

Enhanced Water Security and Community Resilience in the Adjacent Cuvelai and Kunene Transboundary River Basins

Part I: Project Information

GEF ID

10565

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

☐ CBIT

☐ NGI

Project Title

Enhanced Water Security and Community Resilience in the Adjacent Cuvelai and Kunene Transboundary River Basins

Countries

Regional, Angola, Namibia

Agency(ies)

UNDP

Other Executing Partner(s)

TBD

Executing Partner Type

Others

GEF Focal Area

International Waters

Taxonomy

Influencing models, Transform policy and regulatory environments, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Stakeholders, Local Communities, Civil Society, Community Based Organization, Non-Governmental Organization, Academia, Indigenous Peoples, Type of Engagement, Information Dissemination, Partnership, Participation, Consultation, Private Sector, Individuals/Entrepreneurs, Large corporations, SMEs, Beneficiaries, Communications, Awareness Raising, International Waters, Focal Areas, Transboundary Diagnostic Analysis, Pollution, Nutrient pollution from all sectors except wastewater, Nutrient pollution from Wastewater, Freshwater, River Basin, Aquifer, Learning, Gender Equality, Gender Mainstreaming, Women groups, Sex-disaggregated indicators, Gender-sensitive indicators, Gender results areas, Access and control over natural resources, Capacity Development, Participation and leadership, Access to benefits and services, Capacity, Knowledge and Research, Knowledge Generation, Knowledge Exchange, Enabling Activities, Adaptive management, Theory of change, Indicators to measure change, Biomes, Biodiversity, Wetlands, Rivers, Behavior change, Knowledge Generation and Exchange

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

66 In Months

Agency Fee(\$)

1,005,110.00

Submission Date

9/28/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-3-5	GET	1,352,500.00	2,821,794.00
IW-3-6	GET	7,190,390.00	17,974,006.00
IW-3-7	GET	2,625,000.00	49,946,380.00
Total Project Cost (\$)		11,167,890.00	70,742,180.00

B. Indicative Project description summary

Project Objective

Project Objective: To strengthen the water security and resilient livelihoods of the populations in the adjacent Kunene and Cuvelai river basins through improved transboundary and conjunctive water resources management

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Strengthening the transboundary and conjunctive water resources management in the Cuvelai River basin	Technical Assistance	Outcome 1: Two countries committed to the joint management of the transboundary Cuvelai River basin with a focus on the improved resilient community livelihoods, based on the best available science and knowledge	<p>1.1 Groundwater quality and availability assessed in both countries by Month 36</p> <p>1.2 Operational water resources model for quantity and flood routing/mapping covering the entire basin by Month 24</p> <p>1.3 Revised TDA (existing rapid assessments^[1] (equivalent to preliminary TDA) updated, including the Causal Chain analyses (CCA), and emphasis on conjunctive ground/surface water management) by Month 36</p> <p>1.4 Operational (development and testing complete) real-time transboundary flood early warning system by Month 36</p> <p>1.5 The long-term Cuvelai IWRM Plan (2020-2039) endorsed at the ministerial level; National Action Plans</p>	GET	3,000,000.00	11,937,121.00

(NAPs), the 2nd 5-year IWRM Plan and Investment Plan (2025-2029) developed (updated (including an investment plan) and National Action Plans (NAPs) developed. Roundtable with potential investors and partners organized, all by Month 62.

[1] Supported by GIZ, a rapid assessment was carried out by Hatfield Consultants (2017), Scoping Study for enhancement of transboundary water resources management of the Cuvelai River basin. This study identified several critical knowledge gaps to be filled.

2. Strengthening the transboundary water resources management with future development scenario analysis in the Kunene River basin	Technical Assistance	Outcome 2: Two countries committed for the joint management and sustainable development of the transboundary Kunene river basin, based on the best available science and knowledge	<p>2.1 Ecological water requirements at +/- 10 key locations along the river system are investigated and established by Month 28.</p> <p>2.2 Future water resources development scenario analyses for planning and establishment of DSS (including linked hydromet) for operations management completed by Month 18</p> <p>2.3 TDA produced (including the future development scenario analysis and causal chain analysis) by Month 36.</p>	GET	3,150,000.00	8,646,623.00
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2.4 A long-term IWRM Plan (2025-2040) and 2 NAPs^[1] negotiated and endorsed at the ministerial level by Month 62.

2.5 5-year investment plan developed and a roundtable with potential investors and partners (aimed at resource mobilization for implementation of the IWRM Plan) held by Month 63.

^[1] Countries requested one SAP be developed for Cuvelai and another for Kunene. Whether only one NAP will be developed for each country (i.e. one NAP covering both Cuvelai and Kunene basins in each country) or one NAP per country per basin (i.e. 4 NAPs in total) will be discussed and decided during the project development phase.

3. Strengthening the governance of the Cuvelai and Kunene River Basins to foster joint management by the two countries in the most cost-effective manner	Technical Assistance	Outcome 3: Intergovernmental institutional structure set up in a financially sustainable manner to foster joint management of the Cuvelai and Kunene basins by the two countries	3.1 Transboundary governance structures developed and functioning <ul style="list-style-type: none"> • Cuvelai Watercourse Commission (CUVECOM) capacitated by Month 36 and sustainable by Month 60 • Permanent Joint Technical Commission (PJTC) transformed into Kunene Commission by Month 24, capacitated and sustainable (by Month 60) 	GET	1,400,000.00	3,308,700.00
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3.2 Joint Secretariat for the CUVECOM and Kunene Commission formed and strengthened with:

- the establishment of the Operational and Financial Management Structure (Accounting Systems, Procurement Systems, Financial Management Systems, HR Policies & Manuals, Host Countr Agreement, etc.) by Month 18
- Institutional Functional Analysis for CUVECOM and Kunene Commission to suggest a sustainable structure for the Joint Secretariat completed by Month 12
- an adequate internet connection and a suite of virtual tools and digital solutions that allow the Secretariat in Namibia and its satellite office in Angola fully capable of remote conferencing, regular communication and document sharing with Commissioners and focal ministries in Luanda and Windhoek to work together remotely even without face-to-face consultations are all operational by Month 6. .
- Costed Sustainability Plan for the Joint Secretariat developed for approval by Month 22

3.3 Assessment of national legislation, policies, strategies and plans and assessment of transboundary harmonization needs

- Existing and planned national legislation, policies, strategies, plans assessed, and issues/gaps identified,

strengthening options identified and proposals made in a report to CUVECOM/PJTC by Month 24

- Prioritized proposals for harmonization of legislation, policies, strategies and plans as necessary provided in a report to CUVECOM/PJTC by Month 24.

3.4 Information Management Systems established by Month 12

3.5 Effective and productive cooperation between universities and with CUVECOM and PJTC/Kunene Commission

- Active cooperation between Namibian and Angolan Universities by Month 6.
- Internship programs at the joint secretariat established by Month 6
- Implement studies/projects and support to CUVECOM/Kunene Commission and secretariats by Month 6.

3.6 Gender equality and women empowerment efforts mainstreamed into all CUVECOM and Kunene Commission policies and practices through the development and implementation of the Gender Strategy by Month 36 (achievement summarized in a report to CUVECOM/PJTC (month 38)

Comp 4: Strengthening institutional, technical and operational capacity in Angola to sustainably develop and manage the sub-region's water tower located in southern Angola	Technical Assistance	Outcome 4: Capacity in water resources and environmental management in Angola strengthened	<p>4.1 Ecosystem-based approach to protect water towers in southern Angola (through awareness raising & strengthened institutional capacity) successfully promoted</p> <ul style="list-style-type: none"> • The Ondjiva (Angola) satellite office of CuveCOM is serving as an effective hub connecting the relevant provincial and national institutions in Angola to the management planning and practices of the two basins (through capacity and resources strengthening) by Month 12. . • Close involvement of and coordination with relevant provincial offices to promote ecosystem-based approaches to water tower protection achieved by Month 36 • In GABHIC, (Office for the management of the Cunene^[1], Cubango and Cuvelai transboundary river basins) by Month 18 • Inter-sectoral coordination across ministries in charge of water, energy, agriculture, land, and rural development for sustainable development of water resources at both national and provincial levels (linking to 1.1, 1.2, 2.1, 2.2) strengthened with regular meetings in place by Month 24. • Ondjiva satellite office and key relevant offices (e.g. GABHIC, provincial offices) capacitated for remote conferencing, regular online 	GET	1,806,086.00	13,950,000.00
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communications, and sharing documents to work together remotely (operational by Month 9).

4.2. Technical capacity strengthened through:

- training of at least 3 participants from each country) in water resources modelling and GIS in the Cunene basin aimed at supporting scenario analysis (esp in Comp 2)
- training of at least 2 participants from each country) in flood risk mapping and flood management in the Cuvelai basin (in support of Comp 1)
- training of at least 4 participants from each country) in hydrological monitoring (quantity and quality) in both basins

4.3 Data collection and analysis capacity strengthened through:

- Provision of equipment for climate and hydrological monitoring (+/- 8 river stations & 10 climate stations)
- Provision of equipment for water quality sampling and analysis (4 field kits per country and targeted support for laboratories (to be determined)
- Provision of software (licenses) for water resource and flood line modelling (min of 2 licences per country)

4.4 Economic Valuation of the ecosystem goods and services provided by the Angolan Highlands ecosystem (presented in report by Month 36)

[1] Under Component 4, all work is in Angola; thus, the Kunene River is addressed as “Cunene”, the name used in Angola.

Comp 5: Enhancing the community participation in IWRM to build resilience in their livelihoods	Technical Assistance	Outcome 5: Livelihoods enhanced and community resilience improved through community-driven activities	<p>5.1 Community-driven interventions to improve their resilience and livelihoods identified and implemented that are in line with the implementation of the IWRM Plans for CuveCOM and Kunene PJTC, in close coordination and planning with local authorities/line ministries.</p> <p>e.g (precise interventions to be decided with communities).</p> <ul style="list-style-type: none"> • Water (rainwater and/or flood water) harvesting • Community-based Aquaculture • Conservation agriculture • Livelihood-based watershed management (including Community-based SLM/SFM) <p>(At least 10 pilot demonstration sites set up (5 in each country)</p> <p>5.2 Capacity strengthened in the Secretariat to ensure the sustainability of basin community engagement and</p>	GET	880,000.00	27,761,783.00
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community-driven activities to implement the IWRM Plan (linking to Comp 3) (At least 2 officers from each country heavily involved in these activities)

5.3 Piloting of flood early warning system for communities in selected hotspot settlements (linking to 1.4) with the system operational for at least 4 hotspots basinwide.

Comp 6: Outreach and Knowledge Management for replication, upscaling and stakeholder engagement	Technical Assistance	Outcome 6: Stakeholder engagement strengthened through targeted communication and Replication and upscaling supported through exchange of knowledge, best practices and lessons learned	<p>6.1 Stakeholder Engagement Strategy and Communication Strategy developed (based on the Stakeholder Engagement Plan developed during PPG) by Month 6. SESP strengthened, as required by Month 9.</p> <p>6.2. Targeted policy briefs and communication products produced</p> <ul style="list-style-type: none"> • Policy Briefs produced to connect science to management and policy discussions (one by Month 12, one by Month 24) • Communication materials developed for targeted audience via various media, in local languages (significant new material every month as from Month 3) <p>6.3 Exchanges with other RBOs and relevant regional institutions, in particular with RBOs in SADC region, SADC Groundwater Institute, and other</p>	GET	400,000.00	186,000.00
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TB river basins with headwaters in Angola. Communications with all parties up and running by Month 12.

