

# GEF-8 PROJECT IDENTIFICATION FORM (PIF)

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## General Project Information

### Project Title

Strengthening integrated transboundary source-to-sea management of the Ruvuma River Basin and its coastal zones to ensure ecosystem health and livelihood security

Region	GEF Project ID
Regional	11410
Country(ies)	Type of Project
Regional	FSP
Malawi	
Mozambique	
Tanzania	
GEF Agency(ies):	GEF Agency ID
IUCN	
Executing Partner	Executing Partner Type
Global Water Partnership-Southern Africa(GWPSA) on behalf of SADC (anticipated Executing Entity)	Others
co-execution by national entities Ruvuma Basin Committee (RBC) Administracao Regional de Aguas do Norte (ARA Norte-Mozambique) Malawi Department of Water) and the Ruvuma Basin and Coast Office in Tanzania as responsible parties through grant agreements	Government
GEF Focal Area (s)	Submission Date
International Waters	10/18/2023
Project Sector (CCM Only)	

### Taxonomy

Focal Areas, International Waters, Influencing models, Convene multi-stakeholder alliances, Demonstrate innovative approach, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Deploy innovative financial instruments, Stakeholders, Beneficiaries, Private Sector, Civil Society, Local Communities, Gender Equality, Gender Mainstreaming, Capacity, Knowledge and Research, Knowledge Exchange, Enabling Activities, Capacity Development, Learning

Type of Trust Fund	Project Duration (Months)
GET	60
GEF Project Grant: (a)	GEF Project Non-Grant: (b)
7,122,018.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
640,982.00	0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing

7,763,000.00	48,365,000.00
PPG Amount: (e)	PPG Agency Fee(s): (f)
200,000.00	18,000.00
PPG total amount: (e+f)	Total GEF Resources: (a+b+c+d+e+f)
218,000.00	7,981,000.00
Project Tags	
CBIT: No NGI: No SGP: No Innovation: No	

### Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B “project description”. (max. 250 words, approximately 1/2 page)

The proposed project is in the Ruvuma River Basin aims to address the lack of cross-sectoral multi-state cooperation in transboundary water resource management which is critical in sustaining critical terrestrial, coastal and marine ecosystems and ensuring inclusive sustainable development.

The Ruvuma River Basin is shared by Malawi, Tanzania and Mozambique and has rich terrestrial and aquatic biodiversity of global significance. The basin remains one of the pristine areas in Africa as it covers the Niassa-Selous Transfrontier Conservation Area (TFCA) and the Mnazi Bay-Quirimbas Transfrontier Marine Area (TMCA). The Selous-Niassa Wildlife Corridor which extends 160-180km following the Ruvuma River is critical for connectivity in the basin.<sup>[1]</sup> The protected areas are also under severe threats from poaching, artisanal mining, and illegal logging due limited historical governmental oversight<sup>[2]</sup>. The basin has a substantial amount of biomass and carbon stock (terrestrial carbon stocks) due to its rich woodlands. However, studies show that there is a local and global annual of ecosystem functions mostly from closed woodlands, open woodlands, grassland, and water<sup>[3]</sup>.

The Ruvuma Estuary and Mnazi Bay are part of the large Coastal East Africa eco-region. The Ruvuma Estuary, a significant mangrove area, supports diverse marine life and serves as a vital habitat for fish, prawns, migratory birds, marine turtles, dugongs, and porpoises. Around 30% of the basin's nearly 100 fish species are regionally endemic. Mnazi Bay was identified as a priority area for the conservation of global marine biodiversity<sup>[4]</sup>. Due to a large number of important ecosystems the non-consumptive environmental demand of water resources is significant in the Ruvuma River Basin. To ensure sustainable transboundary water management taking into consideration the threats and impacts to a source to sea approach will be crucial in conserving the biodiversity and ecosystems. There is an

increased national and international understanding of the unique biodiversity and importance of environmental conservation of the Ruvuma Landscape assets. Despite its almost pristine condition, the basin is now experiencing growing pressure on the natural resource base in the short to medium term future given substantial planned industrial and agricultural development. Uncoordinated planning, development, and management due to weak institutions at national and transboundary level, a lack of integration between natural resource management bodies (transboundary water, TFCAs and coastal) and approaches, and lack of alternative income options for the basin population are some of the key challenges to transboundary water this projects aims to address.

The key interventions to address the problems identified will focus on strengthening institutional frameworks for transboundary basin and coastal zone management, facilitating integrated basin and coastal zone management through science-based decision making, strategic investment planning and resource mobilization for integrated basin and coastal zone management, ensuring sustainable land and water management through effective stakeholder engagement, building capacity to enforce national laws and legislations and establishing effective knowledge management. Through interlinking governance structures for land, freshwater with coastal and marine management, the project aims to establish the region's first integrated natural resources governance framework, including, practical application of the source-to-sea management approach. Supporting the strengthening of transboundary cooperation will go a long way in ensuring frameworks and tools and capacity in all three countries are put in place to co-manage the shared water resources. These tools will contribute to sustaining freshwater, coastal, and marine ecosystems goods and services in the source-to-sea system.

The project will engage stakeholders across governance levels, ranging from the transboundary Joint Water Commission (JWC), TFCAs stakeholders, coastal management institutions, government, and non-government stakeholders, to community level stakeholders (including women and youth) that directly benefit. It scales up community engagement for basin resource protection, engages the private sector in the development of sustainable financing models, and aims to pilot a replicable approach, easing resource pressure while promoting sustainable livelihoods and environmental protection. These interventions will contribute to the overall GEF global targets to improve cooperative management of shared water ecosystems, conserve biodiversity, restore degraded lands, manage coastal and marine ecosystems, enhance inclusivity, and build resilience of communities.

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[1] SADC Brochure on Transfrontier Conservation Areas in the SADC region

[2] The Lugenda Wildlife Reserve (2021)

<https://luwire.org/adventures/#:~:text=The%20Lugenda%20River%20remains%20one,heart%20of%20the%20Niassa%20Reserve.>

[3] Zella.A.Y. Economic valuation of ecosystem services of Eastern Corridor of Selous-Niassa ecosystem, Tanzania, and Mozambique

[4] Kelleher, Graeme, ed. ; Bleakley, Chris, ed. ; Wells, Susan M., ed. IUCN ; Great Barrier Reef Marine Park Authority ; World Bank (2005) [A global representative system of marine protected areas. Vol.3: | IUCN](#)

## Indicative Project Overview

### Project Objective

Project Objective: to promote multi-sector transboundary cooperation through a source-to-sea management approach aimed at ensuring that ecosystem health and social inclusion are integrated into planning, development, and management, of the Ruvuma River Basin

### Project Components

#### Component 1: Strengthening institutional frameworks for transboundary basin and coastal zone management

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
2,130,000.00	8,000,000.00

Outcome:

#### Outcome 1.1:

Institutional capacity to drive transboundary cooperation enhanced.

Outcome 1.2: Efficient intersectoral basin, protected areas, and coastal zone management coordination structures operational

Outcome 1.3: Basin-wide basin management/ transboundary agreement developed by Member States

Outcome 1.4: Effective mechanisms for transboundary data and information exchange in place

Output:

Output 1.1.1: Technical Committee taking into consideration gender to oversee transboundary cooperation strengthened

Output 1.1.2: Joint Water Commission (JWC) Secretariat established and a financial sustainability plan looking into funding models developed and adopted.

Output 1.1.3: Comprehensive gender sensitive organizational procedures for JWC Secretariat developed

Output 1.1.4: Priority JWC Task Teams taking gender issues into account (e.g., Flood & Drought, Water Quality & Environment, & economic and social development promoting a source to sea approach) operationalized

**Output 1.1.5:** Capacity building plan for JWC and relevant national counterpart institutions taking into consideration gender issues developed, and priority actions implemented promoting source to sea approaches

**Output 1.2.1:** Effective working arrangements (e.g., MoUs) with Protected Areas and relevant coastal management institutions at national and regional level e.g., the TFCAs (managed by the regional administrations) Nairobi Convention, established

**Output 1.2.2:** National Intersectoral Committees for transboundary source-to-sea and coastal zone management established (TFCAs, PAs and coastal management institutions)

**Output 1.2.3:** National level basin stakeholder forums strengthened, and basin-wide stakeholder forums based on a Stakeholder Strategy that ensures inclusion of women and youth established, including coastal zone management stakeholders

**Output 1.2.4:** Engagement with SADC Secretariat to strengthen the efforts aimed at supporting cooperation between shared water course institutions and protected areas

**Output 1.2.5:** Ruvuma River Basin and Coastal Zone Awareness Kit (highlighting the key source-to-sea threats) developed and widely disseminated

**Output 1.3.1:** International water law principles adopted as the basis of a transboundary water Agreement guided by SADC Protocol on Shared Watercourses

**Output 1.3.2:** JWC supported by SADC facilitate negotiation to establish a transboundary water Agreement

**Output 1.4.1:** Basin-wide water/environmental monitoring system established building on existing system and using remote sensing techniques (including refurbishment/ modernization of existing stations)

**Output 1.4.2:** Existing systems upscaled and full Water Information System (WIS) operational

**Output 1.4.3:** Environment monitoring framework and the Procedures for data and information exchange between JWC Member States developed

## Component 2: Facilitating integrated basin and coastal zone management through science-based decision making

Component Type

Trust Fund

Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
1,100,000.00	6,000,000.00

Outcome:

**Outcome 2.1:** Scientific baseline for source-to-sea based management of the basin and coastal zones established and transboundary management instruments adopted

Output:

**Output 2.1.1:** Transboundary Diagnostic Analysis carried out, including application of the source-to-sea concept for integrated basin and coastal zone management

**Output 2.1.2.:** Environmental & social vulnerability mapping for the basin and coastal zone carried out, and community resilience ensuring gender equality and social inclusion strategies developed (for inclusion into the TDA/SAP)

**Output 2.1.3:** Identification of groundwater hotspots (areas of high contamination) and development of a transboundary groundwater management strategy focusing on areas with high likelihood of contamination

**Output 2.1.4:** Joint Basin Survey conducted to increase understanding of the basin (using eDNA techniques) and assess the ecological status of the river and estuary

**Output 2.1.5:** Assess regulations and enforcement in the different parts of the basin and develop a capacity building plan to respond

**Output 2.1.6** As part of preparing the TDA develop a framework to guide the thinking on a sustainable development space (learning from Cubango Okavango River Basin)

#### Component 4: Promoting sustainable land and water management through effective stakeholder engagement

Component Type	Trust Fund
Investment	GET
GEF Project Financing (\$)	Co-financing (\$)
2,800,000.00	29,000,000.00

Outcome:

**Outcome 4.1:** Protection of ecosystem services and rehabilitation of degraded areas

**Outcome 4.2<sup>[15]</sup>:**



Upstream-downstream linkages with Mnazi Bay TFCA strengthened to ensure upscaling of estuary protection initiatives

[1] Component 4 requires additional elaboration during the PPG phase, in which site-specific information will be collected to ensure the selected investments are optimally selected and designed with respect to local social, environmental, and economic circumstances.

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Output:

**Output 4.1.1:** Key transboundary water source protection areas identified for sustainable management and protection (through partnerships with communities)

**Output 4.1.2:** Promoting private sector engagement in developing sustainable financing models for protection of catchments and groundwater recharge zones (e.g., through expanding water stewardship initiatives and engaging through their value chains)

**Output 4.1.3:** Promoting community involvement across the river basin, including women and youth, in implementation of sustainable land and water practices (e.g., community-based projects promoting enhancing of capacities to enforce regulations; water, food, energy and environmental security; monitoring through citizen science working with the private sector, TFCAs, coastal and fisheries institutions;)

**Output 4.1.4:** Strengthening cooperation with protected areas and forest reserves to reduce deforestation through upscaling sustainable inclusive community initiatives (e.g., indigenous tree nurseries)

**Output 4.2.1:** Promote engagement with private sector and communities, including women and youth, through upscaling ongoing activities on estuary management

**Output 4.2.2:** Development of a compendium of practices on addressing land-based activities that impact estuaries and address the identified threats to the source to sea management approach including those that specifically integrate gender and social inclusion, addressing

Component 3: Supporting strategic investment planning and resource mobilization for integrated basin and coastal zone management

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
400,000.00	2,000,000.00

Outcome:

**Outcome 3.1:** National and transboundary priorities integrated into Strategic Action Programme (SAP) and National Action Plans endorsed by Member States

Output:

**Output 3.1.1:** SAP for the transboundary basin and coastal zones developed (taking into consideration community resilience through ensuring water, energy, food, and ecosystem security) through an inclusive participatory approach and endorsed by the three governments

**Output 3.1.2:** National Action Plans (NAPs) linking country priorities to regional priorities developed through an inclusive participatory approach and taking into consideration enhancing regulation and enforcement that support transboundary governance developed and approved at national level.

**Output 3.1.3:** Investment Plan for implementing the SAP and the NAPs developed and adopted by the three governments

## Component 5: Knowledge management

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
200,000.00	1,000,000.00

Outcome:

**Outcome 5.1:** Effective knowledge generation and sharing mechanism established and actively used

Output:

**Output 5.1.1:** JWC actively participated in knowledge/experience sharing at regional SADC (e.g., biennial SADC RBO workshop) and international level, including on the IW Learn platform and through participation in the GEF IW-LEARN conferences taking into consideration strengthening the role of women in water diplomacy

**Output 5.1.2:** At least 1 exchange visit with other RBOs and/or relevant regional institutions ensuring participation of women and youth carried out to share source-to-sea management experiences

**Output 5.1.3:** Regular peer-to-peer learning and experience exchanges between local stakeholder communities (especially those involved in demonstration projects) facilitated

**Output 5.1.4:** Gender-sensitive Communication strategy and plan developed and implemented and implementation of the Knowledge and Learning Strategy and Plan.

## M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
157,018.00	

Outcome:

Effective programme and project monitoring and evaluation ensured

Output:

1. Gender-responsive programme monitoring and evaluation (M&E) system established within JWC
2. : Project M&E system set-up and quarterly results reporting ongoing
3. : Mid-term and terminal evaluation of the project carried out

## Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
Component 1: Strengthening institutional frameworks for transboundary basin and coastal zone management	2,130,000.00	8,000,000.00
Component 2: Facilitating integrated basin and coastal zone management through science-based decision making	1,100,000.00	6,000,000.00
Component 4: Promoting sustainable land and water management through effective stakeholder engagement	2,800,000.00	29,000,000.00
Component 3: Supporting strategic investment planning and resource mobilization for integrated basin and coastal zone management	400,000.00	2,000,000.00
Component 5: Knowledge management	200,000.00	1,000,000.00
M&E	157,018.00	
<b>Subtotal</b>	<b>6,787,018.00</b>	<b>46,000,000.00</b>
Project Management Cost	335,000.00	2,365,000.00
<b>Total Project Cost (\$)</b>	<b>7,122,018.00</b>	<b>48,365,000.00</b>

Please provide justification



## PROJECT OUTLINE

### A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

#### Situation analysis

1. The project area is the Ruvuma<sup>[16]</sup> River Basin shared between Mozambique, Tanzania, and Malawi. The main Ruvuma River flows along the border between Mozambique and Tanzania. The total catchment area is approximately 155,000 km<sup>2</sup>, of which 100,000 km<sup>2</sup> (~65%) are in Mozambique, while Tanzania covers 52,000 km<sup>2</sup> (~34%) and the remaining part in Malawi covers 2,500 km<sup>2</sup> (<2%) [1][2]<sup>7</sup>. In Tanzania, the basin covers three regions, namely Ruvuma, Mtwara and Lindi. In Mozambique, it covers the Niassa and Cabo Delgado Province. In Malawi, the basin covers a small portion of the Machinga and Mangochi districts [1].
2. The western part of the basin is the only area with mountains and high altitude. Further east, towards the Indian Ocean, the basin is characterised by a plain topography, albeit without widespread floodplains. Two general climatic zones can be distinguished in the basin, the coastal belt where tropical conditions characterised by high temperatures and high humidity prevail, and the upstream semi-temperate highlands characterised by wetter conditions. The annual average temperature in the basin is fairly stable but there is a direct correlation between altitude and lower temperature. The annual average temperature in the Ruvuma River Basin ranges from 15°C to 26.6°C. In general, rainfall does not vary much across the basin. Some peaks at the catchment divide have values up to 1,700 mm/year but otherwise rainfall is between 850-1,250 mm/year. Rainfall generally decreases from the mountainous areas in the west towards the central parts of the basin, before increasing slightly again in the coastal area.
3. The Lake Chiuta in Malawi has an outflow to the Lake Amaramba where the river Lugenda is issued from. Lake Chiuta is an important ecosystem for both Malawi and Mozambique, providing a variety of benefits to the people and wildlife of the two countries<sup>[3]</sup><sup>8</sup>. The lake acts as a natural filter, removing pollutants and sediments, it also absorbs floodwaters during the rainy season, reducing the risk of flooding in downstream communities<sup>[4]</sup><sup>9</sup>. The Lake Chiuta helps to recharge groundwater aquifers, which are important sources of drinking water for communities living in the surrounding area. The lake is a valuable wetland ecosystem that supports a variety of plants and animals, including birds, fish, reptiles, and amphibians. The lake is also home to a number of endangered species, such as the wattled crane and the African fish eagle<sup>[5]</sup><sup>10</sup>. Lake Chiuta is a source of drinking water and food for over surrounding communities Malawi and Mozambique. It is also used for irrigation and livestock watering. Lake Chiuta is a major fishing ground, supporting the livelihoods of

over 10,000 fishers and their families<sup>[6]</sup><sup>11</sup>. The major species within the lake include *Oreochromis shiranus* (*makumba*), *Barbus paludinosus* & *Alestes imberi* (*dondolo*), *Clarias gariepinus* & *Clarias theodore* (*mlamba*), *Synodontis* spp., *Astatotilapia* spp., *Tilapia rendalirendali*, and *Marcasenius macrolepidotus*) some of which are endemic to the region<sup>[7]</sup><sup>12</sup>. The lake is home to a number of cultural sites, including traditional fishing villages and sacred groves.

4. The Lake Amaramba is a seasonal lake in Mozambique that plays a vital role in the region's ecosystem. Its environmental importance stems from its unique hydrological characteristics, biodiversity, and support for local livelihoods. The open water area accounts for 4,350 hectares and swamp or marshy land accounts for 4,000 hectares. Lake Amaramba is a haven for a diverse array of aquatic and terrestrial species. Its seasonally flooded grasslands and wetlands support a rich assemblage of birds, including migratory species that depend on the lake for breeding and feeding<sup>[8]</sup><sup>13</sup>.
5. The two lakes face some environmental challenges that will impact the source-to-sea system. Some of the key drivers impacting these source areas are in the northeastern shores of Lake Chiuta significant habitat loss is being experienced due to the expansion of agriculture and human settlements. This loss of wetlands and natural vegetation has reduced spawning and nursery grounds for fish and other aquatic species and can be attributed to environmental degradation and climatic extremes<sup>[9]</sup><sup>14</sup>.

