Maternal and child health-nutrition; promote use of balanced diet), Tanzania Elephant Foundation (human-elephant conflicts in villages), USAID Lishe Endelevu Program (sustainable nutrition project). The project team will engage with the MVIWATA and SAT teams in order to advice smallholder farmers on how to access agricultural inputs and lucrative local and international organic markets, among other benefits (**Plate 45**).



**Plate 45:** MVIWATA and SAT sign posts showing a center for inspection of quality of horticultural produce from farmer groups in Mgeta sub-catchment (left) and SAT organic horticultural produce in Morogoro Municipality -right (Photo -Kalumanga, 2020)

The project team will also create awareness about HIV/AIDS and communicable diseases such as COVID-19. Through partnerships, the project team will engage trained public health workers already working for the USAID-Boresha Afya project in Morogoro and Mvomero districts. Public health workers will also be engaged to distribute condoms among other services (**Plate 46**).



**Plate 46:** A photo showing community health workers weighing a baby while attending clinic at the Ngong'oholo village office -along the Ruvu River (sometimes some of the office space are used by community health workers to execute their duties) (Photo: Kalumanga, 2020)



**Table 14: Proposed Livelihood Restoration and Rehabilitation options in villages along Mvuha, Ruvu and Mrivers**

SN	Existing Socio-Economic activity	Proposed Income Generating Activity	Village (s)	Requirements	Actors
1	Fishing	Aquaculture	Lukulunge -Ludete dam -Lukulunge dam -Tezangala dam	-Support villagers to clean some vegetation in dams -Support some villagers to attend training on aquaculture -Mobilize resources and procure desired fish species to be introduced in the dams -Site visits to aquaculture demonstration sites/consult other aquaculture project in Tanzania	Wami/Ruvu Basin Office, District Council, CARE International, VETA, Ministry of Livestock and Fisheries- Aquaculture Unit
			Magogoni Kiganila	-Support Mr. Gratian Buberwa to expand aquaculture facility and become a demonstration site -Mobilize other interested PAPs groups at Kiganila and Magogoni to establish fishing ponds -Support block-level aquaculture investment to attract private sector's interest -Mobilize resources to support solar-powered resources for aeration and storage -Link the PAPS to extension services	Wami/Ruvu Basin Office, District Council, CARE International, VETA, Ministry of Livestock of Fisheries- Aquaculture Unit, private sector individuals and institutions
2	Crop farming	Conservation farming - Organic farming of vegetables	All villages	-Mobilize interested PAPs along the rivers to engage in organic farming -Link the interested PAPs groups to extension services and existing smallholder farmer groups -Support interested PAPs to visit demonstration plots in Morogoro and outside Morogoro Region -Support interested PAPs groups on acquiring skills and knowledge for value addition like packaging, solar drying and semi processing Support interested PAPs groups on procuring facilities and equipment for semi processing like solar drying	Wami/Ruvu Basin Office, District Council, SAT, MVIWATA

SN	Existing Socio-Economic activity	Proposed Income Generating Activity	Village (s)	Requirements	Actors
				-Support PAPs groups on market linkages for securing liable markets for their products	
		Spices farming	Kiganila, Magogoni and Tununguo	<ul style="list-style-type: none"> <li>-Organize interested PAPs to learn different types of spices produced in the district from the investor's farm at Kiganila village (demonstration plot)</li> <li>-Mobilize resources and procure different spices' seeds as per the PAPs needs and market demands</li> <li>-Support initial costs for some interested PAPs to attend training</li> </ul>	Wami/Ruvu Basin Office, District Council, SAT, MVIWATA
		Sesame production	Mvuha Magogoni Tulo Kiganila Dala	<ul style="list-style-type: none"> <li>-Mobilize interested PAPs to establish organized groups to be linked to smallholder networks in Tanzania -MVIWATA</li> <li>-Support extension services to increase sesame production</li> <li>-Link PAP groups to private sector with interest on sesame business</li> <li>- Support interested PAPs groups on acquiring skills and knowledge for value addition techniques of Sesame</li> <li>-Mobilize resources to support high-end sesame production in villages along the rivers</li> </ul>	Wami/Ruvu Basin Office, District Council, SAT, MVIWATA Wami/Ruvu Basin Office, District Council, SAT, MVIWATA
2	Crop Farming	Vegetable processing Fruits processing Food processing	Mvuha Magogoni Tulo Kiganila Dala	<ul style="list-style-type: none"> <li>-Mobilize interested PAPs to establish organized groups to be linked to smallholder networks in Tanzania -MVIWATA</li> <li>-Support extension services on food processing techniques</li> <li>-Link PAP groups to private sector with interest on food processing/products</li> <li>-Mobilize resources to support high-end processing of vegetables, fruits and general food products</li> </ul>	Wami/Ruvu Basin Office, District Council, SAT, MVIWATA Wami/Ruvu Basin Office, District Council, SAT, MVIWATA, CARE International

SN	Existing Socio-Economic activity	Proposed Income Generating Activity	Village (s)	Requirements	Actors
				-Support interested and organized PAP groups to be linked to financial services (microfinance) and enable them to procure storage facilities and thus reduce post-harvest loss and increase	
3	Livestock keeping	Poultry -Improved diary -Cattle, sheep and goats fattening	-Kongwa -Tulo	-Mobilize interested PAPs to establish organized groups to be linked to smallholder networks in Tanzania -MVIWATA -Support extension services on livestock keeping with focus on poultry -Link PAP groups to private sector with interest on livestock keeping and livestock products -Support interested and organized PAP groups to be linked to financial services (microfinance) and enable them to procure facilities to enable high-end poultry production and livestock fattening	Wami/Ruvu Basin Office, District Council, SAT, MVIWATA Wami/Ruvu Basin Office, District Council, SAT, MVIWATA
4	Petty trading	Food/vegetable vendor groups Fruit vendor groups Weaving -Knitting - Carpentry - Tailoring - Masonry -Welding	Mvuha Kisanga stand Dala	-Mobilize interested PAPs to establish organized groups to be linked to smallholder business networks in Tanzania -MVIWATA -Support interested and organized PAP groups to be linked to financial services (microfinance) and enable them to procure facilities to enable high-end food vending and other petty trading	Wami/Ruvu Basin Office, District Council, VETA, SAT, MVIWATA
6	Bricks Making	-Identified Brick making sites away from the rivers for commercial purposes	-Dala -Kisanga stand	-Mobilize interested PAPs to be in organized groups and link them to VETA, Morogoro -Environmental conservation skills	Wami/Ruvu Basin Office, District Council, VETA