6.4 Active contribution to the learning and knowledge sharing activities and events organized by the GEF IW:LEARN, including the GEF IWC (at least 1% of the project budget)

6.5 Timely Project M&E to inform adaptive management for successful delivery of project results, including MTR and TE. System in place by Month 3 with monthly updates

	Sub Total (\$)	10,636,086.00	65,790,227.00
Project Management Cost (PMC)			
	GET	531,804.00	4,951,953.00
	Sub Total(\$)	531,804.00	4,951,953.00
	Total Project Cost(\$)	11,167,890.00	70,742,180.00

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Beneficiaries	Permanent Joint Technical Committee for the Kunene River Basin (PJTC)	In-kind	Recurrent expenditures	200,000.00
Beneficiaries	CUVECOM	In-kind	Recurrent expenditures	550,000.00
Recipient Country Government	Angola	In-kind	Recurrent expenditures	7,030,109.00
Recipient Country Government	Ministry of Agriculture and Water Affairs, Namibia	In-kind	Recurrent expenditures	6,015,691.00
Recipient Country Government	Ministry of Environment and Tourism, Namibia	Grant	Recurrent expenditures	6,750,000.00
Donor Agency	KfW	Grant	Investment mobilized	2,345,000.00
Donor Agency	World Bank	Grant	Investment mobilized	15,000,000.00
Private Sector	Toyota Tsusho Corporation	Grant	Investment mobilized	30,000,000.00
Donor Agency	NDF	Grant	Investment mobilized	2,851,380.00
Total Project Cost(\$)				70,742,180.00

Describe how any "Investment Mobilized" was identified

The following gives a brief description of the investment mobilized co-financing included in the table above. They are indicative at this stage and will be explored further and confirmed during the project development phase. • KfW of Euro 2.1 million funding for feasibility study into replacement of existing Olushandja-Oshakati canal (transferring water from Kunene-Cuvelai) with a pipeline, in order to reduce evaporation and damage (from cross-drainage flooding and vandalism

• Nordic Development Fund (NDF) of Euro 2.555 million for a biogas plant in Ondangwa that will provide green electricity to the national grid. Sewage water will be combined with local plant biomass to reduce waste, generate electricity and produce fertilizer • World bank Funding for Drought resilience and Water Security focussed on Governance and Institutional Strengthening for the reliability of water resources. USD 15 million is the estimated allocation for the three provinces within the basins • The Toyota Tsusho Corporation is providing major financial support for the “Mitigation of the Effects of Drought in the Southern Region of Angola” project. They will finance groundwater development, pilot water supply systems and water treatment projects in Cunene province.

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Regional	International Waters	International Waters	11,167,890	1,005,110	12,173,000.00
Total GEF Resources(\$)					11,167,890.00	1,005,110.00	12,173,000.00

E. Project Preparation Grant (PPG)
PPG Required



PPG Amount (\$)				PPG Agency Fee (\$)			
300,000				27,000			
Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Regional	International Waters	International Waters	300,000	27,000	327,000.00
Total Project Costs(\$)					300,000.00	27,000.00	327,000.00

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
19800.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
19,800.00			

Indicator 3.2 Area of Forest and Forest Land restored

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

Indicator 3.3 Area of natural grass and shrublands restored

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

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

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

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)
19800.00	0.00	0.00	0.00

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)

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

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)
19,800.00			

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

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

Documents (Please upload document(s) that justifies the HCVF)



Title	Submitted

Indicator 7 Number of shared water ecosystems (fresh or marine) 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	Cuvelai/Etosha, Kunene			
Count	2	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)

Cuvelai/Etoshia	1	
Kunene	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)
Cuvelai/Etoshia	3			
Kunene	1			

Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministral 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)
Cuvelai/Etoshia	1			
Kunene	1			

Indicator 7.4 Level of engagement in IWLEARN throgth 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)	
Cuvelai/Etosha	1				
Kunene	1				

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	5,500			
Male	5,500			
Total	11000	0	0	0

Part II. Project Justification

1a. Project Description

1a. *Project Description*. Briefly describe:

Basin Context:

Introduction

The Kunene and Cuvelai river basins are two adjacent river basins shared by Angola and Namibia. As can be seen from the map in Annex A, they lie in south-west and south-central Angola and north-west and north-central Namibia. While the characteristics of the two river systems are very different, both flow from Angola to Namibia. Taking its source on the Angolan water tower that also supports the Cubango-Okavango River, the Kunene River is one of the few perennial rivers in the region, while the Cuvelai is ephemeral throughout almost of its length.

A hydrological linkage between the two basins has long been a subject of discussion. Surveys in the 1920s and 30s seemed to indicate that there was no linkage, but improved modelling using the recently released digital surface model from the Advanced Land Observing Satellite (ALOS) complimented by ground-truthing confirms a hydrological link between the two catchments, which supports transient resources fluxes, particularly aquatic life between the two systems. It has been indicated (Hango, 2017) that there a number of sites along the Kunene River where the Kunene and Cuvelai channels are connected or lie side by side without a pronounced topographic barrier. Corroborative results for this linkage emerged from fish migrating upstream of the Kunene tributaries draining from the indistinct watershed zone. In reaching the watershed, characterized by flat terrain and depressions, fish escape into the Cuvelai drainage system and migrate downstream.

Despite the hydrological connection, it is important to stress that the two basins are very different in terms of physical, socio-economic and social characteristics. It could be argued that all that they have in common are the facts that they are shared by the same countries and have a (very limited) hydrological connection under extreme hydrological circumstances. So, while there is a need to build the knowledge bases for each basin and content (need for a TDA and IWRM plan) seem similar, The work to be carried out in carrying out transboundary diagnostics analyses will be very different in each basin and while the development of IWRM plans will have to pay serious attention to inter-basin transfers and associated conjunctive use strategies, much of the planning process will look towards designing and implementing solutions that are very different between the two basins. .

In the central-southern Angola found the area from which four transboundary rivers of significance in the southern Africa originate: Cubango-Okavango River, Cuvelai River, Kunene River and Zambezi River. In the context of climate change, the water resources from this area has a significant importance for the much drier southern African region, which is expected to be even drier with climate change. Much of the area – Angolan water tower - falls outside of national park boundaries. The awareness of the ecosystem importance of this area, especially its importance in the transboundary context to the downstream states, is currently low. Given the strong socio-economic pressure in the southern provinces of Angola, it is important to raise the awareness in order to promote ecosystem approach to the water tower conservation and to promote the development in Angola in the sustainable manner.

The Kunene River Basin

The Kunene River basin encompasses portions of southern Angola and northern Namibia. It is about 1,050km long and forms a border between Angola and Namibia at its lower part before it reaches the Atlantic Ocean, with a catchment size of 106,560 km². The basin is characterized by diverse climate patterns with abundant precipitation in the upper catchment (in Angola) and water scarcity in the lower basin, as well as a significant hydroelectric potential, and a transboundary management setting. The Kunene River rises on the southern slopes of the central highlands water tower of Angola at elevations between 1 700 and 2 000 metres above sea level, not far from Huambo. These source areas are well-watered, fertile and have become a densely populated agricultural area. They also host the headwaters of other important rivers in Angola including the Kuanza, Queve and Cubango rivers. The ecosystem integrity of the central highlands is therefore of critical importance to all those living downstream.

The Upper Kunene is characterized by highlands with gentle rolling hills separated by broad shallow valleys between an altitude of 1 800 and 1 200 meters up to Huambo and Matala towns. The Middle Kunene consists of rolling hills in the northern areas with the terrain becoming flatter towards the Namibian border in the south, whilst the Lower Kunene exhibits mountainous topography and semi-arid to arid conditions. Near the river mouth, the river crosses the Namib desert. The relatively small catchment and the steep riverbed slope in the upper and lower sections also mean that flows run relatively quickly to the Atlantic coast, leaving the river almost dry at the end of the dry season. Tributaries of the Kunene in the northern highlands are typically perennial while the middle reaches are fed by largely perennial rivers draining wide floodplains. Tributaries in the lower reaches are ephemeral, characterized by short flash floods, and generally contribute negligible flows.

The natural resources of the Kunene basin are important for agricultural and livestock production, as well as for energy production and tourism. The plateau on which the Kunene River takes its source, the “planalto”, consists of a rolling eroded surface underlain mostly by basement complex rocks. The area is well-watered and fertile and has become a densely populated agricultural area. It the greater area is also host to the headwaters of other important rivers such as the Kuanza, Queve and Kubango. Although highly seasonal, the waters of the Kunene River are used for the generation of electricity at the Gove Dam and at Ruacana. There are also plans to construct to construct the Baynes Hydroelectric Power Station further downstream which would generate 300MW for each country. The Kunene River also provides a critical water supply function, both within the basin and through transfers to the adjacent heavily populated and water-deficit Cuvelai basin.

The basin hosts several important protected areas including part of the Skeleton Coast National Park in Namibia and the Iona and Bicuar National Parks in Angola. The Kunene basin co-hosts (with the Cuvelai) the Mupa National Park in Angola (est. 1938). It is located in the transition zone between the Brachystegia and Southwest Arid Biomes. Originally established to protect the Angolan subspecies of giraffe, *Giraffa Camelopardalis angolensis*, much of the park is covered with well-developed *Colophospherum* forest.

Mean annual precipitation varies significantly across the basin, with well over 1 000 mm/year falling on the plateau in the north east of the Upper Kunene and decreasing dramatically to below 100 mm/year at the Atlantic coast in the south western reaches of the Lower Kunene. Around 75 % of the entire flow of the Kunene is generated in the Upper Kunene sub-catchment.

The population of the basin is estimated at 2.38 million^[1], with the large majority (>95%) living within the Angolan portion of the basin. The majority of the population are engaged in rainfed subsistence agriculture although there is expanding activity in irrigation with significant plans for expansion.

In contrast with the Cuvelai basin there are significant water infrastructures on the Kunene River, including the Gove Dam, Matala and Calueque weirs and the Ruacana diversion weir and hydropower plant. There are significant transfers of water to the Cuvelai basin and plans for further transfers.

The Cuvelai River basin

The Cuvelai Basin, a transboundary wetland area of approximately 173,000km², shared almost equally by Angola and Namibia, consists of hundreds of drainage channels, called *iishana*, many of which are dry for most of the year, but prone to extensive flooding during the rainy season. The channels flow from north to south, from the southern Angolan highlands to Namibia's Etosha pan, one of the four Ramsar-registered wetlands in Namibia. The Cuvelai is an endorheic basin with all its water converging into the Omadhiya Lakes and Etosha Pan, or evaporating along the way.

The natural resources of the Cuvelai Basin are hugely important to both countries. The fertile soils provide a foundation for agriculture and have attracted large numbers of people making parts of the basin the most densely non-urban areas in either country. The basin also supports large numbers of cattle and the system provides water for the Etosha Pan and its associated National Park. The Etosha Pan and its associated smaller pans, about 25% of the area inside the Etosha National Park, was designated as a Ramsar wetland in 1995. This unique, vast landscape is of international importance due to the biological diversity of the pans and its surrounds. The park supports populations of several rare and endangered large mammals such as black rhinoceros, African elephants and roan antelope. The pan also serves as a breeding ground for flamingos in good rainy seasons.

Average annual precipitation decreases from more than 1000mm/year in the source areas of the basin in Angola to less than 500mm/year in the southern part. Even in the northern half of the basin, precipitation falls to around 550mm at the Angola/Namibia border. Rainfall distribution, intensity, and duration are finely balanced in the Cuvelai Basin; too little rainfall can easily lead to drought conditions, and too much leads to flooding. The severity of floods is determined by the location, intensity, and duration of rainfall. Most flood waters cross the border as surface water spreading south through the shallow oshana channels, and the main Cuvelai channel.

Groundwater is an important water resource in the basin, especially during the dry season but is still relatively underused and its distribution, quality and potential is inadequately understood. It is generally agreed that there is significant potential for increased production but further investigation are required and planned. At present, groundwater is abstracted mainly from the Ohangwena Kalahari Aquifer and the Discontinuous Perched Aquifer - where fresh water is only found in certain parts of the aquifer, by means of boreholes. Shallow wells, known as omithima, and deep wells, known as oondungu, are used to supply water, especially to isolated villages in the basin. Groundwater is used for domestic use and during drought for livestock watering as well but is not used for irrigation. However, a new project^[2] being implemented by BGR, Germany, has amongst its objectives the plan to make groundwater available for agriculture and aquaculture. The larger settlements in the basin depend on water transferred from the Kunene Basin through canal and pipeline distribution systems. These settlements include Ondjiva in Angola and the majority of urban centres in the Namibian portion of the basin north of the Etosha Pan.

The basin is home to around 1.352 million^[3] people and hosts some of the most densely populated rural areas in Namibia. Relatively fertile soils and the availability of freshwater due to shallow aquifers have made the Cuvelai an attractive settlement area, despite the high flood risk, with relatively high population density, at least compared to surrounding areas and other rural areas in Southern Africa. Transboundary relations and linkages are strong among the basin population, both in the social sphere where a single tribal group, the Ambó or Owambo people, have traditionally dominated the landscape on both sides of the border, and in economic terms through formal and informal trade.

The Cuvelai Basin is situated in one of the areas that was worst hit by the civil war (1975-2002) in Angola. The main town, and now the administrative capital of Cunene Province, Ondjiva, was largely destroyed during the Angolan Civil War. Most of the population had left the city by 1989, and by 1999 it was home to fewer than 5,000 residents. Reconstruction efforts began after the advent of peace in 2002.