The upper part of the river basin, the Upper Ruvuma sub-catchment, is dominated by dense forests and woodlands with some patches of cultivation evident in the northern sections. As one moves in a south-easterly direction, the land-cover transitions into a mosaic of shrubland and woodlands. Most of the cultivation in this catchment occurs in the Tanzania portion of the river basin. The main Ruvuma River rises within Tanzania in the Songea region, in the Upper Ruvuma sub-basin, and drains into the Indian Ocean at Mnazi Bay, south of Mtwara, after flowing for 650 km. The Upper Ruvuma Sub-Basin IWRM & Development Plan which was prepared by the Ruvuma and Southern Coast Basin Offices notes some environmental issues in sub-basin which is the source of the river. The issues identified are poor land use practices and pollution due to cultivation along riverbanks sub-basin slopes, deforestation, overgrazing, poor agricultural practices, and unregulated artisanal mining<sup>[10]</sup><sup>15</sup>. Upcoming challenge identified by the plan for the Upper Ruvuma are the proposed industries including mining, intensification of commercial agriculture and the Mtwara Development Corridor projects which will see improvements in roads, railways, and industries. The Ruvuma River Basin boasts a number of unique assets of local and global importance.

6. The Ruvuma landscape is considered one of last great wilderness areas of Africa, hosting two major reserves (Selous Game Reserve and Niassa Reserve). The Niassa-Selous Trans-Frontier Conservation Area (TFCA) is shared between Mozambique and Tanzania. The TFCA is one of the largest TFCA's in Africa covering a total area of approximately 154,000 km<sup>2</sup>. Estimated average amounts of the biomass and carbon stock (terrestrial carbon stocks) on the eastern corridor of the Selous-Niassa TFCA, calculated using spatial and temporal land use cover data from 2016, revealed over 52 million tons and 13 million tons of biomass and carbon stocks. The amount of conservation profit of the area for the year 2016 was approximated at over USD 50 million.
7. An MOU on cross-border cooperation was signed between the Governments of Tanzania and Mozambique on 29 March 2007 to facilitate the establishment of Niassa-Selous TFCA. One third of the area is protected

by the Niassa National Reserve, which is Mozambique's largest conservation area and covers a total area of 42,000 km<sup>2</sup><sup>[11]</sup><sup>16</sup>. It is connected to the Selous Game Reserve (SGR, 55,000 km<sup>2</sup>) in southern Tanzania by the Selous-Niassa Wildlife Corridor, which extends for a total length of approximately 160 to 180km following the Ruvuma River<sup>[12]</sup><sup>17</sup>. The Selous–Niassa Wildlife Corridor provides an important biological link between these two reserves, supporting the conservation of one of the largest elephant ranges globally. Poaching of these iconic species to feed the ivory trade remains however one of the greatest challenges for the TFCA. In 2014, UNESCO placed Selous on its List of World Heritage in Danger due to the severity of elephant and rhino poaching.

8.

The Mnazi Bay and Ruvuma Estuary Marine Park (MBREMP) on the Tanzanian side and the Quirimbas National Park on the Mozambican side are important nursery grounds for fish and shrimp. Generally, the coastline is made up of a stable substrate with deep sheltered bays that have fishing and recreational potential. Mnazi Bay is a multi-purpose marine protected area with globally significant marine biodiversity values. Covered with mangroves, coral reefs and grass beds, the area is renowned as being internationally important for its biodiversity. The Ruvuma estuary is famous for its beaches, mangroves, and other tropical coastal marine resources. It is home to nesting grounds for Green and Hawksbill turtles, and a number of marine mammals have been seen in the area including migrating Humpback whales and the Indo-Pacific Humpback dolphin<sup>[13]</sup><sup>18</sup>. About 30% of the nearly 100 fish species hosted in the Ruvuma River Basin are endemic to the region. Mnazi Bay, in Mtwara District, southern Tanzania, was identified as a priority area for the conservation of global marine biodiversity in the Global Representative System of Marine Protected Areas Vol 3 Assessment Report<sup>[14]</sup><sup>19</sup>. In terms of some economic indicators – welfare contribution of the yearly flux of coastal recreation benefits in the Mtwara and Quirimbas coastal areas is USD 7million/year, PPP (purchasing power parity) and USD 27.9 million/year, PPP respectively in 2011. The economic significance of coastal carbon sequestration in Mtwara and Quirimbas looking at the "blue carbon" storage was approximated in 2015 at USD 24.4 million/year and US\$118.8 million /year respectively<sup>[15]</sup><sup>20</sup>.

9.

The forest reserves and game reserves in Ruvuma Landscape are some of the areas where Mozambique and Tanzania are set to receive a significant boost in the voluntary carbon market. Carbon storage in ecosystems is a key environmental policy issue because of possible mitigating effects on climate change. It was reported in July 2023 that Tanzania is set to attract about USD 20 billion investment in carbon offset credits after the adoption of legislation on carbon trading in 2022. This shows the importance of these protected areas as global assets in reducing greenhouse gas emissions. This will also ensure that Tanzania meets its National Determined Contributions (NDCs) target of 30-35% emission reduction by 2030<sup>[16]</sup><sup>21</sup>. Similarly, efforts are also underway to implement REDD+ initiatives in the Niassa Special Reserve in Mozambique. Ensuring continued water resources to sustain these important biodiversity and ecosystems will be crucial – and this will be done by ensuring a source to sea continuum. The river basin also has wetlands and swamps that line the lower reaches, and these are important as wetlands have the highest carbon stocks of all terrestrial ecosystems. These swamps include Nhica (75km<sup>2</sup>), the Quitemab (25km<sup>2</sup>) and the Miula (70km<sup>2</sup>) – Lake

Nangade (in Mozambique) and several oxbow lakes also occur in the river's floodplain. There are also swamps around the Lake Chiuta and Lake Amaramba in the headwaters of Lugenda River<sup>[17]<sup>22</sup></sup>.

10. Population density in the basin is currently low but annual population growth is estimated to increase substantially. In general, settlements of the Ruvuma Basin consist of scattered rural village communities, a few small towns, market centres, commercial farms, and estates. The estimated basin population for 2010 was approximately 2.4 million with 1.5 million in Tanzania and 0.9 million in Mozambique. While more recent population data does not seem to exist, the population projection expects that by 2030, the Ruvuma Basin could have in the order of 4.5 million inhabitants, of which 2.4 million in Tanzania and 2.1 million in Mozambique. This is likely to be further exacerbated, especially on the Mozambican side where an influx of people is expected, attracted by the substantial industrial developments related to natural gas extraction and liquefaction<sup>[18]<sup>23</sup></sup>.
11. For the Machinga and Mangochi districts of Malawi, the 2023 population is projected to be 0.87 million and 1.34 million respectively with 35% of both districts estimated to fall within the Basin<sup>[19]<sup>24</sup></sup>. Within the basin in Tanzania, 90% of the population live in rural areas and 10% in urban areas. Similarly, in Mozambique, 67% live in rural areas and 33% in urban areas. Within the basin in Malawi, despite having a higher population density, it is estimated that only 6.1% of the population live in urban areas. Even in urban areas, the population has access only to basic or even poor-quality services and facilities. For example, the 2015 Ruvuma Integrated Water Resources Management Development Plan stated that that only 41%, 49% and 60% of the population for Lindi, Mtwara and Ruvuma regions in Tanzania respectively, had access to basic water supply<sup>[20]<sup>25</sup></sup>.

The population is made up mostly of subsistence farmers and fishermen, dependent on the rivers and their effluents for their livelihoods. The 2013 Joint IWRM Strategy for Ruvuma Basin reported that up to 90% of Mozambique's Niassa and Cabo Delgado provinces rely on agriculture as their main source of livelihood and 87% of the population in Tanzania's Mtwara and Ruvuma region. While current water use for irrigation is very limited there remains considerable potential for increasing the area under irrigation, with commensurate effect on water demand.

Like the entire southern African region, the basin faces an increased risk from adverse climate change impacts, especially climatic extreme events. The IPCC Sixth Assessment Report (AR6) observes increased aridity, agricultural and ecological droughts. There is also an observed increase in meteorological drought and a projected increase from 1.5°C. Currently, there is an observed decrease in mean precipitation in the basin area. With regards to floods there is an observed and projected increase in heavy precipitation and pluvial flooding. The basin has been experiencing tropical cyclone over the past 5 years – with Cyclone Idai, Cyclone Freddy, Cyclone Kenneth having huge impacts in Mozambique and Malawi. The IPCC AR6 projects an increase in average wind speeds of the cyclones and associated heavy rains – Category 4-5 tropical cyclones. Niassa is among the most irregular rainfall regimes in the northern region of the country. The 2009 INGC Climate Change Risk Report for Mozambique notes that for areas in Niassa (in the Ruvuma River Basin) increased temperatures due to climate change may result in a decrease soil moisture, which in turn promotes increased evapotranspiration loss from open water bodies, soils, and vegetation. The report further notes that



with these projected temperature increases, particularly the hotspots, it is likely that areas, particularly in the north where the Ruvuma River Basin is located, will experience normal to extreme floods more frequently.

## Justification

12. Poverty levels are high in the basin – as the basin is in some of the most remote parts of the three countries away from the big centres. The Global DataLab website 2015 data shows that more 80% of people under the age of 50 live in poor households in the Ruvuma region of Tanzania, in the Niassa Province in Mozambique and Machinga in Malawi it is a staggering 96%. The greater part of the population as per the 2020 data are women – 56.2% in Machinga: 52% in Niassa and 62.3% in Ruvuma for females over the age of 50. With regards to life expectancy, it is higher for women in all 3 countries in the basin. However, the GNI per capita is lower for women in all the countries and furthermore the expected years for schooling of girls is 7,3 compared to boys 7,7 as an average of the 3 countries. Women and youth are vulnerable depending highly on natural resources in the basin. There is therefore, a need to ensure gender equality and social inclusion is an integral part in any response in the basin.
13. Development levels in the basin were low as per the Monograph Study in 2011, and accordingly water demand was less than 1% of available water resources. This is increasing and will be the core of work currently (in 2023) being supported by GIZ to update the water demand in the basin. However, it should be noted that the environment is the largest water user in Ruvuma. More than 32% of the renewable water resources in the basin is required for replenishment of environmental demands. Non-consumptive water uses are mainly environmental flows that account for 41% of surface waters in the basin<sup>[21]<sup>26</sup></sup>. It is therefore critical to ensure that water resources are managed well to avert the threats to biodiversity and ecosystem services which rely on it for their functioning.
14. Environmental threats in the basin have mainly been felt within a local context when the Monograph was developed in 2011, however, recent studies show that there are signs of an exponential increase in land degradation. WWF notes that the eastern miombo woodlands is one of the most biodiverse forests on earth and intact systems – and losing species in these areas is incalculable<sup>[22]<sup>27</sup></sup>. A report by FAO shows that uncontrolled and unsustainable natural resource use – due to commercial logging, unplanned and unregulated conversion of agricultural land is leading to loss of natural forest systems which are critical for the water balance and prevention of flash floods and soil erosion<sup>[23]<sup>28</sup></sup>. The natural forest system on a global level has the potential of carbon dioxide sequestration impacting on climate change. The report also notes farming of rice paddies on the wetlands which are critical for the estuary functioning. During the development of the Ruvuma Basin IWRM & D Plan pollution of water resources, both surface and groundwater, from domestic wastes, artisanal mining, erosion, deforested sub-basins and industrial discharge was noted to be impacting the water resources. The river health assessment carried out mixed results. River health was very poor in Luneyere for example due to artisanal mining. The main impacts of this pollution are on the biodiversity of the aquatic habitats of the stream and the terrestrial habitats and preventative action is required.<sup>[24]<sup>29</sup></sup> Governance and enforcement capacity at the national level remains an issue – as evidenced by the reports on illegal mining and logging activities taking place in the basin. Transboundary governance builds on functioning national frameworks – and therefore there is need to investment in enhancing capacity for enforcement.

15. A further threat to the natural forest system which is critical for water resources management is uncontrolled wildfires caused by clearing of land with a growing population and expansion of agriculture activities and commercial logging. The eastern miombo forests are a dominant land cover in the basin and provide as an energy source for rural livelihoods. A FAO study notes that losing the land cover will lead to siltation and a reduction in the required environmental flows to sustain biodiversity and ecosystems; this impacts critical transboundary wildlife corridors like the Selous-Niassa Wildlife Corridor<sup>[25]<sup>30</sup></sup>. For example, the Forest Risk Commodities Dashboard (2022) notes that cashew production in the Ruvuma region in Tanzania was responsible for deforestation of 72,000ha between 2005 and 2018 – other crops that have seen an increase in production in the river basin are coffee, sesame, and cotton. These, agriculture, industrial and other economic developments need to be carefully planned and managed. In essence, the basin is now at a crossroads where effective collaborative management of its resources can ensure that economic development is managed sustainably and much of the basin's relative pristineness is preserved. Alternatively, uncoordinated industrial, mining, and agricultural development will likely result in considerable degradation of the basin's ecosystems and the services they provide. The lowland regions of coastal eastern Africa were once covered by a forest mosaic extending from southern Mozambique to Kenya's border with Somalia – a mere 10% of the original coastal forest habitat remains as smaller fragments. Most of the coastal forests have been cleared over the years. The remnants of these fragile ecosystems are a treasure trove and are centres of species endemism<sup>[26]<sup>31</sup></sup>.
16. Another driver threatening the water source areas, in Mozambique is commercial afforestation through development of exotic forests (licences for eucalyptus and pine trees). Private forest plantation investments have multiplied in the last ten years in Niassa, Mozambique and are expected to grow with increased access into the region. Currently, there are two operational companies in the Ruvuma basin in Mozambique – Niassa Green Resources and Florestas do Niassa. The pressure on land and water resources increases due to these investments and this a critical driver in the source-to-sea system. An Environment Impact Assessment Report conducted for the Niassa Green Resources Forest Plantation project in the sub-catchments of the Lucheringo and Luchimua Rivers (tributaries to the Ruvuma River in the source areas of the basin) shows that in the proposed 4375 ha plantation the mean flow reduction is estimated to be about 60% within the immediate forestry footprint assuming that Eucalyptus is planted. This impact will be 52% should Pine be planted rather than Eucalyptus. At the sub-catchment level, it will reduce the Mean Annual Runoff by 4.2%. The EIA report also notes the impact of the application of inorganic fertilisers on the water quality will be highly significant if not managed properly. It further notes, the high likelihood of soil erosion caused by these plantations (due to the harvesting and replanting) resulting in increased turbidity of downstream rivers.
17. Mining has also been identified as an environmental threat in the Tanzania part of the basin if sustainable practices are not implemented to promote environmental sustainability<sup>[27]<sup>32</sup></sup>. Already there are operational commercial mining activities in Mbinga (Ruanda Mines) and Likuyu and Sekamaganga Mines in Namtumbo. In Mbinga which is in the Upper Ruvuma – Tancoal Mine and Ruvuma Coals Mine have been requested to prevent water contamination due to high levels of sulphur found and these have been confirmed by the Ruvuma Regional Water Quality Services<sup>[28]<sup>33</sup></sup>. There are existing and planned operations for large-scale mining activities for coal, blue copper, gold, and gemstones in the basin as noted in the Ruvuma Region Investment Guide<sup>[29]<sup>34</sup></sup>. The Guide identifies large scale commercial mining opportunities in gold extraction in Mbinga, coal in Songea, copper in Tunduru and gemstones in Muhuwesi. The artisanal gold mining on the

Lumeme and Lunyere rivers in the Upper Ruvuma sub-basin is causing highly degraded areas as it induces erosion from old mining sites [\[30\]](#)<sup>35</sup>.

18. The Investment Guide for the Ruvuma Region in Tanzania (2019-2025) also highlights planned commercial agriculture activities. The guide notes that 487,187 ha are suitable for coconut farming in the following wards: Mtakuja Village and Mandepwende Village. Sesame is also planned to be cultivated on some 13,586 ha. Some of these planned crops are water intensive like coconut farming and these will have an impact in the long-term on water availability downstream, especially in dry years. There are also plans to expand large scale commercial farming for perennial crops like coffee in Mbinga, cashew farming in Songoea and annual crops such as maize, sunflower, soya beans and intensive farming of horticultural crops. Commercial livestock for beef and dairy products is also planned in the basin. All these plans will have a significant impact on demand of water resources in the basin.
19. Rovuma Basin off the coast of Cabo Delgado Province in northern Mozambique has 10 trillion cubic feet of natural gas discovered in 2006. Since then, several transnational corporations have signed agreements to purchase and exploit gas from this area as of 2015. These include Anadarko, Exxon, Eni, BP, Total and Shell, public and private financiers like the Export Credit Agencies of South Africa, Japan, China, Italy and Holland, the US Export-Import Bank, Credit Agricole, BNP Paribas, as well as several major Chinese banks. Cabo Delgado is home to Africa's three largest liquid natural gas (LNG) projects: the Mozambique LNG Project (led Total, formerly Anadarko) worth \$20bn, Coral FLNG Project (led by ENI and ExxonMobil) worth \$4.7bn, and Rovuma LNG Project (led by ExxonMobil, ENI and CNPC) worth \$30bn [\[31\]](#)<sup>36</sup>. An Environmental Impact Assessment study that was developed of the Total project in Mozambique highlights some of the impacts caused by these developments that will influence the source-to-sea system in the basin. The report notes the potential disruptions in the mangrove and estuary areas due to infrastructure development onshore and inland. The report also notes the potential transferring of alien species via ballast water effects which will have an impact on biodiversity and marine ecology. This will introduce non-indigenous organisms into the river basin which can impact water resources due to high demand of some species. The project will have a substantial Onshore Project Footprint as marshlands, wetlands and woodlands impacts are associated with accidental spills, runoff, and sedimentation. Potential impacts are also associated with groundwater abstraction – with over abstraction leading to saltwater intrusion [\[32\]](#)<sup>37</sup>.
20. At the regional level the Mtwara Development Corridor bisects the vast landscape and connects significant inland resources with port access, unlocking inland development potential. It includes infrastructure development (road and railway) between Mtwara Port (on the Indian Ocean) and Mbamba Bay Port (Lake Nyasa) with extensions to the coal and iron mines of Mchuchuma & Liganga in Njombe Region. The envisioned corridor aims to also connect the Mtwara Port in southern Tanzania, with northern Mozambique, eastern Malawi and eastern Zambia through road, rail, and waterway access. A port expansion project, new roads, and new power and mining operations are among the other components envisaged and under development in various forms. Currently, some sections of road from Mtwara to Songea and 'Unity Bridge' are complete [\[33\]](#)<sup>38</sup>. The WWF conducted a Strategic Environmental Assessments (2016) which highlights the

critical issue of transboundary cooperation in the integrated management of resources – and the impacts of the planned expansion in mining, agriculture, and infrastructure development. The WWF report highlights a concern on how the corridor cuts through a globally significant biodiversity rich area that provides critical ecological services locally, regionally, and globally and notes impacts on connectivity <sup>[34]</sup><sup>[39]</sup>.