**Table 15: Proposed Livelihood restoration and rehabilitation plan on cross-cutting issues**

<b>S/N</b>	<b>Issue</b>	<b>What to Do</b>	<b>Actor</b>
1	Gender	Support awareness raising on gender equality and women empowerment	CAMFED, CARE International, TGNP,
2	Health -HIV/AIDS, -Nutrition, -Maternal and child health -COVID-19	Support basic facilities for reproductive health, HIV&AIDS Support projects that create awareness on child health education Provide preventive materials during implementation of the project (e.g. condoms, sanitizers and masks)	CARE International, USAID-Boresha Afya, Epidemic Control (Epic), CAMFED, and Engender Health
3	Environment	Support conservation education projects	SAT, CARE International, USAID-Boresha Afya, Epidemic Control (Epic), and Engender Health

## CHAPTER 7: LRRP IMPLEMENTATION ARRANGEMENTS

The Wami/Ruvu Basin Water Office (WRBWO) will engage state and non-state actors to implement the LRRP in a transparent and participatory manner (**Table 15**). Engagement of several actors will be done because implementation of LRRP require different capacities and resources. Some recommendations in the LRRP require special skills to enable the PAPs implement the proposed activities. A number of proposed actors are already implementing activities proposed in the LRRP in the villages along the Mvuha, Ruvu and Mgeta rivers. The WRBWO will leverage investments (mainly in-kind) with targeted actors and make sure the PAPs are able to restore and rehabilitate their livelihoods through different proposed options (**Table 15**). To guarantee implementation of the LRRP, the WRBWO will yearly include conservation and development-related activities in its strategies to secure water sources along the Mvuha, Ruvu and Mgeta rivers. In its annual budgets, the WRBWO will include budget items and allocations to support some of the long-term planned activities in the LRRP.

### 7.1. Engaging the Water User Associations along the Mvuha, Ruvu and Mgeta rivers

At the sub-basin level, the WRBWO will continue to work closely with members and leaders of different Water Users Associations (WUAs). Already, the project team has been able to engage the WUAs as key stakeholders in implementation of the WSSP-II. Deliberately, the project team engages different WUA committee members in order to empower them with some skills on how to engage with PAPs, among other stakeholders in the villages, and on daily basis. More emphasis has been on transparency and making sure views and concerns of all community groups (including women and the youth) are fairly considered in implementation of the WSSP-II. The WUA committee members are also mandated to make sure different community groups are aware and their concerns and views collected before, during and after installation of concrete beacons.

The WUA leaders, in other words, are already part and parcel of the project management team. On daily basis, WUAs leaders are in touch with community members, including people with farm plots along the Mgeta, Mvuha and Ruvu rivers (PAPs). The WUAs are governed through four different committees<sup>33</sup>. Constitutionally, the WUA members have mandates to engage with other stakeholders when addressing various water-related matters, including water projects<sup>34</sup>.

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<sup>33</sup> Planning and finance committee (kamati ya fedha na mipango); Environment committee (kamati ya mazingira); Defense and security committee (kamati ya ulinzi na usalama); Livestock and farming committee (kamati ya mifugo na kilimo)

<sup>34</sup> **2.2 Malengo:** a) Kujenga mahusiano ya karibu kati ya Taasisi, vijiji, kata, Idara za Serikali na vyombo vingine; b) Kutoa elimu na ushauri kwa wadau wote juu ya matumizi bora na endelevu ya rasilimali

## **7.2 Engaging the district councils to have a supporting role (technical backstopping)**

Sustainable implementation of the LRRP will require the district councils to have a supporting role (technical backstopping role). It is only a few activities in the LRRP that require short-term measures and decisions. Implementation of most activities in the LRRP require more time and will go beyond the WSSP-II (**Table 15**). The district councils have skilled employees at the district, ward and village levels (e.g. sector-specific extension officers). Engagement of the district councils will guarantee active participation of the extension officers in implementation of different proposed livelihood options at the village levels (e.g. organic horticulture, aquaculture, spice farming, poultry, construction of gravity-fed water schemes, construction of cattle troughs, etc.).

To formalize engagement of district councils, the WRBWO has Memorandum of Understanding (MoUs) with the Morogoro and Mvomero district councils in relation to the implementation of the WSSP-II. The MoUs stipulates clearly broader areas of collaboration between the WRBWO and the Morogoro and Mvomero district councils. Initially, one of the roles of the district councils was to appoint a focal person to assist in the implementation of the WSSP-II<sup>35</sup>. On daily basis, the district focal persons are required to facilitate effective coordination of ongoing and future joint activities between the WRBWO and the district councils. Additionally, the focal persons are tasked with an advisory role to the district council on issues related to the WSSP-II in their respective districts. Regular engagement with stakeholders at the local level (district and village levels) has been one of the key activities done by the district focal people. The same MoUs will be extended to implement the LRRP during and after the WSSP-II.

## **7.3 Engaging non-state actors implementing some LRRP activities in villages along the Mvuha, Ruvu and Mgeta rivers.**

Successful implementation of some activities in the LRRP will require engagement of the non-state actors. As aforementioned, some proposed activities require specialized skills and leveraged resources. Different actors have varied capacities and always support livelihood options in accordance to their plans and envisaged short term and long-term benefits. A list of different non-state actors that will be engaged to support implementation of the LRRP are listed in **Table 15**. Specific roles of each non-state actor is mentioned as well.