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description);

Global Environmental (and Transboundary) Problems and their Immediate and Root Causes:

Increasing water scarcity and hydrological variability, exacerbated by climate change

This is a critical issue for both basins but with quite different impacts. The Cuvelai River basin is very dry, prone to both floods and droughts. The basin supports a large rural population whose livelihoods are, in most cases, directly dependent on agriculture and the availability of water. This means that the basin population is particularly vulnerable to the highly variable nature of the hydrological patterns of the Basin.

Rainfall in the Cuvelai basin varies in many ways: across the Basin, from north to south in volume and reliability, within the season and from season to season. The Variability increases southwards as the average annual precipitation decreases so this adverse combination of low but highly variable precipitation makes water scarcity a particularly serious challenge in the southern part of the basin. On average, the northern areas of the basin receive almost twice as much precipitation as the south-west. There are significant changes in rainfall within each season. The rains, which start after a long dry season, in October and November, are generally light with the highest falls occurring anytime between January and March, before tailing off in April. However, the northern areas, such as at Camicula and Cuvelai, usually get rain earlier and quite often have heavy rains in December. Rains in the east also usually start slightly earlier than in the west. Changes from month to month normally follow a pattern, but changes from season to season can be dramatic and are never predictable. For example, the good rains in 2005/2006 were followed by low rainfall in 2006/2007. Then there were five good seasons in a row between 2007/2008 and 2011/2012, The 2017/18 seasons saw heavy falls and floods, while the 2018/19 season was one of the driest on record with catastrophic crop failures throughout the basin. Change in rainfalls as well as in utilization of water (including the extraction of groundwater) have impacts on the ecosystem of the Etosha pan, a significant wetland ecosystem recognized by the Ramsar Convention.

In the Kunene basin, variability increases even more rapidly southwards and westwards. In addition to its impacts on the livelihoods of subsistence farmers and livestock farmers within and outside of the basin, as well as wildlife within the Skeleton Coast Park (Namibia) and the Parque Nacional de Iona (Angola), water scarcity has significant impacts on hydropower generation in the Kunene basin. In order to provide a steady supply of electricity throughout the year, existing and planned hydropower developments require large storage because flows are increasingly variable and unpredictable. This can affect the feasibility of future developments. The Kunene River mouth supports a small wetland area that is important for migrating birds.

Immediate causes

The i) natural variability in precipitation, combined with ii) a lack of intra- and inter-seasonal storage, iii) underutilization of groundwater (combined with no significant conjunctive use of surface and ground water, are the immediate causes of water scarcity in in the Cuvelai basin. This is somewhat offset by a major water transfer scheme from the Kunene basin, but many settlements and the rural inhabitants are not covered by the distribution systems.

In contract, there is significant water storage infrastructure in the Kunene basin but the focus of this storage has been in support of hydropower generation rather than water supply for the basin's population. Population density in the Kunene basin is lower than in many parts of the Cuvelai, but water scarcity is an issue for those that don't live close to the river. There is a large level of dependence on groundwater in these areas.

The need for the comprehensive monitoring of climate and water resources and the sharing of information has never been greater, as also the need to improve systems that can provide early warning of climate-related disasters. Other measures and interventions such as rainfall and flood water harvesting, and more and better planned groundwater abstraction are required to fill the increasing gap between water demands and water availability. All of these require a coordinated, integrated and sustainable approach to planning and implementation at a transboundary basin scale.

Root causes:

Climate variability and water scarcity in both basins is being amplified by increasing population pressures and climate change.

Land degradation

Land degradation has led to reduced ecosystem productivity, contributing to widespread poverty, poor health and increase of the highly vulnerable population in many parts of the two basins. It is important to stress the very strong dependence of the population on the available natural resources. When these resources become degraded as a result of over-exploitation, there is a tendency to try and exploit the resources even further beyond the limits of sustainability, supporting a vicious cycle that becomes increasingly challenging to break out of. Climate change will add additional pressure to the land resources.

Immediate causes

While there is an insufficient database of land degradation and desertification, in particular lacking data on spatial distribution, a general observation is that the most serious land degradation occurs in the hilly headwaters of both basins in Angola where poor farming practices and deforestation result in increased erosion, and in the rangelands, in particular the communal grazing areas. The loss of vegetation in the headwaters increases sediment load and often leads to reduced base flows and higher flood peaks. The increase in sediment load due to land degradation has tangible and cumulative negative impacts on the capacity of dams downstream. Climate variability and changes also have a profound effect on accelerating erosion and land degradation.

The immediate causes are, to a large extent, related to agriculture and livestock farming and deforestation. In both basins, but especially the Cuvelai basin, cattle are moved between dry winter season grazing areas and wet season areas around their homesteads. This practice – known as *ohambo* – involves cattle from each traditional authority area using an area specific to the authority. The winter grazing grounds were always in areas where few people lived and so there are no significant competing uses of land, but this system is increasingly under threat because wintering grounds have been lost, or the grazing available per unit animal has been severely reduced. In addition, the number of cattle moved to the grazing areas has increased. One of the many benefits of the arrival of peace in Angola in 2002 following the Angolan Civil War, is that access to rural areas became easier. As a result, wealthy, influential people are able to establish large farms in areas where few people live. Not surprisingly, fencing-off in the largest shared grazing area, Oshimolo, has started and may increase until most of productive grazing areas have been privatized. The process of fencing is likely to be similar to that which resulted in the loss of most winter grazing in the Ndonga Mangetti area.

With increasing population and climate variability, there is an increased need for well-managed livestock farming, hard to achieve when there is uncontrolled free grazing combined with a dwindling free-grazing resource. Some progress has been made in Namibia where the Communal Land Reform Act was enacted in order to regulate the management, administration and the facilitation of a proper and uniform land registration system for all communal lands in Namibia, thereby minimizing the number of land disputes in communal areas. Once properly implemented, together with improved stock-farming practices and access to markets, grazing could be much better managed. Currently, land in communal areas belongs to the state, but people are given rights to use parts of these communal lands for a period of 99 years or as long as they live, and to pass on those rights to their descendants.

Deforestation is generally as a result of sourcing of fuelwood. This is a particular issue in the northern parts of both basins. Bush encroachment is also an issue in some parts of both basins, in particular in the southernmost parts of the Cuvelai Basin. Since the types of agriculture and concentrations of livestock are related to the soils, the vegetation, topography and the climatic regime, the immediate causes of degradation vary accordingly. In the hillier, higher rainfall areas, limited to a small area in the Cuvelai Basin (where slopes are small) and the hilly source areas of the Kunene, degradation is driven by poor farming practices which result in erosion and loss of nutrients. Not only does productivity decrease, affecting livelihoods, but degraded areas are quickly infested by alien vegetation. In the flatter areas, water-driven soil erosion is much less of a problem but the exposure of tilled soils to wind erosion when the rains are poor, is a challenge. In areas where the grazing of livestock predominates, the major immediate cause of land degradation is overgrazing.

The loss of Oshimolo as the last major grazing area for cattle owned by Oshiwambo people may have significant consequences. Pressures on grazing in national parks, commonages and perhaps on freehold land are likely to increase in Namibia and local conflicts may arise, including tensions between Namibia and Angola. This issue will be looked into more closely at locations where the project interventions will be expected through UNDP's Social and Environmental Safeguard Procedure during the project preparation phase.

Root causes:

While land degradation, can be addressed to a large extent through addressing some of the immediate causes, it is clear that there are root causes lying behind the increasing number of farmers and livestock in the basins. A combination of poor farming practices, lack of access to credit, markets, opportunities for commercialization, adding value through agro-processing, together with a lack of alternative (off-farm) livelihoods are some of the root causes that need to be addressed in a holistic manner. Achieving this is critical to addressing both the challenge of poverty and environmental degradation, but it is clearly complex. A combination of actions are required at the community level but this needs the appropriate enabling environment, including access to credit, adequate and appropriate extension services. Experience has shown that implementation of complex community-based interventions, effectively "bottom-up" solutions, can best be achieved through small-scale, but holistic, pilot demonstration projects which yield both environmental and livelihood benefits, and which can easily be scaled up.

Climate change, which would appear to have brought more intense rainfall events interspersed with longer dry periods, is another root cause behind the increased rates of land degradation, in particular soil erosion.

Security, or lack thereof, of land tenure is also considered in general as a root cause for land degradation. When farmers or land-users do not have a long-term tenure over the land they utilize, their willingness and motivation to invest in long-term, sustainable land management practice is low. Rather, their interests will be on short-term gains, even though the practices they use to realize the short-term gains might be detrimental to long-term land management. The National Land Policy of 1998 in Namibia is aimed at addressing the need for access to land and security of land tenure both on rural and urban land, in order to redress past social and economic injustice. While the project will highly unlikely include interventions that will alter the security of land tenure directly, it will strive to present causal links between the security of the land tenure and the sustainable land management practices observed in the basins, if any, to the attention of senior policy makers in the context of the effective implementation of the basin-wide IWRM Plan.

Water quality degradation

The quality of the Kunene River from source to mouth is relatively unpolluted and is considered to be good[4]. This does not take into account sediment load which is known to be increasing as a result of progressive land degradation. As already mentioned, there are areas of the Cuvelai Basin where water quality is naturally poor as a result of salinity and fluoride. Measurements are lacking[5], so it is not possible to say whether either of these are deteriorating, but stakeholders reported pollution problems resulting from the indiscriminate dumping of faecal sludge in the Cuvelai basin when they were consulted during the Cuvelai River basin IWRM Plan development process in 2018.

Immediate causes:

The immediate causes of water quality degradation are especially i) erosion which contributes to high sediment loads in both the Kunene and Cuvelai Rivers ii) the discharge of untreated wastewater/sludge directly into the iishana system. A major source of pollution is the lack of sanitation and efficient wastewater treatment facilities. While the larger settlements such as Oshakati, Ongwedive and Ondangwa have wastewater treatment facilities, there is a challenge with the disposal of waste from septic tanks and pit latrines and overflow from ponds' systems into iishana. Stakeholders reported that having emptied septic tanks, contracted companies generally dump the effluents indiscriminately, posing immediate threats to water quality in the iishana system, rather than transport long distance to the ponds in Oshakati or elsewhere[6]. Alternative locally-based disposal and recycling systems could be explored and included as part of community-based intervention packages (see Component 5).

Root causes:

Similar root causes to those already indicated under land degradation for the sediment load apply. In addition, increased water scarcity due to climate change and increased population pose additional threats to water quality.

Barriers to be addressed:

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In order to address two of the most prevalent root causes – poverty and resource requirements for development – the basin states need to jointly build their respective and joint capacity to plan for future development of the basins in a sustainable manner. Such efforts will support them achieve the Visions for the two basins, agreed for the Cuvelai Basin[7] in December 2018 and still to be finalized for the Kunene basin, and address some of the immediate causes identified at the local, the sub-basin, and the transboundary basin levels.

Furthermore, given the socio-economic context in which the basins are situated, it becomes critically important to address these transboundary challenges through cooperative actions by both countries, and establish a harmonized, basin-wide approach to development as well as environmental conservation so that neither party advances development with costs borne by the other. This points to the importance of promoting and strengthening basin-wide cooperation through the Permanent Joint Technical Joint Commission for the Kunene River (or Kunene PJTC) and through the Cuvelai Watercourse Commission (or CUVECOM) to support the economically, socially and environmentally sustainable development of the Kunene and Cuvelai basins and their people.

The following [five](#) limitations that are currently prevalent in one or both of the two basins are identified as **barriers to be addressed through this project** in order to promote and strengthen the basin-wide cooperation between the two basin states, with a particular focus on the joint planning capacity of the basin by both the PJTC and CUVECOM for their sustainable future:

1. Limited institutional, technical, financial capacity for joint planning and management at the transboundary basin level.
2. Limited data, information, and knowledge of the resources and ecosystems in the basin shared at the basin level.
3. Lack of a long-term strategy and policy planning efforts at the basin levels, knowledge-based and supported by strong political commitment.
4. Limited engagement of various stakeholders and resources users in the planning and implementation of the IWRM in the basin in order to address global and local challenges the basin is facing.
5. [Linked to 4 above, there is inadequate cross-sectoral participation in the planning and implementation of interventions. It is a fact that both the PJTC and CUVECOM have their roots in the water ministries but many of the key required actions are concerned with agriculture, energy and the environment.](#)

2) the baseline scenario and any associated baseline projects;

A number of transboundary and national initiatives, financed by the countries themselves as well as partners, provide the baseline for this project.