21. Recognising this, Mozambique and Tanzania have in 2006 concluded an agreement on the establishment of a Joint Water Commission (JWC), which was subsequently established in 2011. The operationalisation of the JWC has proven to be challenging, especially in the absence of a standing Secretariat. This a major obstacle to the Commission delivering on its mandate effectively. The lack of a mechanism to drive transboundary cooperation – delays a proactive planning regime which has a clear understanding of its's sustainable development space. Considering the above-mentioned immediate and future development challenges in the basin the countries now view the full operationalisation of the JWC as a priority. Furthermore, in 2023 discussions between the JWC and Malawi have been facilitated through the support of SADC and a Memorandum of Understanding is under preparation to formally include Malawi as a member in the Commission. These discussions are moving ahead smoothly, with support from the IUCN Bridge programme. To ensure that the water resources continue to support biodiversity and ecosystem functions – a sustainable development space must be defined by the countries to ensure that planned developments balance social justice, environmental sustainability, and economic efficiency. Having a robust transboundary cooperation mechanism will be critical in building this understanding.
22. At the transboundary level cooperation and management of water resources are currently still in their infancy – as noted a Joint Water Commission has been established but not operating effectively. However, currently there are no financial resources available from the countries to support an institutional structure. The development of an agreement is a much-needed step towards defining a framework to drive cooperation. To ensure sustainable development in the basin – there is a need to address the information gap, to better under the source-to-sea system.
23. The Monograph developed in 2011 – is planned to be updated with support from GIZ and will be completed early in 2024. This will provide updates on the water demand and resources assessment, update the policy review, recommend functional institutional arrangements, analyse development options and alternative strategic actions to meet the future demands. This exercise will lead to the updating of the Ruvuma River Basin IWRM Strategy (2013) – which has focus on infrastructure development, enhancing knowledge and community livelihood projects. Led by the SADC Water Division and the JWC (including Malawi) a joint roadmap was developed with the JWC, GIZ, IUCN and GWPSA. The joint roadmap highlights the updating of the Monograph and IWRM Strategy – as a critical step in the development of GEF IW project. Already there are gaps that are noted in the 2013 Joint IWRM Strategy. For example, the hydrology of the Ruvuma River has not been systematically studied, thus little is known of changes in flow rates or quantities or about sediment load. Currently, there is no environmental monitoring framework and networks that have been established to collect information that will support transboundary decisions and planned measures. Developing an environmental monitoring framework and improving the transboundary network for water information will create an enabling environment towards addressing these gaps.
24. The TFCAs in the basin are also working on strengthening cooperation – the Selous-Niassa Wildlife Corridor (SNWC), extends for a total length of approximately 160 to 180 km following the Ruvuma River linking the two Protected Areas (PAs). An MOU on cross-border cooperation was signed by the regional administrators and local governments of Tanzania and Mozambique on 29 March 2007 to facilitate the establishment of

Selous-Niassa TFCA. The Selous-Niassa TFCA is facilitated within southern Africa's regional development framework, which envisages that TFCAs should attract private capital investments in development infrastructure, hence increasing the number of tourist facilities (hotels and lodges) and improving the quality and sophistication of the service industry. The SNWC is part of the Mtwara Development Corridor, and a number of tourism projects are planned. The well-connected coastline Transfrontier Conservation Marine Area (TFCMA) incorporating the Mnazi Bay-Ruvuma Estuary Marine Park is an important refuge for a range of diversity. Protected Areas institutions covering TFCAs, and Forest Reserve will be key stakeholders in the project and will need to be involved in the planning and management of transboundary water resources through the envisaged stakeholder platforms. From a conservation and an investment perspective, several private sector players are already active in the basin like the Lugenda Wildlife Reserve – these stakeholders will be critical for the in supporting the investment projects under Component 4 of the proposed project.

25. With regards to cross-border cooperation there are ongoing efforts to enable resource-sharing, and this is being forged ahead through developing natural gas utilisation agreements between Mozambique and Tanzania. Tanzania's Petroleum Upstream Regulatory Authority (PURA) and Mozambique's National Institute of Petroleum (INP), as of 2023, the authorities are on the brink of signing an agreement on the equal share of the natural gas reservoir in the border area<sup>[35]<sup>40</sup></sup>. It is, therefore, important to ensure that sustainable water resources management issues are considered in such discussions. Having a strong framework for transboundary water cooperation will be critical to drive engagement with other cross-border development and ensure the much-needed integration as planned measures are being developed in the basin.

### **Global environmental problems and climate vulnerabilities**

26. As noted, the Ruvuma Basin has critical global assets that are important at a local, regional, and global scale. From the headwaters, through the vast protected areas (eastern miombo woodlands and the game reserves) and planned spatial development initiatives driven by mining, tourism, and agriculture, in the Mtwara Development Corridor, to the high areas of rich coastal and marine biodiversity – it is clear that the once pristine basin is under increasing threat and action must be taken now. The basin is being threatened by population pressures and planned development measures which will increase the water demand; and the loss of connectivity of the river system due to land degradation caused by unsustainable land management practices. Large-scale adverse impacts are likely to occur and set the basin on a path of accelerated degradation if the substantial industrial and agricultural developments, and the accompanying population growth, is not sustainably managed.

### **27. Increasing water demand and changes in flow regime**

The key water use sectors in the Basin are urban and rural drinking water, small scale irrigation and water for sustaining ecosystem services being the largest as identified during the IWRM Planning process conducted by the JWC in 2013. The Ruvuma River Basin is rich in biodiversity and is characterised by many important eco-systems. Noting that the non-consumptive environmental demand is significant; an estimation of water flow requirements for the ecosystems have were applied, in the Monograph (2011) to, using the Desktop Reserve Model . The Desktop Reserve Model, showed that between 23-67% (the huge range reflects requirements in the difference between sub-basins) of the natural Mean Annual Run-off (MAR) would have to be allocated to sustain the current ecosystem classes.

28. The increasing water demand and its impact on the flow regime has adverse consequences on ecosystem water needs. It is therefore critical that emerging and future water demand are carefully balanced with ecosystem water requirements, especially in terms of ecosystem resilience to climate extreme events. Consensus around

a shared vision on the rivers' future development through defining a sustainable development space, observing the basic principles of equity and sustainability in the water allocation and management of the river basin is critical.

## 29. Deteriorating water quality

Declining water quality is a key environmental concern in the basin. The 2011 Basin Monograph noted that the main concerns in terms of water quality at the time were the very high turbidity in certain rivers as well as the probability of elevated levels of the pH due to the extensive use of rivers for washing, and the possibility of high levels of heavy metal toxins because of mining activities. Increased nutrient loads from unmanaged agricultural runoff, and pollution and erosion from inappropriate agricultural practices and (often illegal) artisanal mining activities are also an increasing problem. The expected growth in industrial activities is likely to contribute further to the problem. This contributes to the degradation of freshwater, terrestrial and marine environments and has a direct impact on crucial ecosystem services, and the livelihoods of people dependent on these services.

Illegal artisanal mining activities have led to the deterioration of water quality due to the use of minerals such as cyanide for mining. In the Upper Ruvuma the national IWRM planning process led by the Ministry of Water in Tanzania notes that pollution from mining of gold and gems by small-scale farmers is impacting the Muhewesi River a key tributary to the Ruvuma River<sup>[36]<sup>41</sup></sup>. Some coal mining activities in the Mpinga area as noted in the background are impacting the quality of water in Upper Ruvuma. Reports show that in Lupilichi, Mozambique, illegal mining of gold in the village of Ntulo in the Niassa Reserve have been reported – and these operations are depositing sediments that contaminate the river and cause negative impacts on the quality of the water and the species that live and depend on the river<sup>[37]<sup>42</sup></sup>. In Malawi illegal mining activities, unsustainable practices in brick making, sand mining, unplanned construction, agriculture, and indiscriminate disposal of waste were noted by stakeholders as key threats to water quality.

## 30. Environmental degradation and unsustainable use of natural resources

A key driver of deforestation in the basin is charcoal production. Fuelwood is a major source of energy in rural communities and communities use firewood and charcoal for their own use as well as to sell it as a source of income. A study conducted in the Songea district in 2019 noted that the firewood and charcoal consumption rate was 7.16-7.44 kg/day and 3.44-3.56 kg/day respectively with a total annual environment cost of about USD 6.25 million. The study further translates firewood consumption into deforestation – showing that the lower limit total daily deforestation in the Songea district is approximated at 5.3 ha/day and the Upper limit at 20.57 ha/day<sup>[38]<sup>43</sup></sup>. Cumulative loss of the miombo woodlands will have a huge impact on water retention and lead to siltation of the river system and the estuary. The natural regeneration in the miombo woodlands ranges between 59-74% of total deforested area<sup>[39]<sup>44</sup></sup> – meaning some areas will not be recovered.

With increasing population, the unsustainable use of natural resources and the resulting environmental degradation in the basin is growing. Field visits conducted found that a significant proportion of the basin's inhabitants employ the agricultural practice of shifting cultivation in Tanzania<sup>[40]<sup>45</sup></sup>. This is where vast tracts of land in the basin undergo a cycle of slashing, burning, cultivation, and subsequent abandonment after a few farming seasons, leading to soil degradation and loss of forest cover. Often these tracts of land are located near water bodies. A study that looked at Landsat images, from Nachingwea in Tanzania, of 1978, 1993 and 2000 to assess land use changes in the Niassa-Selous Wildlife Corridor miombo woodland ecosystem showed that over 15 years (1978–1993) cultivated land increased by 131% while forestlands decreased by 8.7%. In the following 12 years (1993–2005) cultivated land increased by 65.6% while forestland decreased by 10.7%<sup>[41]<sup>46</sup></sup>.

The basin is home to a substantial livestock population that frequently migrates across its expanse. Due to the absence of designated grazing zones, these animals often graze on the banks of the Ruvuma River, accelerating bank erosion and destabilizing the river's natural boundaries. The Ruvuma Investment Guide notes that over the period between 2008 and 2012, there was an increase in the number of cattle by 517.1 per cent and of sheep by 25.8 percent. The Guide also notes estimated that land fit for livestock grazing in the region was 181,700 ha in 2015, out of which about 80,600 ha (44.4 percent) was being utilized then<sup>[42]<sup>47</sup></sup>. A report by the World Conservation Society notes that due to the climate, soils, rivers, and rainfalls in the North of Mozambique, the area is attractive for large scale agricultural production. From 2006 – 2016 the economic value of agriculture has increased by 14%, for export in the area, whilst the majority of the population derives their livelihoods through subsistence agriculture<sup>[43]<sup>48</sup></sup>. Findings from the Tanzania field visit revealed that livestock migration from the Ihefu and Lindi Region has now moved to Tunduru, Namtumbo, Songea and Mbinga Districts in Ruvuma Region and some livestock have crossed borders to Mozambique along the Ruvuma River – seeking pasture and water.

Field visits conducted for Mozambique and Tanzania also found that artisanal mining activities are very common. However, these activities significantly contribute towards environmental degradation through deforestation, pollution, destruction of landscapes and ecosystems and reducing the soil productivity capacity. The Lupiliche town of Mozambique is one of the areas rich in gold reserves and a popular mining town, where people from other countries migrate to mine gold. Reports show that the illegal companies are operating using heavy equipment, without any environmental management plan with strategies to mitigate degraded areas. The mines also mine without any water treatment systems for processing<sup>[44]<sup>49</sup></sup>. Water pollution is taking place in these areas due to destruction of river profiles resulting from the gold panning activities.

The Ruvuma basin Monograph (2011) and IWRM Strategy (2013) emphasize the need to raise awareness of environmental protection principles and sustainable practices. This knowledge gap hampers efforts to combat environmental degradation and promote eco-friendly activities – and is a key area for the project to address.

### 31. Vulnerability to climate change, especially climatic extreme events

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Droughts regularly affect the basin and result in crop failure causing economic losses for the commercial sector and undermine the livelihoods of small-scale and subsistence farmers. The problem is most acutely felt among the rural poor who do not have the resources to rebuild after extended drought events. During the Mozambique field visit, the main climate-related problems reported by stakeholders were winds, cyclones, and floods, mainly in the lower Mexumue, Cataia, Lunho administrative post, Mongo headquarters, Chia village, and Cobue headquarters. In the current year, a rise in the level of Lake Niassa was observed after heavy rains in the passage of Cyclone Freddy, resulting in the destruction of some infrastructure and erosion in the municipal towns of Chiuele, Cobue, Meluluca and Chuangua. Although few floods have been recorded in the basin especially on the Tanzania side in previous studies - the WorldAid reports severe floods displacing people in villages along the Ruvuma River in Tanzania as recent as April 2023<sup>[45]</sup><sup>50</sup>.

With the increase in economic activity in the basin, and especially the coastal zones due to gas exploration and liquefaction facilities, it is critical to understand the climate risks and integrate climate change adaptation into basin management. In the recent past, the basin has experienced unpredictable rainfall patterns with an increasingly short and intense rainy season, resulting in flooding in areas such as downstream of the Ruvuma basin (i.e Newala, Tandahimba and Mtwara Districts). The Floods in the region are becoming a recurrent concern, jeopardizing lives, property, and infrastructure in the estuary zones of the Ruvuma River. These phenomena have been observed in the IPPC AR 6 – with more extremes projected. Stakeholder engagement during field visits found that communities in the region have low capacity to cope with climate change making them highly vulnerable.

#### **Underlying drivers contributing to the environmental problems and barriers to be addressed:**

#### **32. Barrier 1: Limited technical, institutional, and operational capacity to steer transboundary water cooperation.**

The JWC is mandated to advise the basin States with regards to the collaborative management of the basin. While it was formally established in 2011 the Commission has not yet been fully operationalized and in that sense is still a very new institution with the Member States still establishing the modalities for fully operationalizing the Secretariat and other aspects of the functioning of the Commission. Due to the absence of a permanent Secretariat the JWC in its current state has very limited capacity to deliver on its mandate and needs to be strengthened. Organisational capacity constraints in terms of limited staff complement, absence of effective operational management procedures/ guidelines (e.g., for financial management, procurement, human resources management) prevail and need to be addressed as a priority. The technical task teams of the Commission, especially the flood and drought task-team and a water quality & environment task team need to be operationalized. To steer transboundary cooperation and ensure the environmental integrity of the basin it will be important to develop a transboundary agreement that promotes international water law principles and institutional capacity to effectively manage – this is currently lacking.

#### **33. Barrier 2: Insufficient stakeholder engagement and limited coordination to drive participation in addressing the source-to-sea threats in the transboundary river basin.**



Efficient coordination between relevant natural resources management bodies is currently underdeveloped. Such integration needs to happen at four tiers, a) coordination between the JWC and relevant regional coastal management bodies and protected areas institutions, notably the Nairobi Convention Secretariat, and the TFCAs (including game reserves and forest reserves) b) integration between national entities and the JWC, c) inter-sectoral coordination between national entities, and d) engagement with basin stakeholders (including women, youth, non-state actors, private sector). Lack of coordination and integration between basin management organisations with those responsible for protected areas and those responsible for coastal management is a barrier in promoting sustainable water resources management in the source-to-sea system. Improved coordination and alignment of basin management with these institutions are at the heart of the source-to-sea approach but currently substantially underdeveloped in the Ruvuma River Basin. It is critical that awareness is raised among these role-players, as well as key stakeholders on the benefits of managing the source-to-sea reaching threats in a coordinated manner, and jointly developing tools for implementation.

**34. Barrier 3: Limited transboundary data and information to support decision-making due to lack of continued environmental monitoring in the basin.**

Data and information gaps, and the absence of a harmonised basin monitoring and data collection regime between the Basin States is an inherent barrier towards understanding the status of the basin and the development of science-based management interventions. While the countries undertake some national level monitoring (mostly of flow levels, less on water quality and even less on other environmental parameters), this information is not used in a harmonised system that models the impacts on the basin holistically. Further, the current monitoring system has considerable gaps, with many stations in need of refurbishing. A coordinated basin-wide environmental monitoring system is essential in creating a basin-wide picture to underpin evidence-based management decision-making and ensure the planned industrial and agricultural developments are implemented in a way that adequately considers the needs of basin ecosystems and the population dependent on these systems. The basin is increasingly prone to climate related disasters especially floods and droughts. Data acquisition of hydrological flow is critical, especially near-real-time data for flood situations. Member states have set up hydrometeorological networks in their countries – however, a transboundary network is needed that will drive data exchange as a foundation for an early warning system. The harmonisation of data and information collection is key for decision making purposes. In this context it is also important to effectively exchange data and information between water institutions, TFCAs and coastal zone management institutions to foster transboundary cooperation.

**35. Barrier 4: Limited critical scientific knowledge with regards to understanding the threats to transboundary water resources management using a source-to-sea approach.**

Livelihoods and economic opportunities in the Ruvuma basin countries are currently predominantly based on the use of natural resources. Nutrient recycling, habitat for plants and animals, flood control, and water supply are among the many beneficial services provided by aquatic ecosystems. Land-use changes driving deforestation and soil degradation, water withdrawals for agricultural and industrial use (both likely to increase substantially), and contamination have a profound and often negative

impact on the availability and quality of the resource. Deforestation results in degradation and desertification of watersheds and catchment areas reducing the amount of usable safe water available downstream. Ecosystem services underpin economic development, and therefore understanding the economic value of ecosystems in planning, priority setting, investment and decision making is key. These interlinkages are currently only partially understood for the basin in its current state, and very little is known about how the planned industrial and agriculture developments will impact the system. The last comprehensive basin-wide assessment was done in 2011 (Basin Monograph) and this will be updated through support from GIZ. Work to update the Monograph is aligned through a joint roadmap with the development of this GEF IW project. There, however, remains critical knowledge gaps in better understanding the linkages within the source-to-sea system. Notably, on the groundwater, development of an environmental monitoring framework ( which will provide guidance in monitoring water quality, sedimentation, water quantity, define an e-flows management framework), environmental and social vulnerability assessment and also key elements of ecosystem integrity that take into account the understanding of the critical importance of globally important biodiversity in the basin (through conducting a joint basin survey, improving the understanding of the carbon stock in the basin and value of the ecosystem in the basin, understanding the land-based activities threatening the coastal and marine ecosystem) which is at risk. The TDA will focus on using the source-to-see approach to understand the key flows of water, sediment, biota, and ecosystem services that occur in the Ruvuma River Basin by establishing a basin and understanding the alterations. The TDA will stress the upstream and downstream environmental, social, and economic linkages in order to stimulate coordination across sectors and segments. Improved data availability is needed to improve planning for future economic developments, especially the planned increase in agricultural irrigation and the gas liquefaction facilities in the basin's coastal zone. Hence, the interlinkages between freshwater and coastal and marine ecosystems require further targeted study and a clear understanding of the root causes of the threats.