## **7.4 Stakeholders management**

Building good relationship with stakeholders, especially local communities, will be carefully and continuously observed and maintained by the project team and other colleagues at the WRBWO. Stakeholder management is recommended deliberately

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zilizomo katika Bonde dogo la Mto (**Mgeta, Mvuha, Ruvu, n.k.**). **3.6 Majukumu ya kila siku ya**

**Mwanajumuiya:** Kusimamia shughuli na miradi yote ya Rasilimali ya Maji katika eneo la Jumuiya

<sup>35</sup> Article V: Role of the District Council- Memorandum of Understanding between the Wami/Ruvu Basin Water Board and the Morogoro District Council.



because is another critical element to be considered to successfully implement the LRRP. Care will be taken to make sure that stakeholder engagement and management is not the job of one member of the project team. Rather, a responsibility of all employees at Wami/Ruvu.

At least everyone at Wami/Ruvu office, and particularly the project team members, understand their roles and know how to follow the right approach to communicate and engage with the stakeholders at different levels. The project team members are regularly reminded that quality stakeholder management is part of good project governance and requires *'providing clarity about stakeholder engagement roles and responsibilities and what is expected of people involved in the project'*<sup>36</sup>.

### **7.5 Disclosure of information at different project stages**


All information related to installation of beacons and implementation of the LRRP will be translated from English to Kiswahili. All information will be disclosed to stakeholders at different levels in a timely, understandable, accessible, and appropriate manner and format. Additionally, the project team will continuously share their mobile contacts with all the stakeholders to constantly engage with stakeholders throughout the project time. The project management team will openly share contacts with different stakeholders to enable them share their views and concerns about installation of concrete beacons and implementation of the LRRP.

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<sup>36</sup> <https://www.apm.org.uk/resources/find-a-resource/stakeholder-engagement/key-principles/>

**Table 16: The LRRP implementation arrangement**

SN	Activity/Village (s)	Actions to be taken	Capacity required	Institutions/Roles
1	Aquaculture projects  Lukulunge -Ludete dam -Lukulunge dam -Tezangala dam Magogoni Kiganila	i) Establish and support management of aquaculture projects  ii) Establish aquaculture committee in the selected villages (at least 10 members (5 men and 5 women)  iii) Procure desired fish species and introduce in the dams  iv) Procure solar-powered facilities for storage and semi-processing (fish drying)	i) Management of aquaculture projects (establishment of aquaculture facilities) – Train of the trainers  ii) Fish-processing  iii) Fish packaging (value addition) for transportation to local and international markets  iv) Marketing and fish business	1: Wami/Ruvu Basin Office (to coordinate the process to establish aquaculture and its associated committees)  2: CARE International (Morogoro Project): Community mobilization and establishment of community committees to manage ponds and fish value chains  3: Ministry of Livestock and Fisheries- Aquaculture Unit (technical backstopping –pond management, coordinate knowledge exchange tour, monitor and evaluate aquaculture projects, support extension services in Morogoro and Mvomero districts)  4: Morogoro and Mvomero District Councils (technical backstopping and overall coordinator of the ponds management and aquaculture projects)  5: Research institutions (Tanzania Fisheries Institute-TAFIRI, School of Marine and Fisheries Technology, University of Dar es Salaam to advise
2	Spice farming  Kiganila Villages along the Mgeta River	i) Train PAPs on organic spice farming  ii) Establish demonstration farms for organic spice farming in Morogoro and Mvomero districts  iii) Procure and distribute spice varieties to be required in different villages	i) Organic spice farming concept  ii) Spice packaging (value addition) for transportation to local and international markets  iv) Marketing and spice business	1: Wami/Ruvu Basin Office (to coordinate the process to create awareness and establish organic spice farming in the villages along the Mvuha, Ruvu and Mgeta rivers)  2: MVIWATA: Community mobilization and establishment of community committees to manage spice farms  3: SAT – Morogoro (technical backstopping –organic spice farming and issues related to value addition and marketing  4: Morogoro and Mvomero District Councils: technical backstopping and overall coordinator of the organic spice farms)

3	Sesame farming  Villages along the Mvuha and Ruvu rivers	<p>i) Train PAPs on sustainable sesame farming</p> <p>ii) Establish demonstration farms for sesame farming in Morogoro and Mvomero districts</p> <p>iii) Procure and donate solar-powered semi-processing facilities for value addition and reduce post-harvest losses to different value chains</p>	<p>i) Sesame production at commercial scale</p> <p>ii) Sesame processing and packaging (value addition) for transportation to local and international markets</p> <p>iv) Marketing</p>	<p>1: Wami/Ruvu Basin Office: coordinate training to empower smallholder groups with knowledge on sustainable sesame production (organic production)</p> <p>2: MVIWATA: Community mobilization and establishment of smallholder farmer groups engaged in organic sesame production</p> <p>3: SAT – Morogoro: technical backstopping –sustainable sesame production</p> <p>4: Morogoro and Mvomero District Councils: technical backstopping and overall coordinator of the sesame production</p>
4	Organic production of vegetables (horticulture)	<p>i) Train PAPs on organic horticulture</p> <p>ii) Establish demonstration plots to help the PAPs learn about organic horticulture through site visits in Morogoro and Mvomero districts</p> <p>iii) Establish smallholder farmer groups under MVIWATA (smallholder farmers fora) targeting the PAPs</p> <p>iv) Procure high quality seeds and sell to the smallholder farmer groups at the subsidized prices</p> <p>v) Procure and install solar-powered semi-</p>	<p>i) Organic farming/organic horticulture/ agro-chemical and threats-related to agro-chemicals</p> <p>ii) Semi-processing, storage and packaging (value addition) for transportation to local and international markets</p> <p>iii) Marketing</p>	<p>1: Wami/Ruvu Basin Office: coordinate training to empower PAPs and smallholder groups on sustainable horticulture (organic production)</p> <p>2: MVIWATA: Community mobilization and establishment of smallholder farmer groups engaged in organic farming</p> <p>3: SAT – Morogoro (technical backstopping on organic farming, market-linkages (SAT organic shops)</p>  <p>4: Morogoro and Mvomero District Councils: extension services, technical backstopping on organic farming, marketing of smallholder horticultural produce on districts websites and other district communication channels)</p>