Transboundary Interventions

In the Cuvelai Basin significant efforts to start addressing the barriers have gained some momentum over the last few years. Following the signing of the CUVECOM Agreement by the two basin states in 2014, some support has been provided by GIZ. This included supporting a rapid assessment of the socio-environmental situation which was carried out in 2017. This was a desktop study combined with some stakeholder consultation on both sides of the border. The outputs can be seen as corresponding to a preliminary Transboundary Diagnostic Analysis. While **major knowledge gaps** were identified in the rapid assessment including:

1. Lack of coordinating institution to support co-management of the Cuvelai River Basin
2. There is an urgent need for an enhanced hydrological and climatological monitoring network in the Basin
3. Lack of an effective flood and drought early warning system for preparedness, mitigation and management during such events
4. Lack of understanding of Groundwater Resources in the Cuvelai River Basin
5. Bridging the gap between water demands and supply in the Basin
6. Incomplete understanding of the socio-economic landscape within the basin

Both countries decided to proceed with the development of a first long-term IWRM Plan at a transboundary basin scale for the next 20 years (2020-2039). An investment plan for the first five years (up to 2024) was developed with **the full knowledge** that the plan would have to have considerable flexibility and to be reviewed, revised and updated as the knowledge base is improved. In fact, the plan includes **several actions** specifically aimed at collecting the data for filling gaps, with actions over the first five years focusing on actions of no regret. This first edition of the IWRM Plan was finalized in July 2019 and signed off by the CUVECOM co-chairs with the proviso that the planning should be seen as a “living plan” that would have to be reviewed and updated as the knowledge base was improved. The proposed TDA production will fill some of the gaps so that the plan can be updated and revised in 2024 on a much firmer knowledge base. One of the recommendations was to set up a Secretariat (in line with Gap 1). Following the recommendation, GIZ supported an establishment of the interim Secretariat. This was followed by a GIZ-financed project to draw up a first 5-year IWRM Plan (covering 2020 to 2024) for the basin, which aims to support the implementation of the long-term IWRM Plan (2020-2039), together with setting up a website for CUVECOM, and developing a River Awareness Kit (RAK) for the basin. Under the baseline scenario, the filling of the critical gaps is likely to be completed in an ad hoc manner with limitations of resources for activities which may be seen as non-urgent. While the first 5-year IWRM Plan has been agreed by both countries, and has an estimated cost, implementation will require support from cooperating partners. Without the proposed GEF support, which will, in particular focus on Gaps 1, 2 and 3 (but also Gap 4, 5 and 6), the inadequate knowledge of the climate, hydrology and other key parameters is likely to continue, in particular within the Angolan portion of the basin.

With respect to groundwater, CUVECOM has secured support from BGR for the transboundary study of the Ohangwena/Cuvelai Aquifer, which will start shortly. This will build on work already carried out with BGR support in Namibia. BGR is organizing its project appraisal mission in October 2020.

The two countries have signed a bilateral agreement for the construction of the cross-border Baynes hydroelectric dam about 200km downstream of Calueque. Construction is expected to start in 2023 and last for 5 years. Once completed, the dam will provide 600MW of installed capacity to be equally shared by the two countries.

National level interventions

Following the devastating 2018/19 drought, which hit both basins in both countries, efforts to improve water security have been accelerated.

In Angola, a number of water transfers are being studied in detail including:

- Cunene River Water Transfer System from Town of Cafu to Shana zone – Towns of Cuamato and Namacunde. This would involve the construction of a new intake on the Cunene River, a pipeline, canal and reservoirs.
- Calucuve Dam and canal. This would involve the construction of a dam, a canal from Mupa to Ondjiva and reservoirs.
- Ndúe Dam and canal. This would involve the construction of a dam, a canal from Ndúe to Embundo and reservoirs.

The FAO/GEF supported *Sustainable Land Management in target landscapes in Angola's southwestern region* project should start in the near future. This is a highly relevant project with the objective of “reversing negative land degradation trends in selected landscapes in southwestern Angola by combining sustainable and rational approaches to planning, decision-making and land-use stabilization with participatory approaches to capacity building of local stakeholders”. Interventions are planned in both the Cuvelai and Kunene river basins. Component 1 comprises an agro-ecological zoning and integrated planning exercise to be followed by Component 2 which would see at least 80,000ha of target landscapes, where land-use will be stabilized and monitored (locations in the provinces of Cunene, Namibe, Huila and Benguela, with exact municipalities to be confirmed during PPG). Interventions will focus on different goals depending on the landscape and will include the intensification of agriculture, intensification of agro-pastoral agriculture and rangeland degradation prevention measures. A new protected area in the Cuvelai Basin on the border with Namibia is also proposed.

The ongoing GEF/LDCF supported project *Promoting Climate-resilient Development and Enhanced Adaptive Capacity to Withstand Disaster Risks in Angola's Cuvelai River Basin* is also highly relevant. The project objective is that the climate-related vulnerabilities facing the inhabitants of Angola's Cuvelai River Basin are

reduced through targeted investments and capacity building. The outcomes are highly relevant. Component 1 includes actions in hydro-climatic monitoring and establishment of a famine and flood early warning system. Component 2 is focused on institutional capacity-building and capacity-building in vulnerable communities. The livelihoods assessment work under this component will provide useful information.

In Namibia, work will start (supported by KfW as part of the Transboundary Project (SADC and PJTC)) in the immediate future on a feasibility study for the Calueque Oshakati canal as part of the Kunene Transboundary Water Supply Project. It will be executed by Namwater, and includes looking at the feasibility of replacing the Olushandja-Oshakati canal with a pipeline.

In the Cuvelai basin in Namibia the Oshakati Water Purification Plant (OWTP) will be extended at a cost of N\$316 million (USD 19 million). The objective of the project is to increase the availability of potable water in the Central North of Namibia. The OWTP is currently exceeding its design capacity of (40,556 m³/day) during high demand months. The Oshakati water treatment capacity will be increased by this amount through construction of a second plant of this capacity. Efforts are also being made to improve the treatment of wastewater. A wastewater treatment plant is under construction in Oshikango and the Nordic Development Fund is supporting the development of a biogas plant in Ondangwa that will produce 3.4 GWh of carbon-neutral electricity annually, (mitigating 2,330 tons of CO₂e). The project is the first of its kind in Namibia that will process city sewage water and produce low-cost organic fertilizers to local farmers.

The Namibian authorities continue work on initiatives related to water quality monitoring in the basin, pollution control, monitoring, extraction permitting and management activities.

Both countries have agreed to invest on an ongoing basis in initiatives related to:

- water quality monitoring in the basin, pollution control, monitoring and management activities;
- water resources monitoring (both surface and ground water) and modeling in the basin;
- water abstraction permitting and management activities; and
- ensuring security of water supply and environmental management

3) the proposed alternative scenario with a brief description of expected outcomes and components of the project;

Interventions proposed to be financed by GEF are all related to the five barriers identified above and will cover the incremental costs of the actions required to foster transboundary IWRM through the development or updating and implementation of stakeholder-driven and knowledge-based IWRM Plans. The medium- to long-term financial viability and sustainability of the joint management activities will be strengthened by the development of the Investment Plans for both basins.

Theory of Change

Enhancing water security for the basins' riparian populations is the central objective of the project. Sustainable solutions must be knowledge-based and ensure the involvement of stakeholders so that interventions that are proposed are readily accepted, can therefore be successful and rapidly **ready for scaling up**. This has to be done at both the national levels (especially in the Angolan portions of the basins where the sources of both rivers are found and where capacity and data are most limited) and at the transboundary level, hence the **need for mechanisms to support transboundary cooperation**.

To move from the current situation of poor water security (as part of a weakness in realizing and evaluating associated trade-offs of the water-energy-food nexus dimensions and sustainable pathway options based on:

- Lack of knowledge (limited data and analysis), especially for i) the all important headwaters (part of the Angolan central highlands water tower), where there is a need to have an economic evaluation/accounting of ecosystem services and ii) the potential for increased groundwater use (as standalone and as part of conjunctive use with surface water)
- Environmental degradation, in particular land degradation in the headwater areas and pollution especially in densely populated areas
- Weak governance at both the national levels (especially in the Angolan portions of the basins where there is both weak technical and institutional and at the transboundary levels where the Cuvelai Watercourse Commission is new and the Kunene Commission not yet in place.
- Limited stakeholder involvement especially at the community level,

It is important to stress the dire consequences of the continued baseline or “business as usual”, bearing in mind that business as usual does not mean that no actions are being taken, only that they are not adequate to address the issues and challenges and remove the barriers.

- There is an ever-narrowing gap between the water available and the demand imposed. This is a result of an increasing population, increasing per capita demand, climate change and land degradation induced increased variability of water resources including longer drought periods and increased flood peaks. Without a better knowledge of both the surface and groundwater resources (in space and time), it is not possible to plan for this demand to be met. Without a much improved understanding of the groundwater potential (and hence also the potential for conjunctive use), the only way to meet demands in the Cuvelai basin will be through ever-greater transfers from the Kunene. Not only is the infrastructure for these transfers very expensive compared to the localised development of groundwater, they take away from the water in the Kunene River available for hydropower generation.
- Degradation of the upper parts of the catchments, in particular the Kunene, has been exacerbated by a rapid increase in the population over the last two decades. Without the rapid and widespread uptake of improved farming and watershed management practices catchment degradation will result in the erosion of valuable topsoil and reduced crop yields, increased flooding, reduced baseflows and lowering groundwater levels. This degradation can take on an exponential form under the baseline scenario.
- Flooding in both catchments will continue to increase under the baseline scenario. The increased magnitude of floods is driven by both climate change and land degradation. Without adequately addressing land degradation and implementing knowledge-based climate change adaptation strategies, the frequency and magnitude of extreme floods will continue to rise with both an economic cost and loss of life.

- Although there is transboundary cooperation already in place, without strengthening, management of the basin's water and natural resources will not be catchment-based. Without a fully integrated basinwide approach management will be inefficient and development limited. Transboundary cooperation in the Kunene, with the PJTC has been in existence for several decades and has contributed to the development of large-scale infrastructure on the Cuvelai River. However, there is a need to extend the scope of this cooperation beyond the development of water transfers and hydropower schemes. Transboundary management in the Cuvelai basin is relatively new yet movement of the local populations across the border occurs on a continuous basis. Without the improve collection, sharing and combined analysis of data and a combined effort to address the barriers to development the challenges of the energy-food-water-environment nexus will become increasingly difficult to address.

To achieve a situation of improved water security and a strong water-energy-food nexus, the following actions are required and proposed:

- Building a substantial and solid knowledge-base through;
 - o Gap-filling throughout both basins (surface and groundwater and the potential for conjunctive use) (Component 1 and 2) and especially in the headwaters (Component 4)) and throughout both basin
 - o Knowledge gained from Community-based interventions such as water harvesting and livelihood-based watershed management (Component 5).
 - o Scenario analysis in the Kunene basin (Component 2)
 - o Carrying out TDAs for both basins including causal chain analysis

This work is critical in contributing to the removal of Barrier #2, the limited data, information, and knowledge of the resources and ecosystems in the basin shared at the basin level. Achieving robust IWRM Plans for both basins is dependent on adequate knowledge.

- Developing stakeholder-driven and bilaterally endorsed IWRM Plans for both basins which provide clear and agreed actions that address the root causes constraining water (and associated food and energy) security (Component 1 and 2). The stakeholder participation process has to be both vertical within the water sector, and horizontal across the various sectors, in particular (but not limited to) agriculture (crop and livestock), energy and the environment. These actions will contribute to the removal of Barriers #4 and #5. The endorsement of knowledge-based IWRM plans which are aligned with national and regional policies and strategies and which address, at the same time, problems on the ground will contribute to the removal of Barrier #3.