**36. Barrier 5: Lack of a common and shared vision guiding the understanding of sustainable development in the Ruvuma River Basin.**

As there are a number of planned developments in the basin ranging from tourism, afforestation, oil and gas extraction, agriculture expansion, mining, tourism etc. – it is important to develop a framework that guides an understanding of what is sustainable development in the basin. This means a common framework for understanding a development space that ensures ecosystem health and social justice. This understanding is built on a shared vision by the Member States. The Ruvuma River Basin can learn from the Cubango-Okavango River Basin, on the experiences from the Permanent Okavango River Basin Commission (OKACOM), which has over the years worked towards building a common understanding on the Acceptable Development Space.

The Development Space concept was first introduced in the Cubango-Okavango River Basin (CORB) in 2010. The CORB is a pristine system also facing challenges due to current pressures and planned developments that can impact globally important biodiversity – the peatlands in the upper catchments, the protected areas (KAZA TFCA) and wildlife corridors, the swamps and ox-bow lakes in the lower reaches and the Okavango Delta. During the development of the CORB TDA in 2010 the size of the Development Space was conceptually defined as the negotiated limit of ecosystem degradation in a basin – the focus limited it to a cumulative location, design, and operation of basin developments to those that do not degrade the natural environment beyond an agreed point. This concept was critical in the framing of the SAP and developing scenarios for the Multi-Sector Investment Opportunities Analysis (MSIOA).

To define what constitutes to ‘sustainable development’ for the CORB, OKACOM in 2020 expanded the concept to define a Sustainable Development Space encompassing all three pillars of sustainable development Social Justice, Ecological Integrity and Economic Prosperity. For each pillar *priori* targets are defined which development initiatives will need to support if they are to be considered ‘sustainable’. In terms of the environment, the Sustainable Development Space is defined as the difference between current ecosystem conditions in the basin and the furthest level of ecosystem degradation found acceptable to Member States and other stakeholders through consideration of development scenarios. Beyond this point, the costs in terms of ecosystem degradation could be perceived as outweighing the benefits of development. The concept of an agreed Sustainable Development Space is integral to many of the international and regional agreements to which the member States are signatories, which address issues such as “*no significant harm*” to neighbours, and the need to protect and preserve ecosystems, to notify riparian neighbours on planned measures, and to ensure equitable and reasonable sharing of the benefits<sup>[46]<sup>51</sup></sup>. Defining a shared vision and framing an understanding of the Sustainable Development Space will a key aim of the TDA process.

### **37. Barrier 6: Lack of regulations and enforcement capacity in the governance of resources at the national and local levels**

The countries have developed a number of laws and regulations to guide governance of resources – this is evidenced through the countries signing several key regional and international agreements that promote environmental sustainability. These commitments and agreements have also been translated at the national level – through laws, regulations, policies, and strategies. However, a number of studies and from the stakeholder basin consultations there is increased localized pollution from mining (both commercial and artisanal) and agriculture; illegal logging; ineffective allocation of water resources. This is due to the lack of capacity to implement and enforce regulations. Inadequate management of national governance frameworks has an impact on transboundary governance - national capacity to develop and enforce regulations is therefore critical.

### **38. Barrier 7: Lack of a cross-sectoral basin-wide plan coordinating responses aimed at addressing threats to a source to sea approach.**

Most development and investment in the basin for water resources management are currently done at national level and through national initiatives. This bears the risk of fragmented and uncoordinated development that does not take the needs of the respective other basin State and the environment adequately into account. Another effect is that funding windows that are only available to joint/ regional development initiatives cannot be tapped into, thus reducing the overall investment funding available for the basin. The basin would benefit from a more coordinated, harmonised basin-planning and development approach such as is facilitated through a Strategic Action Programme (SAP). Importantly, an SAP needs to be complemented with a targeted investment and resource mobilization plan, specifically for transboundary environmental investments and management interventions that cannot easily be unlocked through national level programming and budgeting. **There is also need**

develop initiatives and work in with other sectors like wildlife, forestry, and marine management to ensure transboundary water management issues are integrated into their plans and their actions also considered in the planned SAP.

**39. Barrier 8: Lack of resources (financial and human) to support inclusive sustainable livelihoods whilst ensuring ecosystem integrity.**

There are currently limited sustainable financing models that are supporting the protection and rehabilitation of ecosystem services, and novel sustainable development practices promoting integrative approaches that achieve water, food, energy food security. By rehabilitating degraded areas and protecting critical ecosystem services (e.g., through water source protection, contributing to managing coastal ecosystems in the Ruvuma Estuary in Mtwara, promoting community initiatives like reforestation in forest reserves or agroforestry), community livelihoods will be sustained and strengthened.

The promotion and use of ecosystem-friendly technologies in promoting sustainable land management practices, has significant potential for creating avenues for sustainable growth that is decoupled from environmental degradation in systems like the Ruvuma basin. Critical will be developing sustainable financing models around these initiatives so that they are not once-off. Partnerships with private sector working in the basin will be promoted – there are a number of large corporations who rely on produce from the basin in their value chains. Olam for example relies on coffee grown in the Songea basin, there are large-scale mining operations in Mbinga, commercial forestry companies like Green Resources and tourism operators like the Lugenda Wildlife Reserves in the basin. These private sector partners will play an important role in developing these sustainable financing models working closely with other communities, NGOs and government. Concrete examples need to demonstrate the socio-economic and environmental benefits derived from such approaches which are currently still perceived as high-risk investments. There are also limited partnerships and joint action among the public and private sectors, and rural communities promoting gender equality, social inclusion and contributing to building resilience to climate change. There is a need to showcase that the application of these concepts can create jobs and ensure sustainable livelihoods to encourage replication and scaling-up.

**40.** This project has been chosen because it provides the opportunity to address the above-mentioned natural resources governance barriers in an integrated and holistic manner, engaging stakeholders at all levels of governance, ranging from JWC as a transboundary basin organisation, via national level government and non-government stakeholders, to community level stakeholders that directly benefit from the demonstration projects. Through interlinking governance structures for land, freshwater and marine management, the project is intent on establishing for the first time in the basin a truly integrated natural resources governance framework, including, critically, the implementation in practice of the source-to-sea management approach.

**41.** The project builds on the nascent collaboration on transboundary waters between the basin countries. The scientific components of the project (TDA etc.) build on previous joint studies conducted from in and prior to 2011 and complement a forthcoming update of the 2011 Monograph carried out with GIZ

support. In this context, the TDA will focus on transboundary environmental aspects to update and fill critical knowledge gaps. The proposed project provides an opportunity to interrogate the freshwater/terrestrial/ marine environment linkages in the basin further and establish the scientific-technical basis to implement the source-to-sea approach that will increase the understanding of threats caused by unsustainable land-based activities identified through the TDA process. Upstream and downstream environmental, social, and economic linkages are highlighted to stimulate coordination across sectors and segments. The understanding of the threats to the source-to-sea reach will contribute to providing holistic solutions to address the growing water pollution concerns, the flow regime change due to increasing water demand and deforestation. Continuing to implement governance frameworks that do not include perspectives that promote upstream and downstream linkage and only focused on one sector or segment leads to the continued degradation of freshwater, terrestrial and marine environments, which would in turn lead to heightened water, food, energy, and environmental insecurity. There is also a need to enhance the capacity for enhancing regulations and enforcement at the national and local levels.

42. The project will build on number of lessons learned from the implementation of transboundary projects in the region. The first is that building a common and joint understanding of issues is critical in driving cooperation, secondly it will be important to ensure that national and local governance capacity is built as a foundation – a lot of this work has been done in the Orange-Senqu River Basin. Inspiration from the OKACOM processes will also provide huge learning opportunities on how to work in pristine ecosystems and ensure there is a deeper understanding of understanding the development space. With regards to the source to sea approach the project will engage with Drin River Basin project (also supported by GWP). Investment projects on the ground activities have also been implemented recently through the ORASECOM supported GEF project and through the SADC WEF Nexus Regional Dialogue Programme – lessons have been captured with regards to community-private partnerships, ensuring inclusion and promoting environmental security. Stakeholder engagement process in the Zambezi and the Incomati and Maputo River Basins – will provide lessons around issues of sustaining these.

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## B. PROJECT DESCRIPTION

### Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

### Theory of Change

1. The Project Development Objective to promote multi-sector transboundary water cooperation through a source-to-sea management approach aimed at ensuring that ecosystem health and social inclusion are integrated into planning, development, and management, of the Ruvuma River Basin.
2. The identified source-to-sea impacts are driven by unsustainable development practices, increasing water demand and activities that contribute to nutrient loads and altering the flow regime. Deforestation is also leading to loss of water retention in the miombo woodlands impacting on critical functions they provide like flood attenuation and are important for carbon sequestration. The frequent extreme climatic events like the recent tropical cyclones lead to flooding and an increase in sedimentation once critical vegetation is lost. These issues lead to deteriorating water quality, land degradation and biodiversity losses in terrestrial and marine ecosystems. Ecosystem services supplied by the source to sea system are directly impacted by the alteration of water, sediment and biota flows and the introduction of pollutants and materials. Future developments, if planned and developed without integration of ecosystem health and social inclusion will lead to significant losses to the global environment benefits currently, being derived in the river basin. With the environment being the largest water user in the basin the planned activities driven by the Spatial Development Initiative will increase water demand thus competing for the resource. In order to have a holistic approach and ensure the basin maintains its ecosystem health the upstream-downstream linkages are critical in the management. Transboundary cooperation is therefore vital in enabling an approach that brings the countries and different role players together.



Eight barriers impacting and influencing healthy ecosystems and perpetuating threats for the source to sea reach have been identified. Addressing these barriers will lead through clear pathways will deliver a transboundary cooperation that brings sectors together and contributes to healthy ecosystems. Ensuring that sustainable linkages between terrestrial ecosystems and marine ecosystems are well elaborated to be managed in such a way that the basin continues to deliver local and global environmental benefits and improve livelihoods. Interventions have been developed to define pathways that will lead to multi-sector cooperation in addressing immediate problems experienced in the basin and identified as the key source-to-sea reaching. The project works through a systematic approach of enhancing governance capacity, understanding the basin based on scientific evidence, promoting strategic multi-sector planning approaches and ensuring investments are put on the ground to ensure environmental security, social inclusion, and sustainable livelihoods.

The expected overall impact of the combined interventions of the project will be through improving the management of transboundary water resources through promoting multi-sector cooperation with role players in terrestrial, coastal and marine ecosystems. The impact will also be through addressing the key source-to-sea reaching threats, through promoting inclusive and collaborative efforts. The project will promote stakeholder engagement at the transboundary level that will lead to a shared vision and understanding of the needs for sustainable development in the basin. Through establishing partnerships between public, private and community stakeholders – inclusive community initiatives that promote the protection of identified transboundary vulnerable hotspots will be promoted to develop sustainable financing models.

3. The limited technical, institutional, and operational capacity of the JWC to steer transboundary water cooperation (Barrier 1) creates a vacuum in terms of ensuring that there is coordination in planning and managing the transboundary water resources. To strengthen the transboundary governance framework there will be need to establish an agreement based on international water law principles and enhance institutional mechanisms anchored on member states existing frameworks. In order to consider the critical terrestrial, coastal and marine ecosystems that deliver global environmental benefits, the project is looking at working closely with TFCAs and coastal institutions in driving the cooperation. A capacity building plan will be developed, considering gender issues – to ensure that institutional capacity is targeted and builds on strengthening existing frameworks. In strengthening the JWC – it will also be important to develop a financial sustainability strategy that proposes funding models that take advantage of the multi-sector approach. The JWC will also develop formalized relationships (e.g., MoU) with the Nairobi Convention, the marine parks and TFCAs operating in the basin. Closer integration and cooperation between freshwater and coastal & marine management institutions will ensure the implementation of a source-to-sea approach which will promote linkages between terrestrial, coastal, and marine ecosystems. The involvement of the SADC Secretariat who are supporting TFCAs (through the SADC TFCA Facility) and the RBOs (through the Regional Water Policy) will be critical in providing guidance and leadership. This project will through SADC Secretariat ensure reporting is done at the Ministerial level at the regional level – SADC has been instrumental in the development of the project. The main assumption in this regard is that JWC will in the near future receive contributions from both countries to ensure it has capacity within the Secretariat to take forward work initiated by this project.

4. There has been insufficient multi-stakeholder engagement and limited coordination to drive participation in addressing the threats to source-to-sea system in the Ruvuma River basin (Barrier 2). A multi-stakeholder approach is important to ensure that the brewing “polycrisis” caused by the different environmental problems driven by development pressures and climate extremes are addressed holistically. Cross-sector cooperation is going to be addressed systemically through supporting the establishment of platforms that will bring together stakeholders who are influencing or impacting the management of transboundary water resources in the basin. The project will learn from other regional basin organizations like the Zambezi Watercourse Commission (ZAMCOM) who have established National and Basin wide Stakeholder platforms – that promote cross sector cooperation. These platforms will build on member states processes that have been established to support water resources management – there will be need to build their capacity in be involved in planning and management to support transboundary processes. Inclusion of stakeholders including women groups, youth organisations and private sector will be a critical approach that the project will support. These platforms will be central to raising awareness and sharing experiences to influence integration water resources management, ecosystem health and social inclusion in the basin’s development. They will also serve as consultative forums – lessons will also be learnt from IncoMaputo stakeholders who have established self-financing stakeholder platforms. The TFCAs will play a role of bringing stakeholders who are working in Protected Areas to be part of the process – and the costal and marine institutions will likewise bring their main stakeholders on board.
5. The Monograph developed in 2011 provided an overview of critical water resources issues in the river basin – and this information will be updated through support from GIZ. However, there remains some critical scientific knowledge gaps with regards to understanding the key source-to-sea reaching threats and linkages of the terrestrial and marine ecosystems (Barrier 4). In order to address this and set a baseline that will support science-based decision making – a Transboundary Diagnostic Analysis will be carried out and supported by a Joint Basin Survey that will identify the key issues and needed to be addressed in promoting source-to-sea connectivity. The TFCAs – will play a central role in addressing the gaps on protected areas – and also the forest management agencies will fill in the gaps on forest reserves. Marine Parks will play a critical role of leading in addressing the information gaps on the coastal and marine ecosystems. The project will engage players like Western Indian Ocean Marine Science Association has a broad membership to ensure that information on the marine ecosystems is well integrated addressing the knowledge gap. The legal review conducted as part of updating the Monograph will also look at potential policies and incentive structures to industry and agriculture that directly or indirectly contribute to land conversion and environmental degradation.
6. Limited transboundary data and information to support decision-making due to lack of continued environmental monitoring in the basin (Barrier 3) – means that there is no information in place to support decision making and in a basin with a multitude of development plans, this is a major risk. To address this risk the project will support the development of an environmental monitoring framework – which will identify the key issues for monitoring and the parameters and procedures for exchanging data – learning from other RBOs in the region like LIMCOM, OKACOM and BUPUSA.. Building on ongoing work by the countries – a transboundary network of key gauging stations will be identified and rehabilitated. This will ensure critical transboundary points are monitored – partnerships with agencies like the European Space Agency (ESA) will be critical to use the information from satellites observing the Earth to address data gaps. ZAMCOM is working on building a relationship with ESA – and the Ruvuma countries who are all part of the Zambezi Watercourse can build on this work. Understanding of the groundwater hotspots will also be an information gap that will be addressed.

Partnerships with organisations like IWMI who are developing digital tools to support water information systems will also be explored during the PPG phase.

7. Lack of sectoral cooperation at the transboundary level that drives a shared vision and an understanding of a sustainable development space - leads to unsustainable development practices continuing unabated (Barrier 5). To address this barrier it is important for that stakeholders have a shared vision towards sustainable development in the basin.. Setting a framework for the basin that guides the understanding of a sustainable development space is one key action that the project will support. This will be a multi-stakeholder-driven process conducted as part of developing the TDA. It will be based on the understanding of local and globally important biodiversity and ecosystems and also build on an environmental and social vulnerability mapping to be carried by the project. The project will learn from a similar process that has been conducted in the CORB in defining a vision and the key considerations for a framework for sustainable development space. Lack of regulations and enforcement capacity in the governance of resources at the national and local levels (Barrier 6) is also limiting transboundary cooperation. As part of the TDA an assessment of the regulations and how they are being implemented in countries to manage the environmental problems will be conducted. The assessment will also look at the capacity needs and develop a plan to respond within the project. Responses that will highlight the need for national policy and regulatory reform and enhancing enforcement of regulations will be integrated into the NAPs. In implementing the investment projects in Component 4 – focus will be on supporting projects that enhance the capacity to enforce regulations at the local level.
8. The lack of a cross-sectoral basin-wide plan coordinating responses aimed at addressing threats to a source to sea approach (Barrier 6) hinders mobilization of resources to address transboundary environmental issues. Based on the findings of the TDA, the Joint Basin Survey, Environmental and Social Vulnerability Mapping an inclusive stakeholder-driven basin-wide and coastal management strategic planning process will be initiated. The development of a Strategic Action Plan and National Action Plans (SAP and NAPs) will enhance actions to ensure ecosystem integrity and social inclusion in the basin forming Component 3 of the project. They will also enhance cross-sector cooperation in a systematic way through defining interventions that will be driven through the National and Stakeholder Platforms to be established during the project implementation. The SAP will be endorsed by the Ministers of the three countries – ensuring ownership for implementation at the highest level. Furthermore, a strategic investment planning process will be supported by the project to ensure that investments are targeted, prioritized, and sequenced for improved environmental security.
9. Lack of resources (financial and human) to support inclusive sustainable livelihoods whilst ensuring ecosystem integrity (Barrier 7) is increasingly an area of concern as communities are forced into illegal activities like tree logging, artisanal mining, sand mining, and streambank cultivation. These activities will lead to environmental degradation. Sustainable land and water practices will also be promoted in order to conserve the ecosystems and improve livelihoods. Projects that promote the enforcement of regulations in management of the resources will be prioritized for implementation. This is will be aimed at building the capacity of local authorities in managing the environmental problems impacting the health of the ecosystems.