		processing and storage facilities to minimize post-harvest loss of various horticultural horticulture centres produce in at least two		
5	Poultry (all villages)  Sustainable livestock keeping  Kongwa Tulo	<p>i) Train PAPs on sustainable livestock keeping, including improved breeds</p> <p>ii) Construct cattle troughs to reduce livestock dependence on rivers</p> <p>iii) Establish pastoralist groups targeting PAPs for easy provision of extension services</p> <p>iv) Strengthen veterinary and extension services through different state and non-state actors</p>	<p>i) Types of improved breeds and cattle fattening (opportunities and challenges)</p> <p>ii) Veterinary services/extension services</p> <p>iii) Pasture, pasture production and management</p> <p>iv) Livestock market requirement and marketing</p>	<p>1: Wami/Ruvu Basin Office: coordinate training to empower PAPs and smallholder groups on poultry and sustainable livestock keeping</p> <p>2: CARE-International-Morogoro Project: Community mobilization and empowerment through saving and credits (Poultry projects in Morogoro District)</p> <p>3: Pure Lions Water: Rural water supply project, including construction of cattle troughs</p> <p>4: Morogoro and Mvomero District Councils: extension services, technical backstopping on poultry, sustainable livestock keeping, pasture management and marketing of livestock products on district websites and other district communication channels)</p>
6	Small-scale business/ entrepreneurship  Mvuha Kisanga stand Dala Kibaoni/Mgeta Pinde Bunduki	<p>i) Train PAPs on entrepreneurship on their respective small-scale businesses</p> <p>ii) Establish and/or strengthen already existing Village Loans and Saving Associations (VLSAs; e.g. VICOBA)</p> <p>iii) Fund initial capital to support newly established</p>	<p>i) Entrepreneurial knowledge skills on fruit vending, weaving, knitting, carpentry, tailoring, masonry, welding, brick making etc.</p> <p>ii) VLSAs (e.g. VICOBA)</p> <p>iii) Financial management/microfinance</p> <p>iv) Legal matters</p>	<p>1: Wami/Ruvu Basin Office: coordinate training to empower PAPs with entrepreneurial skills in their respective businesses</p> <p>2: CARE-International-Morogoro Project: Community mobilization and empowerment through saving and credits (VLSAs)</p> <p>3: Pure Lions Water: support rural water supply projects in villages along the Mvuha River</p> <p>4: Tanzania Gender Networking Programme (TGNP): support projects on value addition to reduce post-harvest loss in Morogoro Region, e.g. villages along the Mvuha and Ruvu River</p>

		VLSAs for community revolving funds		<p>5: Morogoro Paralegal Centre: Legal advice on different community matters (microfinance contracts, etc)</p> <p>6: UMWEMA-Morogoro: Promote balanced diet in Morogoro Region, including villages along the Mvuha, Ruvu and Mgeta rivers (an opportunity for food-related businesses)</p> <p>7: USAID-Lishe Endelevu Programme: Promote balanced diet in Morogoro Region, including villages along the Mvuha, Ruvu and Mgeta rivers (an opportunity for food-related businesses)</p> <p>8: RUWASA: support rural water supply in Mvomero and Morogoro district</p> <p>9: Morogoro and Mvomero District Councils: technical support through different departments (including community development, cooperatives, agriculture, livestock, beekeeping, etc. ). marketing of different products from different groups (VLSAs) on district websites and other district communication channels)</p>
7	<p>Cross cutting issues</p> <p>All villages</p>	<p>i) Create awareness on health-related matters to PAPs (COVID-19, HIV/AIDS, nutrition, Maternal and child health)</p> <p>ii) Create awareness on gender-related matters with a focus on women entitlement to land and other resources</p> <p>iii) Create awareness on sustainable water sources management with a focus on Mvuha, Ruvu and Mgeta rivers</p> <p>iv) Create awareness on Human-Wildlife Conflicts</p>	<p>i) Handling of COVID-19 in villages</p> <p>ii) HIV/AIDS</p> <p>iii) Nutrition and balanced diet</p> <p>iv) Gender-related issues including entitlement to land among other resources/properties</p> <p>v) Sustainable water resources management with a focus on Mvuha, Ruvu and Mgeta rivers</p> <p>vi) Traditional and conventional measures to minimize Human-Wildlife Conflicts (HWCs) along Mvuha, Ruvu and Mgeta rivers</p>	<p>1: Wami/Ruvu Basin Office: coordinate state and non-state actors to train the PAPs on cross-cutting issues</p> <p>2: Tanzania Gender Networking Programme (TGNP): support projects on gender-related matters in Morogoro Region, e.g. villages along the Mvuha and Ruvu River</p> <p>3: Morogoro Paralegal Centre: Legal advice on different community matters (including women entitlement to resources as well as women and child abuse)</p> <p>4: UMWEMA-Morogoro: Promote balanced diet in Morogoro Region, including villages along the Mvuha, Ruvu and Mgeta rivers</p> <p>5: USAID-Lishe Endelevu Programme: Promote balanced diet in Morogoro Region, including villages along the Mvuha, Ruvu and Mgeta</p> <p>6: Tanzania Christian Refugees Services: support human right issues in Morogoro District</p> <p>7: Tanzania Elephant Foundation: engage community members in efforts to reduce human-elephant conflicts in villages, among other HWCs in Morogoro District.</p>

		(HWCs) in order to reduce incidents of HWCs in some village along the Mvuha, Ruvu and Mgeta river (e.g. Magogoni and Kiganila villages along the Ruvu River)		<p>8: CAMFED Tanzania: engaged in campaign for Female Education in Morogoro District</p> <p>9: EngenderHealth –deals with community health and gender issues in Morogoro District</p> <p>10: Tanzania Forest Services (TFS) Agency –manages nature and forest reserves in Tanzania including those found in Morogoro and Mvomero districts</p> <p>11. Morogoro and Mvomero District Councils: technical support through different departments to address the cross-cutting issues</p>
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## CHAPTER 8: SCHEDULE OF IMPLEMENTATION OF THE LRRP AND ITS BUDGET

Schedule and budget to implement the LRRP are aligned to match type of action (s) required to restore and rehabilitate a specific type of livelihood options as described in Chapter 5. Some options will not require funding rather decisions by the project team at WRBWO..