- Build strong governance (Component 3 and 4 (Angola)) to ensure the effective implementation of the IWRM plans. The effective implementation of the IWRM Plans will require coordination capacity (vertical, horizontal and transboundary), financial resources, a good monitoring system and capacity, and a reporting mechanism of the progress and results. The project aims to support CuveCOM and PJTC to build these capacities in their Secretariat. This will particularly contribute to addressing Barrier #1, the limited institutional, technical, financial capacity for joint planning and management at the transboundary basin level. This includes supporting the necessary improved capacity within CUVECOM/PJTC to work with local government and NGOs and directly with communities so that they can play a strong role in driving Component 5. It also includes the support to strengthen the Secretariat's operations and administrative capacity to manage funds of partners directly. Further, to make the CuveCOM and PJTC more resilient to shocks like COVID-19, the project will

build sufficient capacity for CuveCOM and PJTC to collaborate and work together remotely utilizing a suite of virtual means and online tools that allow CuveCOM and PJTC to connect the decision makers for consultations and decision making, to be connected with key stakeholders, to share documents and resources that aid decision-making, and to meet online for decisions. Such remote collaboration capacity has become critical for inter-governmental bodies like CuveCOM and PJTC to continue their operations even when face-to-face interactions or travels (domestic or cross-border) are restricted due to the pandemic or any other similar event. Once such capacity is built, it will reduce their CO2 footprint significantly even when travel restrictions are not in place.

- Implementing community-based pilot projects for key intervention areas in order to facilitate stakeholder support and scaling up (Component 5). This will contribute to addressing Barrier #4, the limited engagement of various stakeholders and resources users in the planning and implementation of the IWRM in the basin in order to address global and local challenges the basin is facing.

The Theory of Change associated with the project is schematically summarized and included in Annex D.

Component Structure

Based on the Theory of Change above, the project has six components. The first two components are dedicated to each of the two basins. The design of having one component dedicated to each basin reflects the strong wish by both participating governments to do so. While the governments strive to realize resource efficiency (in terms of not only financial resources but also time and efforts by all involved) by requesting one GEF-financed project to support the two basins, which are shared by the same two countries and located next to each other, they wish to develop a dedicated TDA and a dedicated IWRM Plan for each basin. Indeed, the two basins are very different in terms of physical (including hydrological, surface and groundwater), socio-economic and social characteristics. It could be argued that all that they have in common is the fact that they are shared by the same countries and have a (very limited) hydrological connection under extreme hydrological circumstances. So, while the content (need for a TDA and an IWRM plan) seem similar, the work to be carried out in completing the TDA and the content of the IWRM plans will be very different[8]. This notwithstanding, it has been agreed to publish a TDA report for the two basins comprising two volumes, one for each basin.

A third component is aimed at strengthening the governance that will foster the joint management of the Cuvelai and Kunene transboundary river basins and realize sustainable development and resilient livelihoods of basin communities. It aims to build transboundary capacity (institutional, technical and operational) to implement the knowledge-based IWRM Plans for both of these adjacent basins, and to ensure gender mainstreaming and women empowerment efforts and social and environmental safeguards are integrated in all activities promoted by the two commissions. Through this third component, the project will ensure that sustainable secretariat(s)[9] are in place and operating in the most cost-effective manner, supporting both CUVECOM and the future Kunene Commission (currently the PJTC).

A fourth component is devoted to critical and urgent capacity building in Angola. Gap-filling on data and information in the Angolan portions of each basin will support Components 1,2 and 3. Improved knowledge of the Angolan portions of the basins and the improved ongoing monitoring capacity in Angola will benefit not only Angola but also Namibia. The component will also assist Angola in raising awareness of the ecosystem importance of the water tower located in the central-southern Angola and support the promotion of the ecosystem-based approach to the water tower conservation. It is proposed to achieve this through strengthening inter-sectoral coordination at both national and provincial levels and strengthening the engagement of provincial governments in the policy and management discussions of (transboundary) water resources management. Close collaboration and coordination with biodiversity conservation initiatives and/or sustainable land management initiatives (funded by GEF and others) are expected.

A fifth component is aimed at strengthening the resilience and improving the livelihood of basin communities through their active engagement in the IWRM. This will enhance stakeholder buy-in and facilitate taking to scale as part of IWRM Plan implementation.

The sixth and the last component is dedicated to the processing and managing scientific knowledge, best practices and lessons learned with aims to strengthen the science-to-governance linkages, to strengthen stakeholder engagement in the IWRM Plan implementation, to promote the replication and upscaling of best practices piloted in the basins across the basins and beyond.

The Components are outlined in more detail in the following paragraphs, but the Table 1 below summarizes the baseline and alternative scenarios and their associated future outcomes.

Table 1: Comparison of baseline and alternative scenarios and associated outcomes

Baseline scenario (without GEF intervention)	Outcomes	Alternative scenario (with GEF intervention)	Outcomes
Planning based on inadequate knowledge base, especially in critical parts of the basin (eg source areas)	Inefficient and flawed design of infrastructure and decision-making, wasted resources, loss of life	Support to climate/water data collection and analyses, esp. in critical headwaters	Effective planning and efficient design, effective use of resources, improved protection against drought and improved flood warning, reduced loss of life and damage
Planning and intervention design not adequately based on stakeholder participation (resource users /potential beneficiaries) and	Inappropriate and/or unsustainable and/redundant interventions (partially or wholly);	Stakeholder-driven interventions, planned and implemented with their support, thus contributing to sustainability and desired o	Strong sense of ownership among basin communities on sustainable IWRM practices and their engagement in the IWRM Plan i

cross-sectoral consultation	Risk of lack of complementarity and duplication of effort between sectors	<p>outcomes.</p> <p>Cross-sectoral coordination and collaboration promoted and catalyzed by CUVECOM and Kunene PJTC for the effective implementation of the IWRM Plan.</p>	<p>mplementation.</p> <p>More coherent, coordinated and harmonized interventions to promote the IWRM Plan implementation through a cross-sectoral approach.</p>
Weak and unharmonized legal and policy frameworks	Inappropriate policies, incompatible transboundary approaches to resource management, challenges in enforcement	Strengthened and harmonized (cross-border), strategies and policies	Coordinated and harmonized strategies and policies can be implemented, appropriate for a naturally transboundary system
Particular lack of technical and institutional capacity in the Angolan part of the basins	Lack of a level playing field between the two countries. Lack of insight into the opportunities and benefits of transboundary cooperation	Strengthened technical and institutional capacity within CUVECOM and PJTC as well as local administrations	Angola is more able to fully appreciate options and opportunities and have confidence in engaging in cooperation processes across borders and sectors. Improved support by stakeholders to CUVECOM and PJTC.
Lack of coordinated measures on the ground to address land degradation	Deforestation, erosion, loss of productive land, water energy, food insecurity	Implementation of community-based projects (livelihood-based watershed management)	Early benefits, albeit at localised levels showing Reduced erosion, improved water, food and energy security, improved livelihoods, all provide stakeholder support for upscaling and enhance credibility and reputation of CUVECOM/PJTC.
Lack of coordinated measures on the ground to address water (and food) security	Continued high levels of vulnerability to frequent drought leading to high levels of food insecurity	Implementation of community-based projects (floodwater harvesting, aquaculture, etc.)	Early benefits, albeit at localised levels showing reduced water and food insecurity

stress water (and food) security	ought leading to high levels of water and food security across wide areas	water harvesting, aquaculture)	duced water and food insecurity, improved livelihoods all provide stakeholder support for upscaling and enhance credibility and reputation of CUVECO M/PJTC.
Inadequate cross-border / transboundary coordination and communication	<p>Lack of support to RBOs, governments and their strategies/policies from communities.</p> <p>Inadequate flood warning resulting in loss of life and damage to property</p> <p>Inadequate transboundary planning of shared water resources</p>	Strong national and transboundary institutions support coordinated local and transboundary management and development of resources	<p>More effective use of resources for development</p> <p>Reduced loss of life and damage to property during floods</p> <p>Strong support to RBOs and government plans, strategies and policies</p>

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Component 1: Strengthening the transboundary and conjunctive water resources management in the Cuvelai River basin

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Component 1 aims at strengthening transboundary and conjunctives water resources management mainly through the strengthening of the knowledge base. Updating the “preliminary” TDA and the existing IWRM Plan will be the main tools used to achieve this.

As context, it is important to note that although major knowledge gaps were identified in the rapid assessment, as already listed earlier, both countries decided to proceed with the development of a first IWRM Plan at a transboundary basin scale for the next 20 years (2020-2039). An investment plan for the first five years (up to 2024) was developed in the full knowledge that the plan would need to have considerable flexibility and to be reviewed, revised and updated as the knowledge base is improved. In fact, the plan included several actions specifically aimed at collecting the data for filling gaps, with actions over the first five years focusing on actions of no regret. The proposed TDA production will fill some of the gaps so that the plan can be updated and revised in 2024 on a much firmer knowledge base.

The improved knowledge base (in particular with respect to climate, hydrology (surface and ground water), water quality, degradation hotspots, socio-economic factors and future development trajectories), will result not only from interventions under this component but also from other ongoing studies.

A much-improved assessment of groundwater basin-wide is intended to fill a major gap. While many people get their potable water from an extensive canal and pipeline transfer of water from the Kunene, the majority of small settlements and rural communities are heavily dependent on groundwater. Knowledge on the quantity, accessibility and quality of these groundwater resources are limited. The assessment will make use of ongoing work and monitoring records in both countries as well as research carried out through the University of Lubango in Angola and the proposed major transboundary study to be carried out by BGR.

A major gap is the proper cross-border understanding of the hydrology, both in terms of surface water resources and flood assessment and risk. Ongoing studies and projects will support this task. Notable of these is the ongoing climate-resilient development & enhanced adaptive capacity for disaster risk in Angola's Cuvelai River Basin (a LDCF-financed national project in Angola), implemented by UNDP[10]. The UNDP-LDCF project supports the establishment of a comprehensive famine and flood early warning systems (FFEWS) in the Angolan portion of the basin, including downscaled seasonal forecast delivery systems, which take into account climate change induced drought and flood events in the Cuvelai Basin. It also includes the procurement and installation or rehabilitation of at least 3 gauging stations and at least two hydrometric stations in the Basin. It is important to note the proposed system is to cover only the portion of the basin within Angola. As part of the TDA, the knowledge base will be extended to cover the whole basin using the new data collected under the UNDP-LDCF project combined with datasets available in the Namibian part of the basin. The proposed data collection actions in Angola under Component 4 will provide vital inputs in this respect. One of the proposed TDA/IWRM activities demonstration activities will look at the establishment of a **cross-border** flood early warning system for the basin. The Hydrology Division in the Ministry of Water and Agriculture in Namibia has been engaged in flood early warning work for well over a decade but has had to rely on remotely sensed weather information rather than any actual observations in the source areas in Angola. One of the proposed Community-based demonstration activities under Component 5, will look at the implementation of the cross-border flood early warning system on the ground for some selected settlements where flooding is recognized as high risk. This will include setting up the institutional structures at the community level, establishing real time linkages with a flood early warning centre, capacity-building at the community level and a flood resilience action plan to be implemented according to traffic light or similar system.

All of this work will contribute to the updating of the TDA and IWRM Plan and National Action plans. In summary, the TDA will be based on a number of focused activities including:

- Assessment of groundwater aimed at:
 - o Consolidating existing knowledge on both sides of the border and any new investigatory work (as proposed for example for the Ohangwena II/Cuvelai aquifer. Support from Germany/BGR has been secured for further transboundary study on the Ohangwena II/Cuvelai aquifer.
 - o Improving existing knowledge through limited field investigations and modelling work.
- Surface water resources modelling work aimed at:

- o Better quantifying the surface transboundary water resources of the Cuvelai basin in space and time. This will use all available existing datasets and any new ones collected during the course of the project and will take into account existing and emerging knowledge on climate change. New data collected in Angola under Component 4 will be vitally important.
- o Setting up the framework for a transboundary flood early warning system (to be detailed for selected communities as a pilot project). This will bring together knowledge and experience on these systems in Namibia and new real-time data collected in Angola. The CUVECOM agreement (Art. 4.2b) specifically identifies one of CUVECOM's functions as to "establish joint early warning systems against extreme events (floods, droughts and other disaster situations)". The Agreement also makes provision for the sharing of data (Art. 4.2a). .
- Assessment of flood water harvesting in the basin. This will be based on both:
 - o Improving the existing knowledge base, Inventorying the current state of flood water harvesting from upstream to downstream. Several different floodwater harvesting methods are used, and the extent and relative success of each one will be assessed
 - o Recommendations for floodwater harvesting approaches at different scales, including at the community level for uptake under Component 5.
- Assessment of opportunities for conjunctive use of surface and groundwater.
 - o Based on improved knowledge of groundwater arising from TDA work (under this project and a potential BGR project in the Cuvelai basin), opportunities for the conjunctive use of surface and groundwater will be investigated and recommendations carried forward to the IWRM Plan and NAPs.
- Revision and updating of the 5 Year IWRM Plan to cover 2025-2029.
 - o Based on the completed TDA, the preliminary results of the IWRM demonstrations and the community-based projects under Component 5, the project will support CUVECOM in the review, revision and updating of the transboundary IWRM Plan. A specific and critical output will be the Investment Plan covering the period 2025-2029.
 - o The updated Plan and associated investment plan will be the focus of a well-organized and publicized roundtable with potential investors and development partners

A close collaboration with the SADC Groundwater Management Institute, the World Bank initiative and the LDCF-financed project on Cuvelai is envisioned. Similar close cooperation with the FAO-GEF *Sustainable Land Management in target landscapes in Angola's southwestern region* project is essential for this component and Component 5.