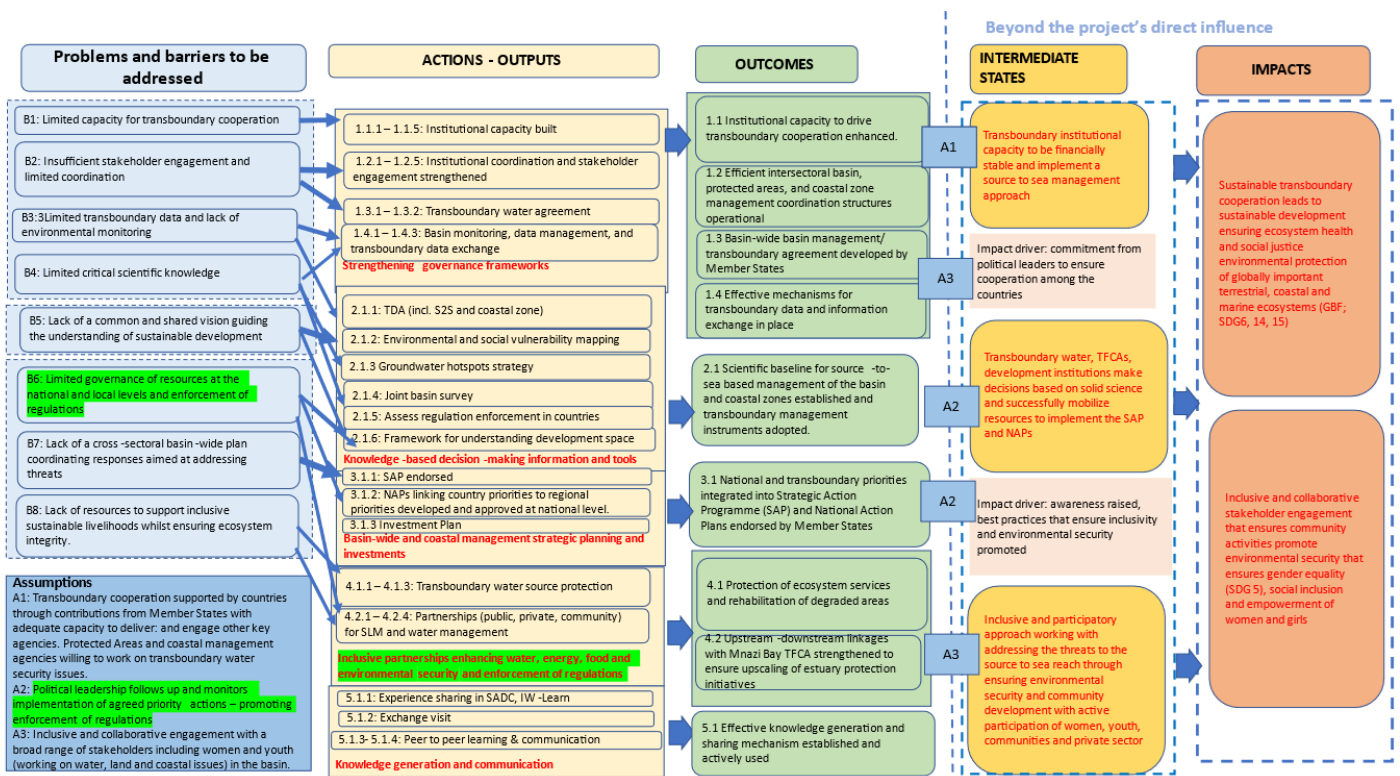
The lack of access to water and land resources and information to women, who are the majority in the basin, also leads to social exclusion and leaving people behind in development activities. The

project will aim to support the development of sustainable financing mechanisms to upscale ongoing practices and improve social inclusion. Through establishing partnerships with private sector and communities (with special attention to empowering women groups and youth) and working closely with coalition partners like the Sustainable Finance Coalition – sustainable financing models on successful interventions that promote environmental security and social inclusion and contribute to ensuring water, food, energy security will be developed. Several private sector firms are already operating in the basin like OLAM (who have implemented a water stewardship programme in Songea with coffee farmers) and ETG who support sustainable agriculture value chains. These will be critical in supporting innovative financial mechanisms to support the upscaling of sustainable initiatives – as they have a direct impact on their value chains. Working under the leadership of the Africa Water Investment Programme (AIP) – GWP SA will also bring in the political leverage and partnerships to support this work.

10. To ensure the sustainability of the actions – the project will work through national institutions as Responsible Parties for these demonstration projects. These national institutions will be identified from the range of role players supporting interventions in the different components. This will ensure that the outputs and outcomes of the project are integrated and aligned with the national institutions driving policy formulation and implementation.

The diagram overleaf provides a schematic overview of the theory of change, showing the barriers to be addressed and how they are addressed through the project, leading to the expected impacts. The main assumptions underlying the causal connections in the Theory of Change are the continued cooperation between the Member States and the willingness of stakeholders to participate in the planning and delivery of solutions in the transboundary basin. A more detailed description of the project components follows thereafter.

Theory of Change:



## 1. Project components

The project comprises five (5) technical components (plus supporting components for M&E and project management).

### 2. Component 1: Strengthening institutional frameworks for transboundary basin and coastal zone management.

This component directly addresses barriers 1 through 3 in that its four outcomes focus on the strengthening of transboundary management frameworks and enhancing stakeholder mechanisms that will drive engagement with a number of sectors. The Basin States highlight uncoordinated development and management as a concern both at transboundary and national levels. While cooperation over shared water resources is ongoing under the umbrella of the JWC, coordination remains weak due to the very limited capacity of the JWC, a lack of integration between management structures at all levels, and a shortage of reliable data and information for integrated, basin-wide source-to-sea management. There is also a recognition that a multi-stakeholder approach is needed to address the threats that will limit a source-to-sea approach in the basin. A need to collaborate with protected areas and coastal institutions will therefore be critical to ensure that coordination is enhanced in managing and conserving key globally important biodiversity. The Basin States have recognized this shortcoming and therefore prioritized the strengthening of management and integration as key elements of the proposed project. In terms of capacity both GWP-SA and SADC WaterNet, the regional institutions driving capacity development in Southern Africa, will work with the JWC, which will ensure that a lot of experiences gathered from working with RBOs are transferred, thereby ensuring the robustness of the implemented solutions. Critical in this component will be the strengthening of how the Basin States will consider issues of gender equality in the identification and implementation of the capacity needs. As part of the gender analysis, to be conducted during the project preparation phase (PPG) – a comprehensive analysis will be undertaken to understand the barriers on women involvement in transboundary water management. Partnerships with organizations like the SIWI Africa Regional Centre who are driving the initiative on Women in Water Diplomacy Network with other regional

RBOs will be forged in order to better understand and address the issues. Responses to these barriers will be integrated into the Gender Action Plan during the PPG phase.

3. **Outcome 1.1: Institutional capacity to drive transboundary cooperation enhanced** it is critical to support the JWC as a nascent organisation to effectively fulfill its transboundary coordination and management mandate. This is done through strengthening of institutional structures and processes, and human resource capacity strengthening at organizational and individual levels. There is need to provide guidance on the financial sustainability of the JWC beyond government funds – taking advantage of the multi-sector approach to also address issues of funding. The need to build country contributions for the core budget of the JWC – will be built into the process of negotiating an agreement and permanent transboundary legal and institutional framework between the country during the project implementation.

Outcome 1.1 is implemented through the following five outputs:

- Output 1.1.1: Technical Committee taking into consideration gender and inclusivity to oversee established.  
Output 1.1.2: JWC Secretariat established building on existing national processes and a financial sustainability strategy proposing funding models proposed.  
Output 1.1.3: Comprehensive gender sensitive organizational procedures for JWC Secretariat developed.  
Output 1.1.4: Priority JWC Task Teams taking gender concerns into account (e.g., Flood & Drought, Water Quality & Environment, Legal, Gender Focal Points etc.) operationalized.  
Output 1.1.5: Capacity building plan for JWC and relevant national counterpart institutions taking into consideration gender barriers for women involvement developed, and priority actions implemented promoting source to sea approaches.

4. **Outcome 1.2: Efficient intersectoral basin, protected areas, and coastal zone management coordination structures operational** focuses on cross-sectoral integration of management structures at four tiers, a) coordination between the JWC relevant protected areas and international coastal management bodies, notably the Nairobi Convention Secretariat, a) integration between national entities and the JWC, b) inter-sectoral coordination between national entities, and c) engagement with basin stakeholders. It is the first time in the basin that the Basin States have committed to the adoption of the source-to-sea management approach and the harmonisation of commensurate management structures, this will elevate transboundary cooperation to new levels of integration and cooperation.

The outcome is implemented through the following outputs:

- Output 1.2.1: Effective working arrangements (e.g., MoUs) with protected areas (TFCAs managed by the regional administrators) and relevant coastal management institutions at national and regional level e.g., the Nairobi Convention, established.  
Output 1.2.2: National Intersectoral Committees for transboundary water resources management established (platform to engage with government institutions working with TFCAs, PAs and coastal management institutions)  
Output 1.2.3: National level basin multi-stakeholder forums strengthened, and Basin-wide stakeholder forums based on a Stakeholder Engagement Strategy that ensures including women and youth established.  
Output 1.2.4: Engagement with SADC Secretariat to strengthen the efforts aimed at supporting cooperation between shared water course institutions and protected areas.  
Output 1.2.5: Ruvuma River Basin and Coastal Zone Awareness Kit (highlighting the key source-to-sea reaching threats) developed and widely disseminated.

5. **Outcome 1.3: Basin-wide basin management transboundary agreement developed by Member States** is geared at the development and adoption of international transboundary water law principles based the Revised SADC Protocol of Shared Watercourses to which the Basin States are Parties, and the subsequent negotiation and adoption of a basin management agreement. The SADC Secretariat will play a key role in facilitating this outcome. As a regional body overseeing the implementation of the Revised Protocol on Shared Watercourses the SADC Secretariat has over the last several decades facilitated and supported the establishment of RBOs across the SADC region and supported the RBO Member States in the progressive development of basin agreements. The SADC Secretariat taking a lead role in the facilitation of the agreement will ensure that the countries benefit from a broad set of regional experience built over decades, and at the same time ensure that the water sharing principles are harmonised with the SADC Protocol and established transboundary water management practice in the region. This will pave the way for working towards establishing a Shared Watercourse Institution to facilitate transboundary cooperation. The agreement will also be critical in facilitating decisions around future planned developments and will address issues of prior notification; and provisions to deal with dispute resolution. The agreement will also learn from other international mechanisms on how to integrate and consider precipitation and flow changes due to climate change.

The Outcome is implemented through the following outputs:

Output 1.3.1: International water law principles adopted as the basis of drafting a transboundary water agreement guided by the Revised SADC Protocol on Shared Watercourses

Output 1.3.2: SADC supports JWC in facilitating negotiations to establish a transboundary water agreement.

6. **Outcome 1.4: Effective mechanisms for transboundary data and information exchange in place consolidates** transboundary information sharing as a basis for evidence-based decision-making. It will establish the first full basin-wide environmental monitoring system, as well as a Water Information System (WIS) as a central repository for all relevant water and natural resources management information. The use in management decision-making of the stored information will be ensured through the development and establishment of a Decision-Support System that provides scientific-technical guidance for the decision-making of the Commission and other relevant role-players. Basin monitoring and the use of the WIS/ DSS can only be effective if there is efficient and transparent sharing of relevant (monitoring) data and information. This will be supported through the development and adoption of transboundary data and information exchange procedures.

A central building bloc of collaborative management is joint environmental monitoring of the basin and its resources and making science-based management decisions. Variables to be monitored for resource condition, environmental and biological parameters will be proposed together with the monitoring sites and sampling frequency. Good understanding of monitored information on environment and resource condition over time will help to set the level of protection as well as identify problem areas that need additional management. Discussions will be held with the Member States to ensure there is a formal agreement on the type, frequency, and use/purpose of the data and information to be exchanged. These discussions will also investigate the jurisdictions and sectors within and across countries and will also be linked to identifying the key components of the Environmental Monitoring Framework. The Environmental Monitoring Framework for the Ruvuma Basin will be linked to the on-going monitoring programmes for the Niassa-Selous TFCA and the Mnazi Bay Ruvuma Estuary Marine Park (MBREMP). Lessons learnt from the adoption of data and information sharing procedures in the Zambezi, Cubango-Okavango, and Buzi, Pungwe, Save (BUPUSA) basins will be drawn upon to ensure the effort contributes to harmonization of data and information exchange practice across the SADC region.

The outcome is implemented through the following three outputs:

- Output 1.4.1: Basin-wide water/ environmental monitoring system fully operational (including refurbishment/modernization of existing stations) **building on existing systems and using remote sensing**
- Output 1.4.2: Existing systems upscaled and full Water Information System (WIS) **developed using digital tools.**
- Output 1.4.3: **Define an environment monitoring framework and the procedures for data and information exchange between JWC Member States adopted and applied.**

7. **Component 2: Facilitating integrated basin and coastal zone management through science-based decision-making** builds on and complements the outcomes of component 1. This component specifically addresses barriers 4 and 5, but also contributes to addressing barriers 1-4 in that it contributes to the overall strengthening of institutional decision-making. The central elements of this component are to strengthen science-based decision-making, establish transboundary management instruments informed by the former, and establish a basis for translating science-based decision-making into management and investment prioritization, and mobilization of investment (see Component 3).
8. **Outcome 2.1: Scientific baseline for source-to-sea based management of the basin and coastal zones established and transboundary management instruments adopted** focuses on the consolidation of relevant scientific-technical information in a comprehensive basin assessment (TDA), supported by studies to fill critical information gaps currently present (e.g., vulnerability risk assessment, sustainable groundwater use potential). A focus of the TDA will be to ascertain the current and potential impact on the ongoing gas exploration activities and the building of large-scale industrial facilities for gas liquefaction. These developments have started in the past decade and were therefore not considered in the 2011 basin monograph.
- The SADC Transboundary Water Management Programme, implemented by GIZ, is working on updating the monograph (state of the Basin) report focusing on water resources information. The TDA will enhance the existing knowledge base using a source to sea approach to unpack the transboundary environmental issues providing a deeper understanding of the interactions of the resources. Therefore, little is known about the impacts, requiring primary research to create a better understanding of their impact on the management of the basin, its coastal zones, and adjacent marine areas.

As described one of the barriers to this at present are substantial data and information gaps in some critical fields (such as groundwater management and climate risk assessment), inefficient data and information exchange, and the lack of a central repository for data and information and the use of such in the joint decision-making. Component 2 of this project will address the critical information gaps through the development of a TDA and supporting studies on groundwater and environmental & social vulnerability risk mapping. The latter will focus on the building of **inclusive** resilient communities based on the assessment of community livelihood risk factors including environmental, climate, **gender equality, social inclusion, health, climate, and related risks.** Vulnerability hotspots will be identified and supported through the **upscaling demonstration projects (see Outcome 4).** **An understanding of the national and local regulations that address the environmental problems will be conducted as part of the TDA – a capacity building assessment will also be done as part of this work. A capacity building plan will be developed an implementation initiated as part of the project.**

The groundwater activities will be implemented through a formalized cooperation with the SADC Groundwater Management Institute and will focus on identifying pertinent groundwater issues on conjunctive management of water resources and coastal aquifers in the TDA process. Partnerships will also be explored with the International Atomic Energy Agency (IAEA) to explore isotope hydrology applications which will be cost effective to **complement traditional groundwater** assessments. As part of the TDA process information will be collated from existing hydrogeological assessments and gaps will be identified – prioritized actions to address issues identified in the TDA will be incorporated into the SAP. The assessments will also increase the understanding of the interlinkages of the activities in the terrestrial ecosystem and the



marine ecosystem. A Joint Basin Survey will be conducted with the Member States and key officials, and this will be aimed at deepening the understanding of basin issues – it will employ the eDNA techniques and assess the health of the system using agreed parameters. A key action that will support decision making in planning development initiatives is the understanding of the sustainable development in the basin. Lessons will be learnt from the OKACOM process where a Basin Management Development Framework was defined during the TDA process – taking into consideration the globally important diversity in the pristine system. The countries working towards understanding the limitations to ecosystem health and social inclusion will be important in planning for sustainable development in the basin. It is important to ensure that short-term thinking and planning doesn't undermine long-term sustainability.

The outcome is implemented through the following outputs:

Output 2.1.1: Transboundary Diagnostic Analysis carried out, including application of the source-to-sea concept for integrated basin and coastal zone management.

Output 2.1.2.: Environmental (including identification of potential areas of high pollution) & social vulnerability mapping for the basin and coastal zone carried out using satellite information and community resilience ensuring gender equality and social inclusion strategies developed and supported as part of the TDA process

Output 2.1.3: Identification of groundwater hotspots (areas of high contamination) and development of a transboundary groundwater management strategy focusing on areas with high likelihood of contamination

Output 2.1.4: Joint Basin Survey conducted to increase understanding of the basin (using eDNA techniques) and assess the ecological status of the river and estuary.

As part of preparing the TDA develop a framework to determine the sustainable development space (learning from Cubango Okavango River Basin)

Output 2.1.5: Assess regulations and enforcement in the different parts of the basin and develop a capacity building plan to respond

Output 2.1.6 As part of preparing the TDA develop a framework to determine the sustainable development space (learning from Cubango Okavango River Basin)

9. **Component 3: Supporting strategic investment planning and resource mobilization for integrated basin and coastal zone management** supports the Member States in driving and inclusive stakeholder-driven step of translating the scientific knowledge generated by the TDA into targeted strategic actions and investments on the ground.
10. **Outcome 3.1: National and transboundary priorities integrated into Strategic Action Programme (SAP) and National Action Plans endorsed by Member States**, addresses the lack of a basin-wide investment prioritization and resource mobilization plan that is cited by stakeholders as a critical weakness in the coordinated management of the basin and coastal zone. The SAP and its related NAPs will be a critical instrument endorsed by Ministers to drive a long-term strategic process to address the transboundary environmental challenges. A key barrier identified at the national and local level is the enforcement of regulations – based on an assessment to be conducted during the TDA development responses to enhance capacities will be integrated into the NAPs. The absence of an integrated investment plan for the entire transboundary basin is cited as a main reason for both limited investment and fragmented investment. Component 3 will ensure that actions that will promote sustainable management of freshwater and coastal resources using a source-to-sea approach are prioritized for investment and implementation. The investment plan will allow for innovative mechanisms to finance the SAP. The process to develop the plans will be conducted through an inclusive participatory approach that will ensure stakeholders, including women and youth, are integral to it. This will be addressed through the following outputs:

Output 3.1.1: SAP for the transboundary basin and coastal zones developed through an inclusive participatory approach (taking into consideration community resilience through ensuring water, energy, food, and environmental security) and endorsed by the three governments.

Output 3.1.2: National Action Plans (NAPs) linking country priorities to regional priorities and taking into consideration enhancing regulation and enforcement that support transboundary governance developed and approved at national level

Output 3.1.3: Investment Plan for implementing the SAP and the NAPs developed and adopted by the three governments.