All actions that require decisions from the WRBWO will also require formal procedures to communicate the decisions made to the PAPs through the district councils, village leaders and WUA leaders. Examples of actions that will require decisions and not necessarily budgets includes, permit to clear some vegetation on river banks to access fresh water (5.1); permits on walking paths along river banks (5.4); permits to clear sites for canoing (5.5); permit for livestock keepers to have access to freshwater (5.6); permit to establish special fishing areas (5.9); and permits to allow PAPs to select crops and conservation-friendly trees of their preferences (5.11). Some funds might be required, however, to facilitate graves removal (5.2) and consultation meetings with clan/family members before installation of concrete beacons in ritual sites and communal lands (5.3).

Some of the actions that require long-term interventions and budgets are described in **Table 16**. Funds are required to implement long-term actions proposed to restore and rehabilitate PAPs' livelihood in villages along the Mvuha, Ruvu and Mgeta rivers. The WRBWO will set aside funds and engage state and non-state stakeholders to implement the proposed actions (**Table 16**). Specific budget will be required to establish water-for-livestock infrastructure (5.7), support efforts to combat human-wildlife conflicts (5.8), restoration of degraded river banks (5.10), support gravity-fed water schemes (5.12), support and promote aquaculture (5.13), awareness projects on sustainable practices (5.14).

Only the actions that require decisions will be achieved in only one Financial Year (FY). Other actions will require more than one FY to be implemented (**Table 16**). Implementation of some activities will start immediately in FY2021/2022. The WRBWO will also need time to establish partnerships and identify entry points to leverage in-kind support from interested state and non-state stakeholders. Identified partners have specific areas of interest.

**Table 17: Schedule of Implementation of the LRRP and its Budget**

S/N	Activity	FY21/22				FY22/23				FY23/24				Budget
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	Confirmation of PAPs and entitlements by WRBWO													10,000,000
2	Meeting with PAPs to ascertain PAPs entitlement under LRRP and notice of change in land use													20,000,000
3	Discussion and recruitment of NGOs to leverage efforts and implement LRRP													10,000,000
4	Support graves removal along river banks (5.2)													30,000,000
5	Facilitate consultation meetings with clan/family members (5.3)													15,000,000
6	Leverage resources to establish water -infrastructure for livestock (5.7)													300,000,000
7	Support efforts to combat human-wildlife conflicts (5.8)													25,000,000
8	Support restoration of degraded river banks- Tap indigenous knowledge (5.10)													45,000,000
9	Leverage resources to support gravity-fed water schemes (5.12)													1,500,000,000
10	Support and promote sustainable fishing practices - aquaculture projects (5.13)													150,000,000
11	Support awareness projects on sustainable practices along the river banks (5.14)													30,000,000

S/N	Activity	FY21/22				FY22/23				FY23/24				Budget
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
12	<i>Support and promote spice farming projects (5.15; Table 8)</i>													35,000,000
13	<i>Support and promote sesame farming</i>													45,000,000
14	<i>Support and promote organic production of vegetables – horticulture (5.15; Table 8)</i>													48,000,000
15	<i>Support and promote poultry projects</i>													46,000,000
16	<i>Support and promote small-scale business/entrepreneurship (5.15; Table 8)</i>													50,000,000
17	<i>Support project addressing cross cutting issues (health, gender and environment conservation) (5.15; Table 8)</i>													35,000,000
18	<i>LRRP Audit</i>													20,000,000
	<b>GRAND TOTAL</b>													<b>2,414,000,000</b>

## **CHAPTER 9: MONITORING AND EVALUATION OF THE IMPLEMENTATION OF THE LRRP.**

The WRBWO will facilitate mechanisms to actively monitor and evaluate proposed actions to implement the LRRP. Both internal and external monitoring and evaluation will be guided by different targets set in each proposed intervention (**Table 17**). Immediate actions will be monitored immediately and internally after the installation of concrete beacons. Immediate actions for monitoring during the FY2021/2022, will include approval of permits to clear some vegetation on river banks to access fresh water (5.1); permits on walking paths along river banks (5.4); permits to clear sites for canoing (5.5); permits for livestock keepers to have access to freshwater (5.6); permits to establish special fishing areas (5.9); and permits to allow PAPs to select crops and conservation-friendly trees of their preferences (5.11). Most of the immediate actions does not require budgets and bureaucratic procedures to be implemented. In FY2021/2022, most of the permits will be approved and will allow the PAPs to have access to key resources along the Mvuha, Ruvu and Mgeta rivers.

Most of the proposed measures to restore and rehabilitate livelihood require more time compared to short-term measures. For instance, more time might be required to get approval to engage non-state actors in the implementation of the LRRP. The WRBWO might also needs approval from the ministerial level to engage state actors from other ministries (apart the Ministry of Water). In other words, monitoring and evaluation of most LRRP interventions will vary in each financial years (FYs). In FY2021/2022, monitoring and evaluation will be focused on how the WRBWO have managed to secure government approval to engage state and non-state actors to implement the LRRP. Which specific activities are approved by the government and allows the WRBWO to engage other stakeholders to implement the LRRP?

Each proposed activity in the LRRP have targeted number of beneficiaries. At least in each LRRP activity, engagement of women and youth will be highly encouraged. Proportion of women and youth in each group of beneficiaries will be assessed before any approval for support.