It is now becoming apparent that the social and economic impacts of the present health emergency situation due to the COVID-19 pandemic will have negative effects on jobs and livelihoods in many sectors, including those related to freshwater resources. Current and potential future impacts will be considered during the TDA and IWRM compilation.

Short-term constraints on travel and group gatherings are being considered and on-line or remote learning and communication options will be used where necessary, adjusting some of the equipment related costs to ensure equal opportunity to all beneficiaries. In the case where field campaign are required and direct technical assistance of international experts is required but it is not possible due to the limitation in movement as a result of temporary measures due

to the COVID-19 pandemic, a combination of remote guidance by the international experts and utilization of national experts will be used to ensure the implementation of the activities.

Component 2: Kunene Basin TDA, IWRM Plan and investment plan

While there is no formal transboundary rapid assessment or preliminary TDA of the Kunene basin conducted in the past (such as was completed for the Cuvelai basin), the hydrology, and to a lesser extent other aspects, of the basin as a whole, has been studied and updated on a number of occasions as part of pre-feasibility and feasibility studies on proposed reservoirs and hydropower development in the basin. These include:

- Plan for the Integrated utilization of the Water resources of the Hydrographic basin of the Kunene River (2001)
- Feasibility and environmental studies for the Epupa Hydropower study (MWE, Namibia, 2007)

These studies show that certain parts of the socioeconomic and biophysical environments of the Kunene River basin are already well understood, in particular the surface water resources. Gap filling will be more focused on elements of ecology, including an assessment of ecological flow requirements and a better understanding of the socio-economic conditions within the basin and linkages with the environment.

The TDA development will also build on the work carried out in the 2001 Plan above by developing an updated basin-wide water resources model for contributing to the integrated evaluation of future development scenarios, aimed at identifying the most sustainable development options going forward. The previous model was a water resources focused model mainly aimed at understanding the water resources implications of different development (mainly dams/reservoirs and associated variations of location and size). This analysis will be updated and combined with a multi-criteria analysis to permit a broader based (taking into account socio-economic and environmental aspects) comparison of scenarios. Other output will be an operational decision-support system and recommendations for improving the hydro-climatic monitoring network.

Following completion of the TDA, the project will support the development of an IWRM plan for the basin, to be negotiated and endorsed at the ministerial level. This will be accompanied by National Actions Plans (NAPs) to be approved at the national level for both basin states. A monitoring and evaluation framework for the IWRM plan, based on the Theory of Change will also be developed.

Working with the PJTC, or a new Kunene River Commission (as anticipated), the project will develop a IWRM Plan (2025-2040) for the Kunene basin, which sets the vision for the basin and long-term strategic priorities for the basin and its people. The design and timeline will be coherent with the Cuvelai Basin IWRM Plan to ensure compatibility, bearing in mind the close ties between these two basins. This will be accompanied by a 5-year Investment Plan covering the period 2025-2029. The project will support securing the ministerial endorsement on the IWRM Plan from the two countries to signify a high political commitment of the two countries to manage the transboundary basin jointly. Once endorsed at the ministerial level, the IWRM Plan and associated investment plan will be the focus of a well-organized and publicized roundtable with potential investors and development partners, which supports the implementation of the IWRM Plan.

It is now becoming apparent that the social and economic impacts of the present health emergency situation due to the COVID-19 pandemic will have negative effects on jobs and livelihoods in many sectors, including those related to freshwater resources. Current and potential future impacts will be considered during the TDA and IWRM Plan compilation.

Short-term constraints on travel and group gatherings are being considered and on-line or remote learning and communication options will be used where necessary, adjusting some of the equipment related costs to ensure equal opportunity to all beneficiaries. In the case where field campaign are required and direct technical assistance of international experts is required but it is not possible due to the limitation in movement as a result of temporary measures due to the COVID-19 pandemic, a combination of remote guidance by the international experts and utilization of national experts will be used to ensure the implementation of the activities.

Component 3: Governance of the Cuvelai and Kunene River Basins

Historically the two countries have cooperated closely in the management of these two basins, in particular for the Kunene Basin, largely as a result of its evident hydropower potential. The Permanent Joint Technical Commission (PJTC) was established based on Article 2.2 of the Agreement dated 21 January 1969 (the Third Water Use Agreement) to act solely in an advisory capacity, to study and report on matters relating to the Third Water Use Agreement. It was particularly instructed to oversee the implementation of development projects on the river encompassing the construction of three dams, a power station, and a pumping station. The mandate was renewed in the agreement of 1990. There are proposals to transform the PJTC into a river basin commission similar in nature to other River Basin Organizations (RBOs) in the region, such as CUVECOM on the Cuvelai River basin.

Cooperation on the Cuvelai is more recent but has moved forward rapidly starting with the signing of the CUVECOM Agreement in 2014, the establishment of a CUVECOM Secretariat and work on a transboundary IWRM Plan.

Completion of the TDAs for each of the two basins will see a considerable quantity of information being collected and analyzed. There will be a need to support the setting up of an information management system for the two basins. This will be administered by the joint secretariat and accessible by both commissions and other stakeholders.

Governance of the Cuvelai and Kunene river basins will be improved under this component through the achievement of six main outputs:

- Transboundary governance structures are well developed and functioning well. This is to be achieved through further capacitation of the recently formed CUVECOM and proposing measures for implementation to ensure that CUVECOM is sustainable in the long-term. One of the aims of the work under this output is to transform the Kunene PJTC into a River Basin Commission, either with its own secretariat or making use of a joint Cuvelai/Kunene secretariat.
- Permanent joint secretariat to support both CUVECOM and the PJTC (or future Kunene RBO) is established and strengthened with:

- o the establishment of the Operational and Financial Management Structure (Accounting Systems, Procurement Systems, Financial Management Systems, HR Policies & Manuals, Host Country Agreement, etc.)
- o Institutional Functional Analysis conducted for CUVECOM and Kunene Commission to suggest a sustainable structure for the Joint Secretariat
- o An adequate internet connection and a suite of virtual tools and digital solutions that allow the Secretariat in Namibia and its satellite office in Angola fully capable of remote conferencing, regular communication and document sharing with Commissioners and focal ministries in Luanda and Windhoek to work together remotely even without face-to-face consultations.
- o Costed Sustainability Plan for the Joint Secretariat developed for approval
- Legislation, policies, strategies and plans are assessed. This is aimed at assessing existing and planned national legislation, policies, strategies, plans in each member state with the aim of identifying differences constraining transboundary management. Proposals for policy strengthening and/or policy harmonization will then be made. The assessment will be included in TDAs.
- Information Management Systems is established. The information management system will support the dissemination of newly acquired information and knowledge about the two basins through the basin TDAs and policy briefs, leading to strategic decision making and the implementation of the basin-wide IWRM Plans.
- Effective and productive cooperation between universities in both member states and with CUVECOM and PJTC/KUNENE Commission. Recent initiatives supported by CUVECOM have seen the development of close cooperation between University of Namibia and University of Agostino Neto in Angola. A draft memorandum of understanding is being drawn up. It is envisaged that the universities can provide assistance through research work carried out by students and that mutual benefits can be accrued through internships within CUVECOM and PJTC/Kunene Commission. Activities under this output will promote increased levels of cooperation and extension to cover the Kunene and Cuvelai basins.
- Gender mainstreaming strategy is developed and implemented as the integral part of the IWRM Plan implementation. The importance of gender mainstreaming is heavily emphasized in the IWRM Plan for the Cuvelai Basin, but as yet little progress has been made in terms of implementation. There are a number of areas where the project could support gender mainstreaming throughout the project implementation. The Gender Strategy for the two basins IWRM plans to be (further) developed with support from the project, will be adopted by the CuveCOM and the PJTC. The gender mainstreaming strategy will make sure that the gender considerations are incorporated throughout the IWRM plan development and implementation process, leading to the women empowerment results in the basin. CUVECOM and PJTC will rely on national and sub-national institutions and expertise in both planning and implementation process.
- o In Angola, the gender mainstreaming strategy is focused at two levels: 1) local government (provincial, municipal and communal administrations) and 2) communities. At the community level, the project, making use of available gender mainstreaming expertise and experience, will continue to provide support and training to community level disaster response teams (some already set up by Civil Protection) and water and sanitation groups (set up by various NGOs). In the support and training of those groups, gender aspects will be emphasized as has been done previously under the UNDP-LDCF Cuvelai project.
- o For Namibia's Gender Policy, which is aligned to the SADC Gender Policy, Monitoring and Evaluation is done by the Ministry of Gender Equality, Poverty Eradication and Social Welfare. Each Ministry, including Ministry of Agriculture, Water and Land Reform (MAWLR), has a focal person who will be responsible to ensure the Gender Mainstreaming is implemented. The gender focal point in the MAWLR will therefore play a key role in both planning and implementation, drawing on resources and experience available in the Ministry of Gender Equality, Poverty Eradication and Social Welfare.

Further, the project will support the Secretariat of the CuveCOM and Kunene PJTC to play an active and catalytic role to promote the cross-sectoral coordination and collaboration, especially after the Kunene PJTC is also upgraded to become a Commission, throughout the implementation of the IWRM Plan, especially at the national and sub-national levels through the development and implementation of NAPs. Cross-sectoral dialogue is always a challenge because of the nature of the organization of government. River Basin Organizations also often failed to take adequate measures in the past to promote and ensure cross-sectoral participation at the planning and implementation stages; however, they are becoming more aware of the importance of cross-sectoral dialogues for the implementation of the IWRM Plan. They are well positioned to promote them.

Component 4: Capacity in water resources and environmental management in Angola strengthened

The source areas of both rivers lie in areas that were devastated during the Angolan Civil War. Many people were forced to flee, huge numbers of mines were laid and major de-mining efforts lasting years to make the areas safe. Rebuilding continues today. The concerned provinces (Cunene, Huila and Huambo) are development priorities for the Angolan Government. Considering that the Angolan Central Highlands form the water tower for the Kunene, Cubango and Cuito rivers towards the south as well as the Cuvo and Cuanza rivers northwards, their management is absolutely critical, not only for Angola but also for Namibia and other neighboring countries, which are water-stressed. The waters coming from Angola flowing into southern Africa region through these transboundary rivers will become more important to ensure water security in the sub-region, where it is expected to get even drier in a long-term with the impact of climate change. Collecting data on climate and water resources, both surface and groundwater and building a clearer picture of the value of ecosystem goods and services provided by the water tower will be key aims of the component. Strengthening the data availability in the Angolan Central Highlands will also enable us to conduct economic valuation of the ecosystem goods and services from this important ecosystem.

Management of water resources and the environment in Angola is carried out by GABHIC (Office for the management of the Cunene, Cubango and Cuvelai river basins and the Provincial Environmental Offices and the

National Directorate for the Environment. A lack of capacity means that many management functions are not adequately performed. The effective management of water resources depends to large extent on the availability of water resources data and land-use information. There is a severe lack of recent data in the Angolan portion of both basin. The situation in Namibia is better, but there are significant gaps. It is important to stress that the availability of data in the upstream parts of both basins (in Angola) will help planning and management in both countries. Both water resources planning and flood early warning in Namibia can greatly benefit from improved data in the Angolan part of the basins. Benefits of addressing environmental degradation on the Central plateau will ultimately go beyond the two basins concerned by this project with positive impacts as far away as the Okavango in Namibia and Botswana. The project also will support the wider utilization and/or sharing of land-use information (and its potential impacts on water resources management) through the improved inter-sectoral coordination and collaboration.