11. **Component 4: Promoting sustainable land and water management through effective stakeholder engagement** has the dual focus of protection and rehabilitation of ecosystem services to sustain livelihoods and unlock the potential for alternative business and livelihood concepts that ensure water, food, energy security, and conservation-based livelihoods. This will be done through identifying projects that meet this dual focus and upscaling them through building sustainable mechanisms. The projects will build on public, private and community partnerships to unleash the potential for conservation-based livelihoods through enhancing water, food, energy, and ecosystem security. A central aspect of that will be the long-term sustainability and economic viability of the interventions beyond the project lifespan, as well as the potential for replication.

Component 4 is underpinned by the cross-cutting issues of gender mainstreaming and climate resilience that are directly integrated into the design of the demonstration projects. The pressing in-country issues were identified with local stakeholders and communities during field visits held in Malawi, Tanzania and Mozambique in August and September 2023. Furthermore work and detail will be required - the identification of successful projects and partners will be based on a robust criterion (to be further refined during the PPG phase) and address key drivers of environmental insecurities. The following are some of the key criteria that will be considered in a screening tool to be used by the countries, national water, protected areas, and coastal management institutions (depending on geographic location) working with local stakeholders to select the projects:

- is the proposed demonstration addressing the key drivers of environmental insecurity identified in the basin (the source-to-sea reaching threats)
  - transboundary impact of the selected intervention (is the intervention promoting a source-to-sea approach i.e., ensuring that it addressed land-based activities that impact terrestrial and marine ecosystems)
  - is the project contributing to addressing poverty issues in the basin (through ensuring water, food, and energy security)
  - long-term sustainability and economic viability beyond the project lifespan
  - does the intervention address issues related to sustainable management of water, food, energy, and other environmental resources
  - does the intervention promote gender equality and social inclusion – to empower and involve women and youth.
  - does the intervention promote innovative and scalable solutions (replicability and potential to upscale and out scale) aligned and adding value to on-going actions. Has it been successful implemented before with tangible results?
  - does the project have potential to establish a sustainable financing model with identified partners
- does the intervention support national and local development priorities.
- does the initiative promote climate resilient development and is there potential to contribute to climate mitigation
  - does the project have a project promoter (owner) that will ensure its sustainability
  - does the project have clear partners to support implementation and scaling? Is there scope for private sector engagement and involvement?

12. **Outcome 4.1: Protection of ecosystem services and rehabilitation of degraded areas** focuses on ecosystem rehabilitation and protection of ecosystem services through efforts such as water source protection, rehabilitation of erosion hotspots and supporting sustainable land management. Inclusive projects, that promote the involvement of women and youth, in the protection and rehabilitation of ecosystem services to sustain livelihoods, such as water source protection, rehabilitation of erosion hotspots (e.g., Quionga, Ngapa, Lago, Sanga, and Mavago communities), including protected areas (forest and game reserves. Activities will also include cooperation to manage deforestation and involving citizens in monitoring key environmental parameters.). In order to bring lessons for learning linkages will be made with the Global Opportunities for Long Term Development In Artisanal and Small Scale Mining Programme (GEF GOLD and GEF GOLD+) in order to ensure countries have an understanding of how to better manage the risks to shared water resources and the ecosystems health. Critical will be the work done through partnerships to develop sustainable financing models.

The outcome is implemented through the following outputs:

Output 4.1.1: Key transboundary / water source protection areas identified for sustainable management and protection through partnerships with communities.

Output 4.1.2: Promoting private sector engagement in developing sustainable financing models for protection of catchments and groundwater recharge zones (e.g., through expanding water stewardship initiatives)

Output 4.1.3: Promoting community involvement across the river basin, including women and youth, in implementation of sustainable land and water practices (e.g., community-based projects promoting enhancing of capacities to enforce regulations; water, food, energy and environmental security; monitoring through citizen science working with the private sector, TFCAs, coastal and fisheries institutions;)

Output 4.1.4: Strengthening cooperation with protected areas and forest reserves to reduce deforestation through upscaling inclusive community initiatives (through e.g., indigenous tree nurseries, agroforestry practices)

13. **Outcome 4.2: Upstream and downstream linkages with Mnazi Bay TMCA strengthened to ensure upscaling of estuary protection initiatives** is directed unlocking innovative economic development and livelihood solutions through ensuring the impact of land-based activities in coastal and marine zones promoting blue economy activities is managed. This will be done through promoting estuary protection activities through developing partnerships. A compendium of practices will be developed to capture sustainable practices that address the impact of land-based activities – this will be done by making linkages with the Nairobi Convention Secretariat in order to transfer knowledge based on their support in the West Indian Ocean. The streamlining of gender equality, through for example well targeted capacity development of the technical aspects of the projects, awareness creation, implementation of targeted initiatives for women, men and socially excluded social groups will also be an integral and the identification and implementation of the demonstration projects. It will also be important to build partnerships with private sector players working in the coastal and marine zones – who are deriving benefits from functioning ecosystems. Potential working relationships with partners working on reducing plastic pollution in coastal areas like the Clean Oceans Initiative focusing on reducing plastic pollution and initiatives land by WWF and IUCN supporting the Marine Park – will be explored during the PPG phase. These initiatives targeted at the coastal and marine ecosystem will use a transboundary lens that focuses on understanding the upstream-downstream linkages in the source to sea system. GEF supported work the Development of Mnazi Bay and Ruvuma Estuary (GEF Project ID 780) through UNDP under GEF-2 – the project focused on protected area zoning.

It will be implemented through the following outputs:

Output 4.2.1: Promote engagement with private sector and communities, including women and youth, upscaling ongoing activities on estuary management beekeeping activities.

Output 4.2.2: Development of a compendium of practices on addressing land-based activities that impact estuaries and address the identified threats to the source to sea management approach (including those that specifically integrate gender and social inclusion)

14. **Component 5: Knowledge management** ensures that the important element of knowledge-management and sharing is applied consistently across all project activities.

Given the importance of generating and sharing knowledge to capture and apply lessons learnt, **Outcome 5.1: Effective knowledge generation and sharing mechanism established and actively used** is the project's dedicated knowledge management outcome through which the learning results of the other outcomes will be consolidated and shared. Knowledge sharing is foreseen through the sharing in international fora of knowledge reports and presentations/ lessons learnt etc. A focus is placed on generating and sharing experiences with the application of the source-to-sea approach in an African basin management context. Importantly, knowledge sharing is not only foreseen at (transboundary) institutional level but also at community level, especially between and with the demonstration project to share best practice and encourage replication of successful approaches. **The Women in Diplomacy Network will be a critical partner in driving the involvement of women into transboundary water management and enhancing their agency and voice in these spaces.** Emphasis will be placed on generating guidance tools for the application of the source-to-sea concept and the WEF nexus application, based on the practical experience made during the implementation of the project. A communication plan will be developed to ensure that there is targeted communication with key stakeholders – the strategy will be supported by a stakeholder engagement strategy that will ensure that the target audience is well defined. The plan will identify actions that need to be taken to ensure there is strategic outreach, awareness raising and dissemination of the project results. Furthermore, **a Knowledge Management and Learning Strategy aimed at improving and enhancing knowledge capture, sharing and learning will be developed during the PPG phase. The strategy will identify potential main target groups for KM and outreach – provide outputs and an indicative timeline. In the development and implementation of the Communication Plan and the KM Plan – issues of social inclusion will be considered both in planning and implementation. In the implementation greater focus will be on ensuring access of information for women and youth to increase awareness.**

The outcome is implemented through the following outputs:

- Output 5.1.1: JWC actively participated in knowledge/experience sharing at regional SADC (e.g., biennial SADC RBO workshop) and international level, including on the IW Learn platform and through participation in the GEF IW-LEARN conferences (1% of budget allocated to support IW Learn activities)
- Output 5.1.2: At least 1 exchange visit with other RBOs and/ or relevant regional institutions carried out to share source-to-sea management experiences.
- Output 5.1.3: Regular peer-to-peer learning and experience exchanges between local stakeholder taking into consideration gender and social inclusion issues, communities (especially those involved in demonstration projects) facilitated.
- Output 5.1.4: **Gender-sensitive Communication strategy developed and implemented and plan and implementation of the Knowledge and Learning Strategy and Plan.**

15. The supporting **Component Project Monitoring and Evaluation**, through its Outcome **Effective programme and project monitoring and evaluation ensured** creates both a long-term programme M&E framework for JWC, and an M&E framework for the project itself. The long-term M&E framework for JWC will strengthen the Commission's ability to deliver larger programmes, especially the SAP that is to be developed under this project. Importantly, both the long-term programme M&E system and the M&E system for the project will include gender-responsive indicators that enable effective gender mainstreaming into

programming and on-the-ground implementation of projects. The outcome is implemented through the following outputs.

1. Gender-responsive programme monitoring and evaluation (M&E) system established within JWC
  2. Project M&E system set-up and quarterly results reporting ongoing
  3. Mid-term and terminal evaluation of the project carried out
16. Overall, the project will create several global environmental benefits. The strengthening of JWC, in conjunction with the practical integration of transboundary natural resources management entities under the conceptual umbrella of the source-to-sea concept establishes for the first time a fully integrated natural resources management regime in the basin. This will ensure more holistic management and contribute to reduced pressures on environmental resources.
17. The basin monitoring system, WIS and information exchange procedures will enable the Basin States to coordinate environmental monitoring and to develop and implement coherent evidence-based approaches to the management of water and other environmental resources in the basin. The project will seek to take advantage of the technologies available like using remote sensing and satellite data to assess and monitor some of the remote areas in the basin. Partnerships with organisations like ESA who are deploying machine learning and artificial intelligence to augment observations will be explored during the PPG phase. Technologies to support citizen science monitoring will also be explored and partnerships built to work with tried and tested technologies that are robust and sustainable. Work has been done in South Africa in this regard working with schools in the Orange-Senqu River Basin and lessons will be learnt from these processes.
18. The project's innovative approach of developing sustainable financing models based on promoting ecosystem health and livelihood opportunities will contribute to ensuring a better balance between environmental and economic interests in water resources development is enhanced. Demonstrating this approach in practice for subsequent replication holds the potential to introduce a shift from the current natural resource exploitation.
19. The project engages institutional stakeholders at transboundary, national, and local levels. Through the demonstration projects local community level stakeholders will be engaged and benefit directly from the intervention. With the focus of the demonstration project on the possibility for replication and building sustainable models the project also holds the potential for initiating creation of sustainable long-term benefits for a much larger number of community level stakeholders.
20. Private sector is building responses to challenges and driving the “Decade of Delivery”. For the Ruvuma River Basin initiatives like the Bonn Challenge (land, forest, and ecosystem restoration targets), the 21 Action Targets from the GBF, reporting against SDG targets, and promoting water stewardship – will be critical to form partnerships with private sector around. Globally, the private sector has demonstrated increasing demand for sustainable outcomes and see the SDGs as a framework for confronting an uncertain future. Several outputs of the project require the active involvement of private sector stakeholders. Private sector stakeholders are actively involved in project preparation and, subsequently policy formulation once the project is under implementation, especially through the basin-wide stakeholder platform to be established. This will build on ongoing engagement between the JWC national government role-players on the one hand, and some private sector stakeholders, especially large-scale agricultural companies, and industrial actors (gas exploration and related activities). Possibilities for private sector involvement in

developing sustainable financing models around demonstration projects will be explored further during the PPG phase. During the PPG there will be a dedicated focus in engaging and developing actions targeted to working with mining companies. Working partnerships with organisations like Nature Metrics, who have done work with extractive industries in southern Africa will be explored to drive innovation. Opportunities for the private sector to support gender equality and foster inclusive approaches, in decision-making processes and resource allocations that can improve women's access, use, and control of resources will be explored.

21. Due to its current limited financial management capacity and an Interim Secretariat not being established yet. An Implementing Partner (IP) will be needed to support the project's execution. Subsequently, it is proposed that GWP-SA will perform as the IUCN IP for this project and execute on behalf of the three member states. The catchment agencies from the member states will be Responsible Parties in the execution of the project. GWP SA has experience in executing GEF projects and embedding staff in the basin to support project implementation. The BUPUSA GEF project that GWP SA is executing on behalf of IUCN will end in December 2024 – and this experience will be transferred Ruvuma GEF which is likely to start in 2025 if approved. to the GWP SA has also fulfilled the requirements of the UN HACT Assessment and the PCAT Assessment. During the PPG phase – and assessment of GWP SA will be conducted to ensure that all is on track to support implementation. The national institutions will act as Responsible Parties and will through a grant mechanism be expected to support implementation of the project. This is expected to build the capacity of the member states in executing project activities and strengthening their involvement in transboundary initiatives.

The proposed Secretariat to start executing donor-funded projects directly without the involvement of a third party as an Executing Agency – there will be need to build a track record. This project will aim to contribute to building that institutional capacity working closely with GWPSA. To ensure implementation of a holistic source-to-sea approach, other Responsible Parties to support the implementation of activities in the coastal zone will be identified and their capacity assessed at the PPG phase. These may include the Nairobi Convention Secretariat, the ministries of environments, fisheries and other relevant regional, national or local institutions. The Project Steering Committee (PSC) will include representatives from Ruvuma member states, JWC Secretariat, protected areas institutions, coastal management institutions (to be identified during project preparation), IUCN and GWPSA. A representation of SADC is also proposed to be part of the PSC (to be confirmed during the Project Preparation phase). The project Management Unit (PMU) is proposed to be hosted in the basin currently there are Focal Points who are sitting in Mtwara (in the Ruvuma Basin and Southern Coast Office) in Tanzania and Cabo Delgado (in the ARA Norte office in Mozambique). During PPG a decision will be taken by the countries as the where the PMU will located. The location for the PMU will take into consideration accessibility and other critical factors that will drive project management.

### **Coordination and Cooperation with Ongoing Initiatives and Project.**

Does the GEF Agency expect to play an execution role on this project?

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

The GEF Agency will not play an execution role

The project will closely coordinate with a forthcoming GIZ initiative supporting the update of the existing basin monograph and joint IWRM plan to ensure the two initiatives are complementary and do not create duplication. It is to be noted that the TDA and SAP will focus on environmental aspects of basin management, thus complementing the water resources planning and development aspects covered in the joint IWRM plan.

56. The project also builds on ongoing government-led activities. With support of the WB a Water Resources Management and Information System and Decision Support System is piloted in three other basins in Tanzania. Integrating these with the Ruvuma basin is important and will be coordinated. Likewise, the project builds on existing and functioning national level stakeholder coordination structures in the basin and national policy frameworks (e.g., for disaster management) that are tailored for basin-specific application through this GEF project.

57. The demonstration projects on water and sanitation supply builds on and complements ongoing water and sanitation related activities in Mozambique, notably the JICA funded POSUAS II (Promotion of Water and Sanitation Sustainability), the Swiss Cooperation funded GOTAS project (Transparent Management for Water, Sanitation and Hygiene), the Water Aid Project, and the Irish Aid funded IRELAND project in Niassa province.

58. For coordination with ongoing and forthcoming GEF-financed projects, the following projects are identified as most relevant:

1. The project will closely coordinate with a forthcoming GIZ initiative supporting the update of the existing basin monograph and joint IWRM plan to ensure the two initiatives are complementary. **As already mentioned SADC has developed a joint workplan with partners supporting the JWC.** It is to be noted that the TDA and SAP will focus on environmental aspects (using a source to sea management approach), thus complementing the water resources planning and development aspects covered in the joint IWRM plan.
2. The project also builds on ongoing government-led activities. With support of the WB a Water Resources Management and Information System and Decision Support System is piloted in three other basins in Tanzania. In Mozambique the World Bank supported similar initiatives. Integrating these in the Ruvuma basin is important and explored during the PPG phase. Likewise, the project builds on existing and functioning national level stakeholder coordination structures in the basin and national policy frameworks that are tailored for basin-specific application through this GEF project.
3. For coordination with ongoing and forthcoming GEF-financed projects, the following projects are identified as most relevant:  
GEF, through the World Bank, has been supporting the strengthening of transboundary and national groundwater management in the SADC countries. The currently ongoing project (the 2nd phase) focuses on strengthening legal, and regulatory frameworks – and providing guidelines, standards, and management tools. The project will work closely with SADC GMI.  
GEF, through UNDP has been investing in the Cubango-Okavango River Basin and the Orange-Senqu River Basin. Support has been provided to development TDA, SAP, and NAPs for each one. Similar investments are being made in the recently approved GEF funded projects in the Limpopo River Basin and the Cunene/Cuvelai through UNDP. There is also a GEF investment, through IUCN, in the Buzi, Pungwe, Save River Basin implementing similar activities leading to the development of an SAP. As already mentioned, GEF is supporting the sustainable management of coastal and marine ecosystems in the Western Indian Ocean.

Investments have also been made by GEF in the Benguela Current Commission which will provide lessons learnt to build on. Mozambique and Tanzania were part of the GEF funded WIO-SAP Project (GEF ID: 4940) which developed several guidelines for mangrove restoration, seagrass restoration, environmental flow assessments that will contribute to delivery of several proposed activities the proposed Ruvuma project. The project also developed a toolkit on climate change vulnerability assessments that can be tested or applied in the basin under this project. Similarly, Mozambique and Tanzania were also part of the SAPPHIRE UNDP-GEF project which developed a regional integrated ecosystem monitoring framework for Water Quality Monitoring Framework and a Regional Framework for Coastal and Marine Water Quality that can support the implementation of a number of activities under the Ruvuma project. GEF has also recently approved a grant for the project preparation of the Incomati and Maputo River Basins (GEF ID 11180) promote integrated source-to-sea management of the Incomati and Maputo River Basins and coastal zones to ensure environmental security and inclusive livelihoods.

At the national level the project builds on past and ongoing GEF funded projects:

**Mozambique** has several GEF funded projects that this proposed work can build on – the project being implemented by the World Bank under GEF 7 (GEF ID:10583) aimed at managing targeted conservation landscape to improve livelihood. This project aligns well with the proposed activities and possible synergies will be identified and explored. Another project is the LDCF funded project on scaling up local adaptation and climate-risk informed planning for resilient livelihoods (GEF ID:10100) being supported by the UNDP. This project is also key and will provide lessons for implementing the proposed interventions. Another relevant project is the GEF 5 project (GEF ID: 5433) that aimed to enhance Mozambique’s capacity to cope with climate change through upscaling farmer adoption of climate smart adaptation technologies. Lessons learned from this project will provide useful information and directions for the planned demonstration projects.

**Malawi:** has the TRANSFORM project (GEF ID: 10777) with UNDP support to reduce the vulnerability of communities surrounding Lake Chilwa to the adverse effects of climate change by strengthening the resilience of livelihoods through Ecosystem-based Adaptation (EbA) and financing of climate-resilient enterprises. This national project is highly relevant for RUVUMA and IUCN will ensure that the lessons learned and experience from the TRANSFORM project will be shared. Other GEF 7 projects being implemented in Malawi that the project will build on and link with to apply lessons for improved community led and climate smart catchment management is the (GEF ID: 10411), sustainable management of landscapes (GEF ID: 10254), another GEF 6 on strengthening capacity for the management of invasive alien species (GEF ID 9539).