**Table 18: Monitoring and Evaluation of the implementation of the LRRP**

S/N	Activity	FY21/22				FY22/23				FY23/24				Targets
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	<i>Confirmation of PAPs and entitlements by WRBWO</i>													1130 PAPs along Mvuha, Ruvu and Mgeta rivers confirmed
2	<i>Meeting with PAPs to ascertain PAPs entitlement under LRRP and notice of change in land use</i>													1130 PAPs along Mvuha, Ruvu and Mgeta rivers met.
3	<i>Discussion and recruitment of NGOs to leverage efforts and implement LRRP</i>													At least 5 NGOs identified and Recruited in the project activity
4	<i>Support graves removal along river banks (5.2)</i>													20 graves removed at Tununguo and Kisanga Stand villages
5	<i>Facilitate consultation meetings with clan/family members (5.3)</i>													At least 6 meetings with clan leaders at Bunduki-2, Tununguo-2 and Kisanga stand-2
6	<i>Leverage resources to establish water - infrastructure for livestock (5.7)</i>													8 cattle troughs along
7	<i>Support efforts to combat human-wildlife conflicts (5.8)</i>													Zero large riverine tree removed along Mvuha, Ruvu and Mgeta rivers
8	<i>Support restoration of degraded river banks- Tap indigenous knowledge (5.10)</i>													20 acres restored along Mhuva and Ruvu
9	<i>Leverage resources to support gravity-fed water schemes (5.12)</i>													1 gravity-fed scheme at Mvuha-Dala-Lukulunge
10	<i>Support and promote sustainable fishing practices - aquaculture projects (5.13)</i>													30 aquaculture projects/600 PAPs



S/N	Activity	FY21/22				FY22/23				FY23/24				Targets
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
11	<i>Support awareness projects on sustainable practices along the river banks (5.14)</i>													100 sign posts – protect water sources/zero farming on river banks
12	<i>Support and promote spice farming projects (5.15; Table 8)</i>													15 spice farms at Kiganila-5, Kisanga stand-5and Magogoni-5/15 PAPs
13	<i>Support and promote sesame farming</i>													100 acres of sesame/100 PAPs
14	<i>Support and promote organic production of vegetables –horticulture (5.15; Table 8)</i>													60 organic farm plots/60 PAPs
15	<i>Support and promote poultry projects</i>													20 projects/300 PAPs
16	<i>Support and promote small-scale business/entrepreneurship (5.15; Table 8)</i>													30 VSLAs (VICOBA)- Mvuha-10, Ruvu-10, Mgeta -10/600 PAPs,
17	<i>Support project addressing cross cutting issues (health, gender and environment conservation) (5.15; Table 8)</i>													1,500 boxes- masks, 300 containers – sanitizers, 1000 boxes- condoms
18	<i>LRRP Audit</i>													Audit quaterly and annual reports

## **CHAPTER 10: GRIEVANCE REDRESS MECHANISM**

The Grievance Redress Mechanism (GRM) will be aligned to the overall GRM for the WSSP-II. GRM has clear sections that stipulate clearly about proper channels to submit complaints (section 2.1), project grievance committees at different levels (section 2.2), handling of confidentiality and conflict of interest (section 2.3) as well as receipt of complaints (section 2.4.). The GRM for the WSSP-II also points out clearly how grievances will be recorded and sorted (section 2.5), review of complaints (section 2.6), feedback notification to the complainants (section 2.7), investigation procedures (section 2.8), responding to complaints (section 2.9), and appeal procedures (section 3).

### **10.1 The Grievance Redress Committees and their composition**

As stipulated in the GRM for the WSSP II, grievances that will emerge during and after installation of concrete beacons along the Mvuhwa, Ruvu and Mgeta rivers will be handled by different committees and at different levels. To handle land-related grievances, however, a committee at the regional level is proposed. Chaired by the Morogoro Regional Commissioner, the regional-level committee will handle all land-related grievances to be submitted from Mvomero and Morogoro district authorities.

At the village level, two more members are also proposed; a representative from the village land council and a representative from the water users association. At the ward level, one more member is proposed to represent the ward land council. The village and ward land councils are established in accordance with Village Land Act No. 5 of 1999 to handle land-related disputes at the village and ward levels. Ideally, members from the village and ward land councils will assist the village and ward level grievance committees to explain some mediation techniques and help committee members to observe (a) any customary principles of mediation; (b) natural justice in so far as any customary principles of mediation do provide for them in accordance with the Village Land Act No. 5 of 1999. Additionally, representatives from the village and ward land councils will help to create a strategic link between the grievance redress committees and existing land councils at the village and ward levels. Any land-related disputes to be handled by land councils at village and ward levels, will also be well-known at the grievance redress committees, and vice versa.

Composition of each grievance redress committee is detailed as follows:

*i) Village Grievance Redress Committee*

Village Chairperson – Chair Person

Village Executive Officer (VEO) - Secretary,

Representative from the PAPs Members

Neutral Person/non PAP - Member

Extension officers (community development, agriculture/livestock, health)

Representative from NGO within village level - Member  
Representative from the the Village Land Committee  
Representative from the Water Users Association

*ii) Ward Grievance Redress Committee*

Ward Development Committee – Chairperson  
Ward Executive Officer (WEO) – Secretary,  
Neutral Person/ Non PAP - Member  
Representative from the PAPs Members  
Extension officers (community development, agriculture/livestock, health)  
Representative from NGO within Ward level - Member

*iii) District Grievance Redress Committee*

District Commissioner – Chairperson  
District Executive Director - Secretary  
District land officer - Member  
District Land Valuer - Member  
GRM focal person at District level  
District Lawyer - Member  
Wami/Ruvu Basin Representative - Member  
Ministry - Member  
Neutral Person (Not PAP) - Member  
PAP representative  
Local NGO within District level - Member  
Consultant - Member (depend on complaint)

*iv) Regional Grievance Redress Committee*

Regional Commissioner – Chairperson  
Regional Administrative Secretary - RAS  
Regional land officer - Member  
Regional Land Valuer - Member  
Regional Lawyer - Member  
Wami/Ruvu Basin Representative - Member  
Ministry - Member  
Neutral Person (Not PAP) - Member  
PAP representative

*v) Ministerial Grievance Redress Committee*

DLU – Chairperson  
HSS – Secretary  
Respective Division representative  
Complainant  
Social Specialist from MoW  
Ministry's complains Officer

## **10.2 The Grievance reporting and handling process**

Before and during the installation of concrete beacons, the PAPs will be made to understand about the GRM and different committees. The project team will also create awareness to the PAPs about how to access and fill the grievance registration forms, how to receive notification, the grievance resolution forms and grievance registration books. The project management team will make sure the GRM is done in a very transparent manner, during and after installation of concrete beacons. To be more proactive and probably reduce and/or avoid more grievances, the project team will constantly engage with the PAPs in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination, and intimidation in different GRM-related reporting procedures.