Improved and strengthened management of the water resources and environment in both basins within Angola under this component through the achievement of four main outputs:

- Institutional strengthening within the basins, to be provide to both GABHIC the Provincial Environmental Offices and the National Directorate for the Environment. It is also proposed to strengthen the CUVECOM satellite office in Ondjiva and to create “focal points” in the office of the provincial administrations of Huambo and Huila provinces (in Huambo and Lubango). These officers will have an important role to play in i) supporting actions proposed under this Component ii) in supporting institutional strengthening of CUVECOM and the PJTC and iii) with the Community-based projects of Component 5.
- Strengthening of technical capacity, through training in water resources modelling and GIS in the Kunene basin aimed at supporting scenario analysis. Training in flood risk mapping and flood management in the Cuvelai basin. Training in hydrological monitoring (quantity and quality) in both basins
- **Strengthening of data collection and analysis.** Provision of software (licenses) for water resource and floodline modelling. Provision of equipment for climate and hydrological monitoring. Provision of equipment for water quality sampling and analysis.
- **Economic Valuation of the ecosystem goods and services provided by the Angolan Highlands ecosystem.**

Component 5: Enhancement of livelihoods at community level

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Realizing the sustainable and resilient livelihoods for the basin communities will be at the centre of the proposed interventions. Improved livelihoods and increased resilience and adaptive capacity to climate change a variability are critical to both poverty alleviation and sustainable development.

During consultations for the first IWRM Plan for the Cuvelai basin, stakeholders frequently highlighted the lack of water harvesting/storage as a leading challenge for most communities within the basin. There have been recent initiatives to develop water harvesting schemes and other types of small-scale resilience building projects in the Namibian part of the Cuvelai basin under the CuveWaters project. These included i) rain and floodwater harvesting, ii) groundwater desalination and ii) sanitation and water re-use. Experience from these interventions will be used for the development of community-based floodwater harvesting and aquaculture projects in the Cuvelai basin on both sides of the border, but predominantly in the Namibia portion.

In the upper parts of the Kunene basin, on the Bie Plateau and southwards on the escarpment, land degradation has been associated with poor farming practices and related issues. Integrated livelihood-based watershed management activities can be effective in addressing both environmental issues and improving livelihood of farmers and their families. This will be the focus of community-based projects in the Kunene basin, predominantly in the Angolan portion of the basin where the vast majority (>95%) of the population live.

Integrated community-based activities aimed at sustainably enhancing livelihoods **could** be achieved through the following outputs:

- **Water harvesting and diversification of livelihood activities.** This include the development of aquaculture for example but options will be discussed with the communities. Outputs include:
 - o Options short-listed with communities and technical advisors

- o Shortlist of option, preliminary project designs
- o Agreement on implementation support partners (NGOs, local government etc)
- o Assessment of technologies and stakeholder-driven identification of sites (Cuvelai, Angola and Namibia). Implementation of community-based projects
 - Livelihood-based watershed management pilot projects. This is aimed at preventing and/or reversing land degradation through enhanced and sustainable livelihood activities. Outputs include:
 - o Agree on focus areas for pilot projects (Kunene basin in Angola and Namibia).
 - o Design of integrated interventions in consultation with stakeholders
 - o Agreement on implementation support partners (NGOs, local government etc)
 - o Assessment of technologies and stakeholder-driven identification of sites (Kunene, Angola and Namibia). Implementation of community-based projects

This component will be CUVECOM/PJTC driven, coordinating and planning together with NGOs, local authorities and line ministries and working with the communities. Indeed, consultation with stakeholders in the Cuvelai basin showed that they want to see CUVECOM playing a role in promoting and supporting water-related community-based development. There is thus a need for capacity strengthening within the Secretariat to ensure that community-driven activities are sustainably and strategically continued in the basin. This is included as Output 5.2 and links directly with Component 3.

In terms of implementation, within the Namibian portions of the basins, the existing Small Grants Programme (SGP) may be a suitable vehicle for implementation. The experiences of the NBI small grants programme and of Namibia in ORASECOM and both countries in OKACOM can also provide guidance in the implementation of these type of pilot projects. In Angola, it may be more suitable to involve the local administrations which are focused on supporting community development as a result of the high priority for development afforded to the areas which were hardest hit by the civil war. The project will support CUVECOM and PJTC to work closely with the relevant regional/provincial governments, local authorities, catchment management authorities and/or community leaders to implement these community-based activities to ensure the sustainability and increase the potential for replication in the future.

In the case where field campaign are required and direct technical assistance of international experts is required but it is not possible due to the limitation in movement as a result of temporary measures due to the COVID-19 pandemic, a combination of remote guidance by the international experts and utilization of national experts will be used to ensure the implementation of the activities.

The final output under this component, Output 5.3, will focus on the piloting of flood early warning system for communities in selected hotspot settlements. This will link to 1.4, the putting in place of a real-time transboundary flood early warning system.

Component 6: Outreach and Knowledge Management for replication, upscaling and stakeholder engagement

Stakeholder engagement will be strengthened through targeted communication. Replication and upscaling are supported through exchange of knowledge, best practices and lessons learned. This will be achieved through 5 outputs:

- Stakeholder Engagement Strategy and Communication Plan developed and implemented.
- Targeted policy briefs and communication products produced
- Exchanges with other RBOs and relevant regional institutions, in particular with RBOs in SADC region, SADC Groundwater Institute, etc.
- Active contribution to the learning and knowledge sharing activities and events organized by the GEF IW: LEARN, including the GEF IWC
- Timely Project M&E to inform adaptive management for successful delivery of project results, including MTR and TE.

4) alignment with GEF focal area and/or Impact Program strategies;

The project is fully aligned with Objective 3 of the International Waters Focal Area: Enhance water security in freshwater ecosystems, in the GEF-7 Programming Directions. The proposed project interventions, including co-financing activities, will be relevant to all three areas of strategic actions under this objective.

Both Kunene and Cuvelai river basins are facing multiple stressors at the transboundary basin level. These present both opportunities for cooperation and the potential for conflict at the transboundary level as well as between stakeholders at the country levels. The countries sharing the basins have demonstrated their firm commitment to transboundary cooperation through the establishment of the Cuvelai Watercourse Commission (CUVECOM) in 2014 and the Permanent Joint Technical Committee (PJTC) on the Kunene River in 1969^[11]. Both countries have agreed that the PJTC should be upgraded into a river commission and that there should be close cooperation between this new commission and CUVECOM. Through the proposed project interventions, the countries will aim to enhance water security in freshwater ecosystems through advance information exchange (IW 3-5) and through regional and national cooperation on shared freshwater resources (IW 3-6). While the investments in water, food, energy and environmental security (IW 3-7) is rather limited at this foundational phase of the GEF support to both CUVECOM and the PJTC, the limited investments made during this foundational phase are expected to generate knowledge which will support replication and upscaling in the future.

5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

Incremental Cost Reasoning and Expected Contributions from the baseline investments:

The proposed regional project, to be financed by GEF, would not be successful without the baseline investments and political commitments made by the countries. The baseline investments from the basin countries have successfully established both the PJTC for the Kunene River basin and CUVECOM for the Cuvelai River basin. The PJTC has been running based on these investments since 1990 (when the agreement was renewed between Angola and Namibia), and before. Country contributions are approximately \$40,000 annually. While CUVECOM Agreement was signed only in 2014, an interim secretariat was established with the support of GIZ for some years. The CuveCOM secretariat is now supported through contributions from both countries (\$50,000 per year from each country).

Building upon the baseline investments from the member states to the activities of the PJTC and operations and activities of CUVECOM, which are critically important to keep these institutions functional, GEF support will enhance the institutional, operational and technical capacity of the CUVECOM (and eventually KUNENE Commission) Secretariat and ensure its/their sustainability. This will contribute to the long-lasting transboundary benefits. GEF support will also result in a long-term strategic document (IWRM Plan) for the PJTC and the Kunene River basin and a new, improved IWRM Plan for the Cuvelai basin, which will include a focus on the second 5 years of the plan (2025-2029). These plans will guide any future investments by the national governments, by international cooperating partners, and/or by the private sector in the basins so that they will be aligned with strategic priorities agreed for the basins.

Building upon the rapid assessment carried out in 2015 with GIZ support, together with other work, a first IWRM Plan was finalized in 2019, with detailed interventions outlined for 2020-2024. This Plan acknowledged the many gaps that need to be filled and included actions for filling them. CUVECOM requested GEF support through UNDP to develop the TDA. The TDA will not only fill some key knowledge gaps identified during the drawing up of the first IWRM Plan, but also include the Causal Chain Analysis and the future development scenario analysis. GEF support will fill priority knowledge gaps at the basin level (mostly through the activities under Comp 1) to collect key data to be included in the TDA, but the TDA would not be completed without the baseline investments made by the countries for various water resources monitoring activities and studies conducted at the national levels.

Despite the long history of the PJTC, there is currently no transboundary IWRM Plan for the Kunene basin. However, there have been several studies over the years, mainly associated with the construction of dams for regulation, in support of hydropower generation, and for bulk water transfers. In particular the countries carried out a joint study to compile a plan for the integrated utilization of the water resources of the basin in 2001. The knowledge base is, therefore, significant and will provide a basis for the TDA requested by the PJTC. As with the TDA for the Cuvelai basin, the TDA will include the Causal Chain Analysis and, using an updated version of the existing basinwide water resources model, investigate a range of future development scenarios. GEF support will fill priority knowledge gaps at the basin level (mostly through the activities under Comp 2) to collect key data to be included in the TDA. Just like for the Cuvelai basin, the TDA for the Kunene transboundary river basin would not be completed without the baseline investments made by the countries for various water resources monitoring and modelling activities, information on ecosystems within the basin, collected within and outside of the national park boundaries, and studies conducted at the national levels.

The inclusion of the future water resources development scenario analysis in the TDA is a practice piloted successfully for the Cubango-Okavango River basin and is proposed as essential components for both the Cuvelai and Kunene TDAs. The natural resources of both rivers will need to be utilized further to support the development needs of the basin countries and its population for them to achieve their respective SDG targets. In order to ensure future development activities are sustainable and improve all three pillars of sustainable development (economic, social and environmental) and achieve the balance between the efforts to maintain or restore its ecosystem integrity and the development efforts, some analyses on trade-offs will provide useful information to policy decision makers to determine future development trajectories. GEF support on the future water resources development scenario analyses in both basins will inform the PJTC and CUVECOM's technical advice to its member states and influence the future decision making for the basin's sustainable development by the member states. It is worth stressing that while the two basins are separate, the scenario analyses for each basin will have to be linked, even integrated so as to take into account the existing and planned major water transfers between the two basins (essentially from the Kunene to the Cuvelai basin).

Co-financing:

Co-financing from several international cooperating partners (ICPs), already identified during the PIF development stage, will each bring significant contribution to the achievement of the project objective as well as of the long-term vision of the PJTC and CUVECOM, and they are fully complimentary to the proposed GEF support.

- BGR have committed to follow up work in the Namibian portion of the Cuvelai basin aimed at furthering investigations on the Ohangwena Aquifer...
- CRIDF have confirmed that their new cycle of funding has been approved. They are keen to support activities in the Cuvelai basin and have had some initial discussions with the CUVECOM Secretariat. However, unless there is a further cycle of funding or an extension, the CRIDF activities will have been completed by the time this project starts.
- Both countries are providing contributions to support the operations of CUVECOM and PJTC. Staff time to prepare for and participate in the CUVECOM meetings and other meetings organized to discuss transboundary issues within the Cuvelai basin and to provide technical support to transboundary initiatives in the basin; all direct costs (travel, organization, etc.) associated with these meetings; existing equipment and facilities to be made available for the project, etc (+/- USD 1.5 million by Namibia over the two basins, +/- USD 1.5 million by Angola)
- Both countries are supporting data collection activities in water resources (surface and groundwater), the environment and water and sanitation. Namibia uses near-real time weather satellite data for flood forecasting in the Cuvelai Basin. Initiatives related to water quality monitoring in the basin, pollution control, monitoring, management activities, Initiatives related to water resources monitoring (both surface and ground water) and modeling in the basin; water extraction permitting and management activities, Initiative related to ensuring security of water supply and environmental management (+/- USD 3 million by Namibia over the two basins, +/- USD 3.1 million by Angola)
- The Toyota Tsusho Corporation will provide major financial support (for 4 years (2021 - 2024)) for the "Mitigation of the Effects of Drought in the Southern Region of Angola" project. They will finance groundwater development in Curoca, Cahama and Ombadja municipalities in Cunene province and will include the i) construction of 282 water holes/wells and ii) the construction of pilot water supply systems (supported raw water reservoir; elevated tank;

compact water treatment unit; fountain and laundry; watercooler for livestock; solar pump; and water supply pipes) on the right bank of the Cunene River in the municipalities of Curoca, Cahama and Ombadja. This support is part of the Program of Actions to mitigate against the Effects of Drought in the Provinces of Cunene, Huila and Namibe.