**Tanzania:** also has several projects that the project can build and learn from including the GEF 6 project with UNEP (GEF ID: 9524) which aims to strengthen integrated natural resource management and restoration of degraded landscapes for resilient socio-ecological systems in Tanzania, and the GEF 7 project implemented by WWF- US Chapter (GEF ID: 10262) is promoting integrated land and water management, restoration, and sustainable value chains to prevent deforestation in priority landscapes. The FAO through GEF 7 (10364) is also supporting Tanzanian communities to increase resilience to climate change through appropriate technologies and innovative practices. This project will provide good lessons for implementing the proposed conservation-based livelihoods demonstration projects.

At the transboundary level – The three countries have been receiving support from IUCN’s BRIDGE programme to build water cooperation amongst the countries. The SADC Transboundary Water Management Programme implemented by GIZ supports the implementation of the Regional Strategic



Action Plan (RSAP) and it is supporting the review and updating of the Joint Integrated Water Resources Management Strategy for the Rovuma/Ruvuma Watercourse. The SADC TFCA Facility, funded by KfW and implemented by IUCN is also supporting transfrontier conservation works in different parts of the basin across the three countries. This project is going to learn from and apply knowledge from these activities in order to better understand the basin and carry out the demonstration studies.

During the PPG phase a detailed mapping of (then) ongoing initiatives will be carried out to ensure the foundation for active coordination will all relevant ongoing national transboundary activities is laid, and such coordination actively ensured throughout the project implementation period.

## Core Indicators

### Indicator 1 Terrestrial protected areas created or under improved management

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
200000	0	0	0

#### Indicator 1.1 Terrestrial Protected Areas Newly created

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
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#### Indicator 1.2 Terrestrial Protected Areas Under improved Management effectiveness

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
200000	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Niassa	555705344	Protected area with sustainable use of natural resources	100,000.00						
Selous Game Reserve	5005		100,000.00						

### Indicator 2 Marine protected areas created or under improved management

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
700000	0	0	0

### Indicator 2.1 Marine Protected Areas Newly created

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
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### Indicator 2.2 Marine Protected Areas Under improved management effectiveness

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
700000	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Mnazi Bay-Ruvuma Estuary	220235	Protected area with sustainable use of natural resources	700,000.00						

### Indicator 3 Area of land and ecosystems under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
100	0	0	0

#### Indicator 3.1 Area of degraded agricultural lands under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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#### Indicator 3.2 Area of forest and forest land under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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#### Indicator 3.3 Area of natural grass and woodland under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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### Indicator 3.4 Area of wetlands (including estuaries, mangroves) under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
100.00			

### Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
2000	0	0	0

### Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
2,000.00			

### Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

### Type/Name of Third Party Certification

### Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

### Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

### Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

### Documents (Document(s) that justifies the HCVF)

Title

### Indicator 7 Shared water ecosystems under new or improved cooperative management

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem	Ruvuma			
Count	1	0	0	0

**Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Ruvuma	1			

**Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Ruvuma	1			

**Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Ruvuma	3			

**Indicator 7.4 Level of engagement in IWLEARN through participation and delivery of key products(scale 1 to 4; see Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Ruvuma	1			

**Indicator 11 People benefiting from GEF-financed investments**

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
<b>Female</b>	1,000			
<b>Male</b>	1,000			
<b>Total</b>	<b>2,000</b>	<b>0</b>	<b>0</b>	<b>0</b>

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

The project is also implementing a source-to-sea approach meaning that the project will also contribute to the protecting resources in the system. In this regard, the project will:

- Core indicator 1: is the indicative areas of the protected areas covered in the Ruvuma River Basin that the project will contribute to conserve through ensuring water security in a transboundary area. The project will contribute to the management of protected areas indications are 30000km<sup>2</sup> in Niassa Reserves in Northern Mozambique and 10000km<sup>2</sup> in the Selous Reserve and other forest reserves in southern Tanzania – this will be firmed up during the PPG phase.
- Core indicator 2: the indicative marine parks noted is the Mnazi-Quirimbas Marine Park. 7000km<sup>2</sup> are indicated as benefiting from the project – this will be verified during the PPG phase once the nature of the activities is detailed.
- Core indicator 3: the project through providing investments and building partnerships with private sector and other NGOs will support local level demonstration projects focused on the reversal of environmental degradation and building inclusive

livelihoods. The project is looking at promoting and scaling up practices to improve landscape practices. The projects are expected to restore 100ha – once sites for the projects are confirmed numbers will be updated during the PPG phase.

- Core indicator 7: the one shared water ecosystem under improved management being considered in the Ruvuma River Basin
- Core indicator 11: Since the investment project will drive social inclusion this will entail involving women and youth as beneficiaries in these projects. The direct beneficiaries disaggregated by gender are estimated at 1000 men/1000 women these numbers will also be confirmed once the sites in the three countries are identified.
- Core indicator 12 and 13: Indicator 12 will also be defined in the development of proposed sustainable financing mechanisms. The exact nature, scope and location of the demonstration projects need to be determined during the PPG stage. This will allow for accurate determination of target levels for the above core indicators. Indicator 13 will aim to promote a 50%/50% split for women participation in decision-making structures as per SADC Gender Policy (2009) that calls for equal representation

## Risks to Project Preparation and Implementation

Summarize risks that might affect the project preparation and implementation phases and what are the mitigation strategies the project preparation process will undertake to address these (e.g. what alternatives may be considered during project preparation- such as in terms of consultations, role and choice of counterparts, delivery mechanisms, locations in country, flexible design elements, etc.). Identify any of the risks listed below that would call in question the viability of the project during its implementation. Please describe any possible mitigation measures needed. (The risks associated with project design and Theory of Change should be described in the “Project description” section above). The risk rating should reflect the overall risk to project outcomes considering the country setting and ambition of the project. The rating scale is: High, Substantial, Moderate, Low.

Risk Categories	Rating	Comments
Climate	Moderate	The project includes investments in local level demonstration projects, including in the field of agriculture. There is a risk that such investments could be affected by extreme climate events, i.e., severe floods or prolonged droughts. Likewise, investments in small-scale storage and water harvesting infrastructure could be affected by such events. . The IPCC Sixth Assessment Report (AR6) observes increased aridity, agricultural and ecological droughts, increase in meteorological drought and increase in temparture. Currently, there is an observed decrease in mean precipitation in the basin area. With regards to floods there is an observed and projected increase in heavy precipitation and

		pluvial flooding. The AR6 projects an increase in average wind speeds of the cyclones and associated heavy rains – Category 4-5 tropical cyclones.
Environment and Social	Low	Environmental pressure, and as a result social pressure, is rising in the project area, but this is not expected to negatively affect project implementation. To the contrary, during the stakeholder consultations for the PIF there was great support for the proposed interventions and consensus that these interventions will contribute to addressing some of the environmental and social pressures in the basin. The investment projects will be assessed and screened using IUCN ESS tools – for each sight an ESMP will be developed in order to manage any potential impacts by the project.
Political and Governance	Low	The basin countries have a history of coordination and willingness to implement joint management activities. The proposed activities of developing basin-wide frameworks are proposed by the countries themselves and have involved stakeholders from a wide variety of sectors. It is therefore assumed that there is an ongoing willingness to develop and implement basin-wide joint management frameworks and the project will provide the necessary technical support to strengthen these frameworks. There have been some unrests due to political unrests. The unrests caused by insurgency was mainly targeted at oil and gas companies in 2019/20 in Cabo Delgado, in the outskirts (in the coastal areas which are not part of the basin in Mozambique). The project will work closely with the

		<p>government of Mozambique to develop a security plan that will ensure that there is guidance on the placement of staff in the area and put in place measures to safeguard any project interventions in the area.</p>
Macro-economic	Moderate	<p>The project's investment component complements ongoing investments/initiatives from the governments and aims at showcasing avenues for re-directing government and private sector investments towards sustainable approaches (WEFE nexus etc.). Given the ongoing macro-economic pressures caused by Covid and other global crises, it is possible that government spending in the water sector will be reduced or redirected, thereby reducing the replication scope of the investments piloted in the demonstration projects. The basin in Mozambique and Tanzania is earmarked for development due to the discovery of natural gas and in Tanzania development of extensive irrigation infrastructure in the river valleys of Mto Ruvuma and afforestation programmes. Environment Impact Assessments are being conducted for the major projects – and enforcement of the proposed mitigation measures will be critical. Raising awareness through the JWC and broadening engagement will be critical</p>
Strategies and Policies	Low	<p>The governments have concluded an agreement establishing the JWC. This is further embedded in a broader, regional framework set by the Revised SADC Protocol on Shared Watercourses, SADC Water Policy and Strategy, and a SADC Regional Strategic Action Plan (RSAP 5). There are no known national policies that directly</p>

		<p>contradict this regional policy framework, nor the national policy frameworks of other basin States as per Monograph 2011. A legal review of the policies is conducted as part of updating the Monograph – the legal review for the TDA will also look into potential policies and incentives contributing to the environmental problems.</p>
<p>Technical design of project or program</p>	<p>Moderate</p>	<p>The focus of the project’s technical assistance components is on strengthening institutional and management capacity, including intersectoral coordination. The establishment of the proposed transboundary source-to-sea coordination structures requires a willingness from all relevant role-players to engage in such an activity. While this willingness is well-established in terms of water management bodies, the project treads new ground in linking water management and coastal/ marine management entities. The source-to-sea impacts threatening land and freshwater systems and thus the ecosystem health and connectivity that the project is addressing are deteriorating water quality (as evidenced by coal mining pollution reports in Mbinga and Lichinga use of heavy gold panning machinery in the rivers); deforestation due to loss of the miombo woodlands critical for water retention (studies are indicating huge annual losses due to increase demand for land; extreme climate events; introduction of exotic forests (afforestation) increasing water demands; limited knowledge on impact of water insecurity on globally important diversity. It is therefore important to develop a common transboundary shared vision</p>



		<p>with key stakeholders impacting the land and water systems – and increase understanding on the need of having a common framework for a sustainable development framework. While this may require considerable groundwork, it can be assumed that there is a general willingness for such cooperation from relevant sectors, as evidenced by existing transboundary coordination (at sector level). The investment component of the project requires further elaboration during the PPG phase to ensure that the financial sustainability of the business models that the project aims to create is ensured.</p>
<p>Institutional capacity for implementation and sustainability</p>	<p>Moderate</p>	<p>JWC is a nascent organisation with very limited management capacity, largely due to the absence of a standing Secretariat. However, the Commission is built on ongoing cooperation between the basin countries and has the full political backing of both basin States. This project is central to strengthening the implementation and management capacity of the JWC and its Secretariat, notably through component 1. At the regional level the risk of institutional sustainability will be addressed through ensuring that robust systems are setup for the JWC and then develop a financial sustainability strategy that draws in players from economic development sectors operating in the basin to support a common vision around sustainable development and maintaining the ecosystem health of the system whilst ensuring social inclusion. In building the institutional capacity – the project will work with national and local institutions in implementation. This will ensure the</p>

		<p>work is aligned to their plans and there is uptake by these organizations operating in the region. Engagement with private sector will also be critical in enabling business models that can support replication and deepening the approaches. A financial sustainability strategy will also be developed to identify potential funding models that take advantage of the multi-stakeholder approach being promoted.</p>
Fiduciary: Financial Management and Procurement	Low	<p>JWC itself has currently very little capacity to implement a project of this size. However, the financial management and procurement for the project will be carried out by the executing agency (GWP-SA), who have a long-standing, proven record of successful project implementation in the region, including several GEF IW project currently under implementation. GWP-SA, together with the project PMU will ensure that through the project (notably component 1) the financial management and procurement capacity of JWC is strengthened to enable them to implement large-scale projects in the future.</p>
Stakeholder Engagement	Low	<p>There is a long-standing history of stakeholder consultation in the basin, both at national level through government initiatives, as well as through past transboundary projects. Each country has local catchment management agencies in place that engage stakeholders on a regular basis. The consultations for the development of this project have proven that a wide range of stakeholders can be mobilized for project activities.</p>
Other		

Financial Risks for NGI projects		
Overall Risk Rating	Low	

### C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

There are no known country policies that contradict the intended outcomes of the project.

61. The project fully aligns with the GEF 8 programming strategy for international waters. The bulk of project interventions falls under objective 3 ‘enhance water security in shared freshwater ecosystems. The programming directions stress the need of data as a pre-requisite for informed management and decision-making, an aspect that features strongly in the project design, notably in the development of the basin monitoring system, WIS and DSS. Likewise, the conjunctive use of groundwater and surface water is highlighted as a focus of GEF 8 and is considered in the project design in the interventions dealing with groundwater resources mapping. Overall, the project includes numerous elements that are highlighted as priorities in the programming directions, such as

- a) the development of a TDA and SAP,
- b) support to policy/ legal reform (transboundary data exchange procedures, **transboundary water agreement**, groundwater management strategy)
- c) building of management capacity (JWC strengthening, intersectoral management structures, community level management structures)
- d) establishment of **a source to sea management approach**
- e) promotion and practical application of nexus approaches (demonstration projects)
- f) **de-risking innovation through piloting innovative technologies and approaches and establishing sustainable financing mechanisms through engaging with private sector.** (demonstration projects)

62. Through its source-to sea focus, the project also contributes to programming objective 1 ‘accelerate joint action to support a sustainable blue economy’, especially by means of creating multi-stakeholder cooperation frameworks including freshwater, marine and other stakeholders. The project aims to enable one of the newest River Basin Commissions in the SADC to be able to fulfill its mandate. The intention to seek a comprehensive approach and aim at regular institutionalized cooperation between JWC, the Nairobi Convention, as well as national basin and coastal management institutions is innovative. The approach will build on lessons on source-to-sea linkages in the region from ORASECOM and the BCLME as well as emerging experiences such as the ones in the Incomati/ Maputo basins. Furthermore options for nature (conservation based) livelihoods will be explored through the demonstration projects, which will also see the protection and rehabilitation of critical ecosystem services. Again, existing, and emerging experiences from the above-mentioned GEF supported projects in the SADC region will be drawn from to ensure the regional sharing of experiences and lessons learnt.

63. The strengthening of transboundary basin management also contributes to shared SADC regional objectives, notably under the Revised SADC Protocol on Shared Watercourses, the SADC Regional Water Policy and Strategy, as well the Regional Strategic Action Plan (RSAP) 5. Likewise, the strengthening of JWC, improvement of basin monitoring, data generation and sharing for collaborative decision-making also support the Basin States’ efforts for collaborative, and coordinated basin management to avoid and mitigate

impacts resulting from the substantial industrial and agricultural developments the basin is expected to experience in the near to mid-term future.

The project contributes positively to the Kunming-Montreal Global Biodiversity Framework (GBF) to the global targets for urgent to 2030. Through promoting a source-to-sea approach it ensures that the integrity, connectivity, and resilience of ecosystems in the basin, its coastal areas and adjoining marine areas are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050. More specifically the project contributes to the targets as follows:

- Target 1 which focuses on ensuring that all areas are under participatory integrated biodiversity inclusive spatial planning addressing land and sea use change
- It also contributes to Target 2 by ensuring that by 2030 at least 30% of areas of degraded terrestrial, inland water and marine and coastal ecosystems are under effective restoration.
- It also contributes to Target 3 'through supporting conservation and management of ecosystems whilst ensuring sustainable use. – Targets 1, 2 and 3 of the GBF will be reported in the project through Core Indicators 1,2,3, 4 and 5.
- The project contributes to Target 7 through integrating issues of climate change in transboundary water resources aimed at reducing and eliminating invasive species and reducing the rates of introduction. With a focus on reducing pollution risks and the negative impact from all sources by 2030 – this will be reported through Core Indicator 7 in this project.
- The project will contribute to Target 103 through working with communities to promote livelihood projects – this will be reported in this project under Core Indicator 11 and 12
- Through strengthening private sector engagement in transboundary cooperation the project contributes to Target 15 through water stewardship actions.

#### D. POLICY REQUIREMENTS

##### **Gender Equality and Women's Empowerment:**

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

##### **Stakeholder Engagement**

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

##### **Were the following stakeholders consulted during project identification phase:**

Indigenous Peoples and Local Communities: Yes

Civil Society Organizations: Yes

Private Sector: Yes

##### **Provide a brief summary and list of names and dates of consultations**

GWP SA and IUCN working with the national government officials from Tanzania, Mozambique and Malawi consulted on the proposed focus areas that the GEF project should cover in the river basin. The project and proposed activities were formulated and discussed during several physical meetings in February, July and September 2023 with the Joint Water Commission. Furthermore, field visits were conducted in Malawi, Tanzania and Mozambique in August and September 2023 – the aims of the field visits were to engage key stakeholders to discuss and understand the key transboundary issues in the basin and proposed ways to address these. Stakeholders in the field highlighted potential hotspots where interventions will be needed for implementation as part of the project and the identification of additional key stakeholders in the basin to consult further.

More key stakeholders in the basin will be identified through a comprehensive stakeholder mapping to be conducted during the project preparation at the PPG phase looking at the different key sectors and players within the basin. The stakeholder mapping will assess the interest and power dynamics regarding transboundary management of natural resources.

The stakeholders will include the following groupings as a minimum:

- Agriculture: Commercial, small-scale farmer associations and subsistence farmers throughout the basin (e.g. Namitundu Estate in Malawi, Union of Peasants and Associations and Africa Century Matama in Mozambique)
- Industry: private sector companies and cooperatives working in mining, fisheries and other sectors will be identified during the PPG phase for further engagement. Private sector operators in the basin will also be identified to develop business models to enhance initiatives that promote ecosystem health and social inclusion. Companies like OLAM having been promoting water stewardship in Songea area where coffee farming is taking place. Other tourism operators like LUWIRE in Niassa Province on the Lugenda River have also been support community development projects. ETG – the agriculture company that focuses on uplifting communities has also been working in the area.
- Tourism operators – operating in the lake Malawi area, Mnazi Bay-Ruvuma Estuary Marine Park and in the coastal areas in Mtwara, Tanzania. This also includes private operators like lodges and hotels.
- Civil Society Organisations supporting WASH, water resources management, management of Parks and coastal and marine ecosystems (e.g. international players, WaterAid, ActionAid, Care International, local NGOs etc.)
- Institutions working in the Protected Areas (Pas) – Forest Management Agencies, Wildlife Management Areas, TFCA management structures (through the regional administration offices), WWF, Wildlife Conservation Society, Fauna and Flora International and Frankfurt Zoological Society (FZS) are key players in the PAS
- Associations working in coastal marine ecosystems – Chuita Association, Beach Village Committees
- The lead counterparty agencies (to be confirmed during the project preparation phase) in each country will be the catchment institutions established to support management of resources in each country working closely with the Transboundary Institutions (e.g. Kamwaza Water Users Association, Village Natural Resources Management Committee, Community Water Security groups)

- Mozambique – ARA Norte is the agency responsible for the river basins in northern Mozambique (including the Ruvuma Basin) and has stakeholder platforms through River Basin Committees which bring in a range of players in the basins and works with a range of private sector stakeholders.
- Rovuma Basin Management Division – DGBR is responsible for the operational management of the water resources of the basin
- Women Groups: As part of the PPG the identification of key women groups and cooperatives within the basin will be conducted

The table overleaf provides an overview of the stakeholders consulted.