## **CHAPTER 11: CONCLUSION AND RECOMMENDATIONS**

### **11.1 Conclusion**

Existence of the Mvuha, Ruvu and Mgeta rivers is an important livelihood opportunity for majority of the rural poor in Morogoro Region. However, on-going unsustainable land use practices along the Mvuha, Ruvu and Mgeta rivers are threats to sustainability of water resources and livelihood. During field visits to identify the Project Affected People/Parties (PAPs) and understand their existing livelihood options, it was evident that all major livelihood options are considerably influenced by availability of freshwater in the Mvuha, Ruvu and Mgeta rivers. In almost all villages, reliable freshwater for domestic uses are obtained from the Mvuha, Ruvu and Mgeta rivers. Irrigation, crop farming, livestock keeping, and fishing all depend on the Mvuha and Ruvu rivers. In other words, any destruction and/or degradation of the Mvuha and Ruvu rivers (including their catchments) have direct negative impacts on livelihoods of the majority in the project villages. The destruction of the Mvuha, Ruvu and Mgeta rivers to the large extent will also slow down all efforts to promote economic growth, fight poverty, eradicate hunger, and sustain the resource bases required by the majority of the rural poor for their resilience.

Today, rural-rural migration is high in Morogoro Region and its districts, including the Morogoro District. Riverine landscapes are target destinations by groups of agro-pastoralists and pastoralists migrating to Morogoro Region from drought-devastated regions such as Manyara, Arusha, Simiyu, Shinyanga and Mwanza. On arrival, immigrants need land, farm plots and grazing lands. Availability of water and pasture is a major factor pulling immigrants to settle along the Mvuha, Ruvu and lower parts of the Mgeta River. If not controlled, unsustainable livestock keeping have negative impacts on water resources, among other resource bases.

Along the river banks, some PAPs are forced to cut large trees adjacent to their farm plots, mostly along the Mvuha and Ruvu rivers, to keep the vervet monkeys away. People also remove riverine vegetation in some parts of the river banks to destroy potential habitats for crocodiles and hippopotamus that regularly attack people in some villages, especially Magogoni village. Riverine vegetation is also removed along the river banks to allow irrigation for different horticultural produce, especially during dry seasons. Clearing of riverine vegetation, much it deters vervet monkeys and crocodiles, it has some short-term and long-term ecological and social consequences (exposing farm plots and settlements to flooding, and thus loss of lives and properties).

To secure and sustain the Mvuha, Ruvu and Mgeta rivers, therefore, concerted efforts are required to demarcate and protect the rivers from on-going unsustainable land use practices on the river banks. Already, there are people along the Mvuha, Ruvu and Mgeta rivers who are concern about the unsustainable land use practices along the river banks. Some have already lost farm plots due to erosion that has removed large parts of the

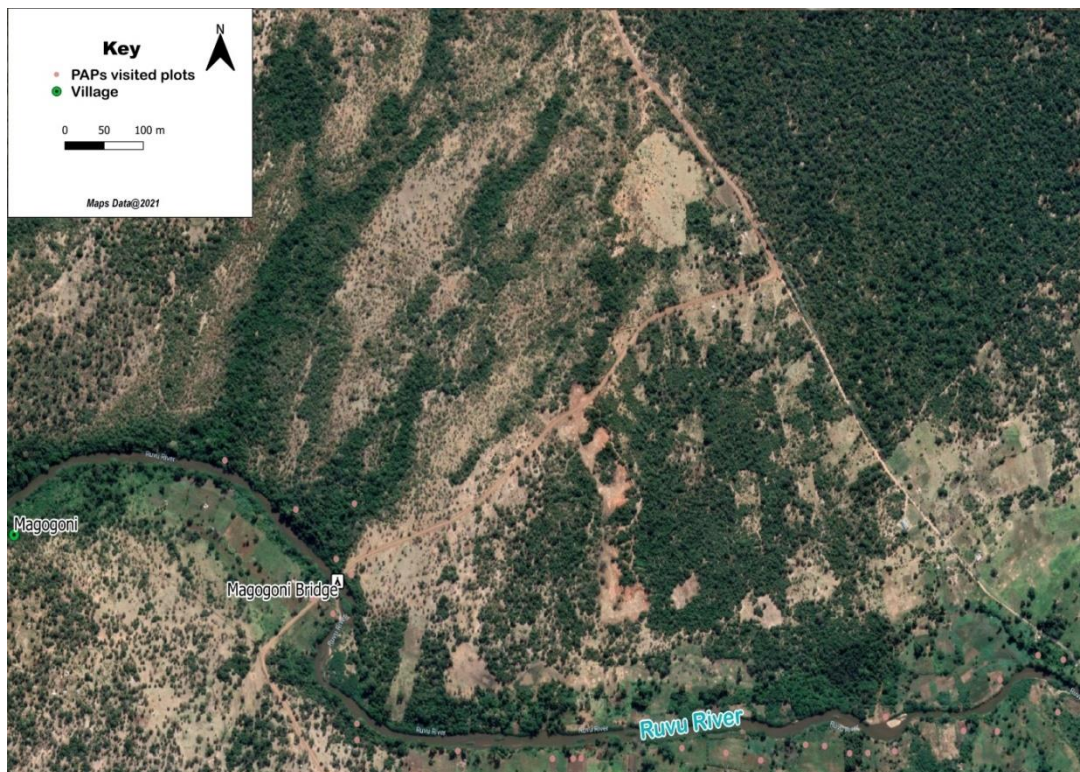


river banks (e.g. Dala, Magogoni, Kiganila, and Bwila juu village). Graveyards have been washed by the changing river channel in some villages (e.g. Kisanga stand and Tununguo village). The PAPs, together with several state and non-state stakeholders, have proposed a number of measures that should be implemented to secure and sustain the Mvuha, Ruvu and Mgeta rivers as well as enhance their livelihoods. Once the Mvuha, Ruvu and Mgeta rivers are secure, several ecosystem services required by the rural poor in Morogoro and Mvomero districts for their livelihood and survival will also be secure.

## 11.2 Recommendations

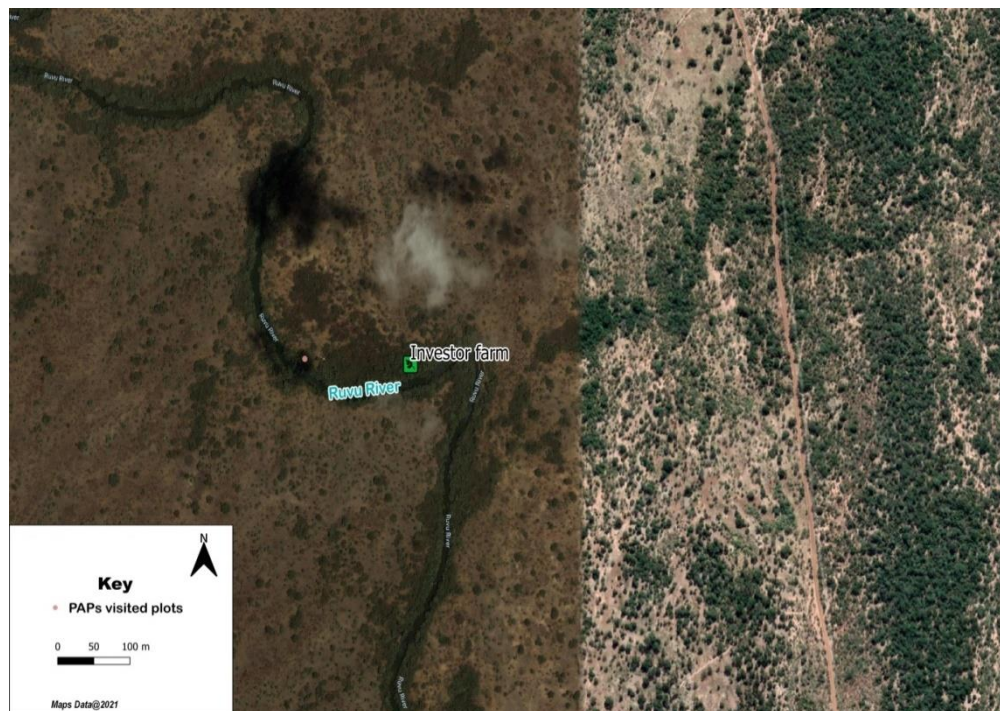
### ***10.2.2 Demarcate the river banks from other land uses to secure livelihood and the Mvuha and Ruvu rivers from unsustainable land use practices***

Lack of physically demarcated buffer zones between the river banks and other land uses largely contribute to on-going destruction of riverine systems (e.g. removal of riverine vegetation). Some parts of the river banks are still intact, forested and away from village centers (**Plate 47**). As aforementioned, rural-rural migration in Morogoro District is high. The PAPs are also worried about sustainability of riverine systems if at all the river banks are not secured and protected.



**Plate 47:** A map showing location of the remote parts of the Ruvu River in relation to other parts of the village lands at Magogoni village (left side of the Ruvu River) and Kiganila village (right side of the Ruvu River)

Apart from forested remote areas, priority to install concrete beacons should also be given to village lands owned by large-scale investors (**Plate 48**). Investors are aware about the restrictions to conduct some land uses along the river banks. Agro-pastoralist and pastoralists migrating from other regions to Morogoro Region are mostly not informed about such restrictions. Concrete beacons along the river banks, together with sign posts, will help immigrants to understand why concrete beacons are installed and why investors are restricted to access river banks and conduct various land uses.



**Plate 48:** A map showing an investor farm plot in remote parts of the Ruvu River at Kiganila village.

The Ruvu River, different from Mvuha and Mgeta rivers, crosses through forested landscape (not under use) partly due to rocky and hilly nature of the terrain and remoteness from village centers (**Plate 49**). The forested landscape is evident from the Kibangile village, Ngong'oro villages, all the way to Kisanga Stand, Tununguo and Magogoni/Kiganila villages (**Plate 50, 51**). Forested landscapes should also be given priority during installation of concrete beacons. Compared to other areas, the forested areas have no any Private Owned Farm plot that can be affected by the restrictions that will be imposed in some zones after installation of concrete beacons.





**Plate 49:** Mr. Athumani O. Zingizi (left)– Village Chairperson- and Mr. Salum Katita- Chairperson- village land committee during participatory site visit to show some the project tea some of the communally owned land in Magogoni village.



**Plate 50:** A map showing remote parts of the Ruvu River in relation to Tununguo village centre



**Plate 51:** A map showing large remote parts of the Ruvu River between Ngong'oro and Kisanga stand villages

***10.2.3 Promote agroforestry and perennial crops in developed farm plots along the Mvuha and Ruvu rivers***

***10.2.4 Support efforts to clear wetlands vegetation at Lukulunge villages to allow the dams accessible by people to fetch water (reduce pressure on Mhuva River -Plate 52)***



**Plate 52:** A map showing three dams proposed to develop aquaculture at Lukulunge village, along the Mvuha River



### Key

- Village name
- Reserved land
- PAPs visited plots

0 100 200 300 400 m