Country	Name of Delegate	Institution	Date for consultation
Republic of Tanzania	Pamella Temu	Ministry of Water	July 2023 August 2023 September 2023
	Dr. John Tenga	Tanzania Agriculture Research Institute (TARI)	August 2023
	Andrea Mnonjela	Chairman Water User Association Ndanda	August 2023
	Juma Hashim Mndeme	National Irrigation Commission – Mtwara	August 2023
	Andreson Besisila	Tanzania Forest Agency	August 2023
	Magreth Likonda	Newala District Council	August 2023
	Ritha Njau	Tunduru District Council	August 2023
	Ronald Mpanda	Regional Secretariat Mtwara	August 2023
	Rashidi Luambano	Geologist (J&M Industries)	August 2023
	Tawakal Rwahila	TanESCO (Mtwara)	August 2023
	Rashid Mayove	Chairman Water User Association Mitema	August 2023
	Godwell Kimaro	RUWASA (Rural Water Supply and Sanitation) Mtwara	August 2023
	Hafidhi Njaule		August 2023
	Magoni Mambura	National Environment Management Council	August 2023
	Mwanamkuu Mwanyika	Ministry of Water	July 2023 August 2023 September 2023
	John Nchimbi	Zonal Water Laboratory	August 2023
	Mariam Mbanga	Ministry of Water	July 2023

			September 2023
	Jumanne Mpemba	Ministry of Water	July 2023
	Eng Glades Rugamkamu	Ruvuma and Southern Coast Basin Water Board	August 2023
	Bonanje Ngumu		August 2023
	Boniface Msema		August 2023
	Galus Sapi		August 2023
	Robert Eliah Kihyo		August 2023
	Dickson Maganga		August 2023
	Nile Kiravu		August 2023
	Jaribu Liana		August 2023
	Ibrahim Manyela		August 2023
	Mbaraka Mohamed		August 2023
	Yusufu Said		August 2023
	Adija Mrope		August 2023
	Mohamedi Mindosi		August 2023
	Imani Semvua		August 2023
	Ibrahim Wanchara		August 2023
	Sudi Mpemba	August 2023	
	John Ngowi	Vice Chairman WUA Ndanda	August 2023
	Victor Mgonde	Tanzania Forest Services (TFS)	August 2023
	Fr. Titus Nkane	Ndanda Abbey (Masasi)	August 2023
SADC Secretariat	Dr Patrice Kabeya	Senior Programme Officer – SADC Water Division	July 2023
	Dr Dumisani Mndzebele	Programme Officer – SADC Water Division	July 2023 August 2023
GIZ	Ms Joanna Fatch	Technical Advisor	July 2023 September 2023
People's Republic of Mozambique	Mr. Bernabé André Chitunga	Head of the Housing, Water and Sanitation Department	August 2023
	Mr. Custódio Rafail	Technician - Northern Region Water Department (AdRN, Lichinga) - Mozambique	August 2023
	Tomas Benjamin	Secretariate Artisanal Miners Association	September 2023
	Ms. Rahima Jamadina	Head of the Administration and Finance Department - Northern Region Water Department (AdRN, Lichinga)	September 2023

	Mr Shiraz Oman	Director - Africa Century Matama - Mozambique	September 2023
	Mr Messais Macie	Director OF Water Resources Management – MOPHRH/DNGRH	September 2023
	Ms Fotine-Mponda Ana Isabel	MOPHRH/DNGRH	July 2023 September 2023
	Omar Carlitos	Ara Notre	July 2023 September 2023
	Manuel Ornila	MOPHRH/ DNGRH	September 2023
	Osvaldo Nido	MOPHRH/ DNGRH	July 2023 September 2023
	Sadique Omar	UCA - President of UCA	August 2023
	Paulino Imed	UCA - Coordinator	August 2023
	Rogério Emilio	UCA - Monitoring and evaluation officer	August 2023
	Oliveira Paulino	UCA - Programme Officer	August 2023
	Mebuana Oche	UCA - Field Technician	August 2023
	Eva Augusto	UCA - Lawyer	August 2023
	Issufo Omar	Associations Ncudjú (Chigumula) - President of the Association	August 2023
	Alifa Amido	Associations Ncudjú (Chigumula) - Vice President of the Association	August 2023
	Aide Amado	Associação 1º de Maio de Nahossa - President	August 2023
	Siade Amado	Associação 1º de Maio de Nahossa - Vice president	August 2023
	Raima Jamaldine	AdRN - Head of the Administration Department	August 2023
	Orcieta Cau	AdRN – Lab Technician	August 2023
	Bonifácio Libobo	AdRN - Locumue Dam Guard (catchment)	August 2023
	Calunga Ali	Lupilichi Artisanal Mining Association - Head of Lupelichi Locality	August 2023
	João Jaime Aquimo	Lupilichi Artisanal Mining Association - Head of the Lupelichi Town Secretariat	August 2023
	Bejami Nhoni	Lupilichi Artisanal Mining Association - Secretary for the Organization of the Patido Frelino in the Locality of Lupelichi	August 2023
	Mário Manuel	Lupilichi Artisanal Mining Association - 2nd Tier Community Leader (Nduna)	August 2023
	Xavier Jonasse	Lupilichi Artisanal Mining Association - Chief of the Police	August 2023
Republic of Malawi	Kamtukale Sydney	Ministry of Water and Sanitation	July 2023 September 2023



Solomon Kalima	Chief Hydrologist - Ministry of Water and Sanitation	July 2023 August 2023 September 2023
James Chitete	Ministry of Water and Sanitation	July 2023 September 2023
Mbemba Chikondi	Ministry of Water and Sanitation	September 2023
Phiri Ernest	LTCS	September 2023
Chiumia James	LTCS	September 2023
Bright Benes	LTCS	September 2023
Wilson Phiri	Senior Chief	August 2023
Emmanuel Akimm	Group Village Head man (GVH) Chimanda	August 2023
Joseph Wailesi	Group Village Head Moro	August 2023
Magret Makwinja	Group Village Head Chigomile	August 2023
Mailosi Dandawile	Group Village Head Nteuka	August 2023
Sinoya Monela	Group Village Head Saleya	August 2023
Immulani Jackson	Group Village Head Dinjie	August 2023
Julliet Sapanga	Area Development committee (ADC)	August 2023
Dafter Meleka	Area Development committee	August 2023
Mathias Mainala	Association	August 2023
Rojasi Balakasi	BVC	August 2023
Davie Tamu	Department of Fisheries	August 2023
Humphrey Chikaenda	Department of Water	August 2023
Yusufu Makiyi	Area Civil protection committee (ACPC)	August 2023
Evance Thomasi	Community Based Organisations	August 2023
Isaac Makondetsa	Forestry Department	August 2023
Agnes Mustafa	Chair ADC	August 2023
Latifa Wessi	Vice Chair ADC	August 2023
Tambula Pensulo	Chair, Village development Committee (VDC)	August 2023
Amina Ibrahim	Area Civil protection committee	August 2023
Adamu Ngaunje	Village Development Committee	August 2023
Oweni Break	Village Development Committee	August 2023
DM Bulla	Police	August 2023
Lonely Mlosola	Area Civil protection committee	August 2023
Mkhwanda Abasi	Area Civil protection committee	August 2023
Samiat Kalonga	Village Development Committee	August 2023

	Ethel Harawa	Area Civil protection committee	August 2023
	Elias Mwale	River gauging station	August 2023
	Christopher Kaisi	Namwera ADC	August 2023
	Kassim Whison	Area Civil protection committee	August 2023
	Wisiki Kimu	Area Development Committee (ADC)	August 2023
	Saujia Silaju	Area Civil protection committee	August 2023
	Saidi M'madi	Area Civil protection committee	August 2023
	George Martin	Area Civil protection committee	August 2023
	Adam Amiki	Area Civil protection committee	August 2023
	Sophia Austin	Village Development Committee	August 2023
	Barton Saidi	Area Civil protection committee- Social Welfare	August 2023
	Mustafa Pemba	Area Civil protection committee	August 2023
	Frank Masoambeta	Area Civil protection committee	August 2023
	Hanifu Hassan	Village Development Committee	August 2023
	Wadi Saimon	Village Development Committee	August 2023
	Musa Chimbanga	Village Development Committee	August 2023
	Geoffrey Perekamoyo	Ministry of water and sanitation	August 2023
	Chilungamo Banda	Ministry of Water	August 2023
Regional	Davison Saruchera	IUCN	February 2023 July 2023
	Cebolenkosi Zuma	IUCN	February 2023 July 2023 September 2023
	Cleophes Mkuyu	IUCN	July 2023
	Fadhiti Njilima	IUCN	July 2023
	Andrew Takawira	GWPSA	February 2023 July 2023
	Shamiso Kumbirai	GWPSA	February 2023 July 2023
	Annah Ndeketeya	GWPSA	February 2023 July 2023

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

### Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

### Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

## E. OTHER REQUIREMENTS

### Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

## ANNEX A: FINANCING TABLES

### GEF Financing Table

#### Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
IUCN	GET	Regional	International Waters	International Waters: IW-3	Grant	6,122,018.00	550,982.00	6,673,000.00
IUCN	GET	Regional	International Waters	International Waters: IW-1	Grant	1,000,000.00	90,000.00	1,090,000.00
<b>Total GEF Resources (\$)</b>						<b>7,122,018.00</b>	<b>640,982.00</b>	<b>7,763,000.00</b>

### Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount (\$)

200000

PPG Agency Fee (\$)

18000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non- Grant	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
IUCN	GET	Regional	International Waters	International Waters: IW-3	Grant	171,918.00	15,473.00	187,391.00
IUCN	GET	Regional	International Waters	International Waters: IW-1	Grant	28,082.00	2,527.00	30,609.00
<b>Total PPG Amount (\$)</b>						<b>200,000.00</b>	<b>18,000.00</b>	<b>218,000.00</b>

Please provide justification

### Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
<b>Total GEF Resources</b>					<b>0.00</b>

### Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
IW-3	GET	6,122,018.00	45365000
IW-1-1	GET	1,000,000.00	3000000
<b>Total Project Cost</b>		<b>7,122,018.00</b>	<b>48,365,000.00</b>

### Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Government of Malawi	Grant	Investment mobilized	500000

Recipient Country Government	Government of Mozambique	Grant	Investment mobilized	1000000
Recipient Country Government	Government of the United Republic of Tanzania	Grant	Investment mobilized	870000
Donor Agency	WB (Malawi)	Grant	Investment mobilized	25000000
Donor Agency	DGIS (IUCN-MozWater)	Grant	Investment mobilized	15000000
Donor Agency	SDC (IUCN-BRIDGE)	Grant	Investment mobilized	1000000
Donor Agency	GIZ (SADC TWM)	Grant	Investment mobilized	270000
Donor Agency	KfW (SADC-IUCN TfCA Facility)	Grant	Investment mobilized	1000000
Others	Global Water Partnership Southern Africa	In-kind	Recurrent expenditures	200000
Others	SADC-WaterNet	In-kind	Recurrent expenditures	150000
Donor Agency	CIWA-SADC	Grant	Investment mobilized	3375000
<b>Total Co-financing</b>				<b>48,365,000.00</b>

Describe how any "Investment Mobilized" was identified

The Joint Water Commission for Ruvuma with support from SADC, GIZ, IUCN and GWP SA organized consultation meetings and field visits to engage with different stakeholders to discuss the PIF and the project concept. During the consultations, stakeholders with investments mobilized under the co-financing table above shared ongoing and upcoming projects with synergies to the proposed components of this project. Co-financing amounts were calculated based on the project's timeframe and time co-financiers' staff would spend on supporting this project. The World Bank through the IDA window is supporting projects in Malawi – currently the Malawi Watershed Services Improvement which is covering areas around the Lake Chiuta and the Regional Climate Resilient Programme which is proposed to be implemented from 2024-2029. In Mozambique IUCN is working with the Government to implement a project funded by DGIS to support IWRM actions. At the transboundary level support from SADC through the Transboundary Water Management programme funded by BMZ and implemented by GIZ is supporting activities updating the Monograph study. The SADC TFCA Facility implemented by IUCN and funded by KfW is playing a critical role in supporting activities in the protected areas in the basin.

## ANNEX B: ENDORSEMENTS

### GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
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GEF Agency Coordinator	Sebastien Delahaye	10/18/2023	Davison Saruchera		Davison.Saruchera@iucn.org
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**Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):**

Name	Position	Ministry	Date (MM/DD/YYYY)
Shamiso N Banda	Deputy Director for Environmental Affairs and GEF Operational Focal Point	Environmental Affairs Department, Government of Malawi	10/3/2023
Eduardo Baixo	Head of Department and GEF OFP	Ministry of Land and Environment, Government of Mozambique	7/20/2023
Kemilembe S Mutasa	GEF Operational Focal Point	Vice Presidents Office, Government of Tanzania	10/12/2023
Eduardo Baixo	Head of Department and GEF OFP	Ministry of Land and Environment, Government of Mozambique	7/20/2023
Kemilembe S Mutasa	GEF Operational Focal Point	Vice Presidents Office, Government of Tanzania	10/12/2023

**ANNEX C: PROJECT LOCATION**

**Please provide geo-referenced information and map where the project interventions will take place**

The Ruvuma River Basin is located in sub-Saharan Africa in the range of 10° to 16° latitude and 34-41° longitude. The river forms the border between Mozambique and Tanzania with the basin lying primarily in those two countries and a small portion in Malawi.

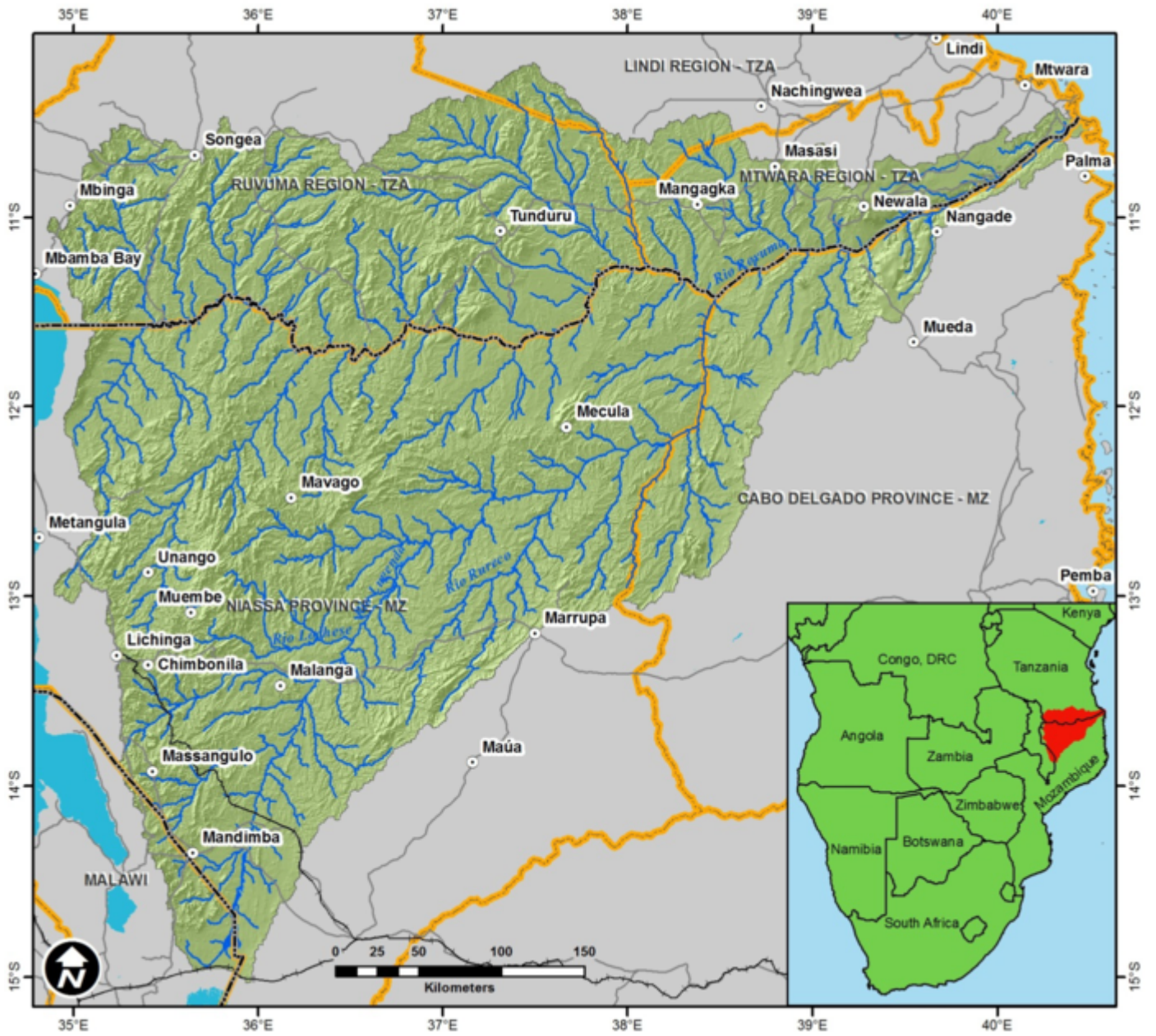


Figure 1: the ruvuma river basin map



Figure 2: the selous niassa ecosystem  
(uploaded in the Road Map section)

Figure 3: mnazi bay-ruvuma estuary

**ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING**

**(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.**

Title

Ruvuma River Basin\_Preliminary Screening\_MJ

**ANNEX E: RIO MARKERS**

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	Significant Objective 1	Significant Objective 1	No Contribution 0

**ANNEX F: TAXONOMY WORKSHEET**

Level 1	Level 2	Level 3	Level 4
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Influencing Models	Transform policy and regulatory environments; Strengthen institutional capacity and decision-making;	Convene multi-stakeholder alliances;	Demonstrate innovative approaches; Deploy innovative financial instruments
Stakeholders	Beneficiaries, Local communities	Private Sector	Civil Society
Capacity, Knowledge and Research	Capacity development, enabling activities	Knowledge generation and exchange, learning	Targeted research
Gender Equality	Gender mainstreaming		
Focal Area/Theme	International Waters		