- The Ministry of Environment and Tourism in Namibia provides funding for a number of areas including i) the protection and management of key species and natural habitats and ii) wildlife and protected area management and iii) environmental management and regulation.
- Although not yet confirmed, there is a strong possibility that GIZ will extend its support to CUVECOM (to be confirmed during the project development phase).

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and

The project will directly address the need for multinational cooperation supported by CUVECOM and the PJTC, and more broadly by SADC. The project, together with co-financing partners, will strengthen both CUVECOM and the PJTC's institutional, technical and coordination capacity so that they can function effectively as centres for harnessing, coordinating and channeling political and economic interests from both public and private sectors in these adjacent basins.

Through the development of the Transboundary Diagnostic Analyses and the IWRM plans, the countries will agree a set of transboundary priorities for the two basins, which will guide both transboundary and national investments in the basin in the future. Securing political commitment to the transboundary priorities for the basins will reinforce future cooperation and collaboration between both countries to realize various benefits to be generated in the basin. Political commitment from both countries to the IWRM plans as well as to SADC revised Protocol on shared watercourses will become particularly important where national policies are required to be adjusted to achieve the better harmonization at the basin level.

The project will promote the effective IWRM (SDG6.5) at the transboundary, national and local levels. It will ensure the inclusion of the improved knowledge of the Cuvelai/Ohangwena Aquifer and climate information, produced by the co-financing activities, into the TDAs, which will support the promotion of the conjunctive management of surface and groundwater resources as well as climate-resilient basin planning in the basin.

It will further support the participating countries to carry out informed policy dialogue at the basin level to address increasing water, energy, food demands in the future and how they can be met in the environmentally sustainable and socially inclusive manner for the population of both basins. The tangible contributions to be made by GEF investment to this policy dialogue include i) the development of the future water resources development scenarios, the future development scenario analysis, and the inclusion of the findings from the future development scenario analysis in the Kunene TDA, and ii) a transboundary flood early warning system in the Cuvelai basin.

The project will contribute towards the prevention of conflicts between stakeholders both within country borders and across borders. Tensions between perceptions on upstream uses will be eased through the promotion of concrete activities, even if only at the pilot level. Improved flood warning for downstream inhabitants in Angola and Namibia is one example. Another is the impact of addressing land degradation on sediment load and improved baseflows (Kunene). There are also downstream to upstream conflict risks such as herders moving cattle in search of water. The project can also contribute to diffusing these tensions.

GEF support will also support the countries to move towards understanding and agreeing the ecological flows for the Kunene River basin. These will provide environmental safeguards to the riverine ecosystems (another GEB expected from the project) – and indirectly social safeguards to those populations whose livelihoods depend on the healthy and productive ecosystems – in the basin while decisions related to water allocation is made by the basin states separately as well as collectively.

7) innovation, sustainability and potential for scaling up.

Innovation

-

Pre-emptive engagement to sustain one of Africa's water towers: A key area of effort is focused on preventing further degradation and promoting conservation in the source areas of the two rivers in Angola. These areas form part of the central plateau water tower in Angola. This

Positive community engagement and support through action on the ground: Considerable attention has been paid to relating the TDA work and strategic IWRM thinking to action on the ground. Beneficiary stakeholders, the communities, have in many cases been exposed to consultative sessions aimed at ensuring that their concerns and interests are taken into account in the planning process but they are now becoming impatient and want to see that these processes are able to bring progress and action. The proposed programme includes a significant component of community level pilot demonstration projects aimed at improving livelihoods and water security (better access to safe water and better protection from floods). The actions are related to the work of the TDAs and will be scaled up as part of the IWRM plans.

Heightened visibility for greater support - Emphasis on CUVECOM and PJTC as coordination bodies and drivers of action at the local level: It is proposed that CUVECOM will be the key coordinating body for the promotion and implementation of the Community-based projects and that they will play an important role in ensuring that national and regional reference groups are active in the support of the Component 5 actions. It is proposed to have a Community liaison

officer within the CUVECOM Secretariat for the course of the programme, whose job will be to drive the consultation around, and the implementation of the Component 5 projects. Achieving improvements for the communities will be effective in rapidly increasing the visibility and credibility of CUVECOM and the PJTC and this will, in turn, support the sustainability of these institutions.

Sustainability

-

The firm commitments of both governments in the recent establishment of CUVECOM and the long history of the PJTC for the Kunene basin provides a strong basis for the sustainability of impacts, in particular transboundary benefits, delivered by this project. Therefore, the project interventions will be designed to support and catalyze the Governments' various efforts to strengthen CUVECOM and the PJTC's institutional, technical and operational capacity. For each intervention proposed in this project, how the expected results delivered by the intervention will be sustained beyond the project duration has been considered, which will contribute to the Sustainability Strategy of the project when that is developed during the project preparatory phase. During the project preparatory phase, these considerations will be expanded in more details through discussions with the governments and stakeholders.

Some outputs proposed in this project will directly contribute to the sustainability of the two RBOs. The relatively weak institutional and development status of the Angolan portion of both basins is recognized by the project and also by the Angolan Government which has defined the concerned provinces as priorities for development. This will greatly enhance the sustainability of development and management efforts. The two IWRM plans will provide long-term strategies that will guide future investments in the basin by the governments, private sector, and international cooperation partners so that these investments will collectively contribute to the achievement of the Vision for the basin. Future development scenario analysis, to be included in the TDA, will also influence the policy discussions and decisions on the future development trajectory and strategy at the basin level, which will have a long-lasting impact.

Potential for scaling up

-

All the proposed IWRM Plan demonstration activities under Component 5 will be designed with the replicability and scalability in mind. Each of the proposed IWRM demonstration activities (livelihood-based watershed management, floodwater harvesting, aquaculture and flood early warning) will address targeted priority issues for the two basins (land degradation in the Kunene and lack of water and food security in the dry season and flood early warning in the wet season in the Cuvelai), identified during the scoping studies for the first Cuvelai IWRM Plan and through various studies in the Kunene basin. The demonstration, with its limited investment scale and limited geographical scope, will not be expected to yield significant stress reduction results at the basin

scale, but it will be expected to present quantifiable evidence to support potential environmental and transboundary benefits from these investments, if replicated and upscaled across the basin at a scale that matters. It will also aim to demonstrate how various stakeholders in the basin can actively take part in the IWRM implementation in practice in general, and in stress reduction activities in particular. They will also reinforce the visibility of CuveCom and the PJTC in the basin and among the basin populations, which will in turn facilitate the role of these institutions in supporting the scale-up efforts. The best practices and lessons learned from the demonstration projects will be codified and disseminated to further promote the replication potential.

The use of pilot demonstration projects and their scaling up is a thread running through the recently published first Cuvelai IWRM Plan. The concept has already been discussed and agreed with stakeholders during meeting in 2018, 2019 (and earlier).

[1] The population in the Angolan portion of the basin was estimated at 1,975,429 (2001 census) and in the Namibian portion at 15,000 in 2005. These have been extrapolated assuming 2%/annum growth.

[2] Namibia – Groundwater for North of Namibia (CEB), Phase III, BGR

[3] According to the rapid assessment was carried out by Hatfield Consultants (2017), the basin population is 1.35 million but it is acknowledged that this figure could be higher

[4] ERM (Environmental Resources Management, Southern Africa). 2009. Baynes Hydropower Environmental, Social and Health Impact Assessment (ESHIA). Final Scoping Report. Prepared for the Permanent Joint Technical Commission PJTC by ERM in association with EnviroDynamics, Urban Dynamics, IRDNC, Holísticos and Angola Research Institute.

[5] There is water quality yearly data available especially from 2010 to 2016 for Kunene River. MAWF/Namibia has put in place a water quality monitoring programme for all rivers country-wide. Challenge is finance (budget cut) especially after 2016. We must strongly motivate that this kind of monitoring should be carried out regularly because land degradation has been identified as a problem in the basin.

[6] Wastewater disposal is being regulated by the permit system and appropriate measures to regulate contractors pumping from septic tanks are being finalized. Fines will be given to defaulters. However, awareness raising is still needed for community members to understand wastewater management in the Cuvelai Basin.

[7] The agreed vision for the Cuvelai River Basin in 2040: “A sustainably managed basin with a secure, resilient and prosperous population”

[8] The TDA report will be split into two separate volumes, one for each basin and there will be separate IWRM Plans for each basin, but sharing the same timelines and a number of projects common to both basins. However, the operational, financial and management efficiency will be optimized as much as possible during the project implementation through a carefully designed procurement plan and work plan.

[9] Discussions are still ongoing as to whether the existing CUVECOM’s secretariat will be expanded to become a joint secretariat providing support to both commissions (CUVECOM and future Kunene Commission transformed from PJTC) or whether each Commission will have its own secretariat.

[10] The UNDP-LDCF project has three components:

- Component 1: Transfer of appropriate technologies and related capacity building for climate and environmental monitoring infrastructure
- Component 2: Enhanced human and institutional capacity for increased sustainable rural livelihoods among those communities' areas most prone to flooding in the region.
- Component 3: Increased understanding of climate change adaptation and practices in climate-resilient development planning at the local community and government levels

[11]The PJTC was originally formed in 1969 through an agreement between South Africa and Portugal. The agreement renewed by Angola and Namibia in 1990

1b. Project Map and Coordinates

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

See Annex A for the basin map.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities No

Civil Society Organizations No

Private Sector Entities No

If none of the above, please explain why: Yes

The PIF was developed through close consultations with the Governments of Angola and Namibia through CuveCOM and PJTC structure. The draft PIF were presented twice at their meetings to solicit their inputs. In addition to that, an inter-sectoral consultation meeting was held in Luanda, Angola with experts and stakeholders from various ministries.

Indigenous People and local communities in the basins, CSOs, Private Sector entities were not consulted directly during the PIF development stage specifically on draft PIF, mainly due to lack of resources to conduct such stakeholder consultation activities during the PIF development stage; however, inputs that were collected from them during the IWRM Plan development were reflected in the PIF.

DURING THE FIRST 5-YEAR IWRM PLAN DEVELOPMENT PROCESS FOR THE CUVELAI RIVER BASIN (2020-2024), AND DURING THE RAPID ASSESSMENT, THERE WAS SIGNIFICANT CONSULTATION AT BOTH THE NATIONAL AND REGIONAL LEVELS. IN THE CASE OF THE MOST RECENT CONSULTATIONS CARRIED OUT FOR CONSULTATION ON THE GIZ-SUPPORTED IWRM PLAN, THESE CONSULTATIONS WERE MAINLY ACHIEVED THROUGH THE FORMATION OF NATIONAL AND REGIONAL REFERENCE GROUPS EACH WITH 25 TO 40 PARTICIPANTS REPRESENTING A WIDE RANGE OF STAKEHOLDERS INCLUDING COMMUNITY LEADERS, TRADITIONAL LEADERS, SCHOOLTEACHERS, LOCAL GOVERNMENT, NGOs AND OTHERS. AS PART OF THE IWRM PLAN PROCESS CUVECOM COMPLETED ITS STAKEHOLDER-DRIVEN VISIONING EXERCISE RESULTING IN THE VISION AND STRATEGIC OBJECTIVES WHICH PROVIDES THE PLAN'S STRATEGIC FRAMEWORK.

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

The national and regional reference groups cited above will become working groups for consultation during the project preparation. They will play a particularly important role in the implementation of Component 5.

Further, disaster resilience groups, water and sanitation groups, and climate resilient agriculture groups in Angola part of the Cuvelai basin, organized by the LDCF Cuvelai project, are formed with representatives of local communities in the basin, and they will be also consulted during the project preparation.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Gender analysis and Gender Action Plan will be developed during the project development phase to ensure that gender mainstreaming considerations and any relevant gender-responsive measures will be fully integrated into project design and sufficient project resources will be allocated to such activities. Depending on the exact nature of the IWRM demonstration activities included in the project design, the project may contribute to generating socio-economic benefits or services for women as well. (to be confirmed prior to the CEO Endorsement Request.)

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

Private sector engagement will be explored in two ways through this project: 1) through Components 1 & 2, CUVECOM and the PJTC will explore innovative ways to bring the private sector on board in the IWRM and investment planning process. Their inputs will be taken into consideration in the future development scenarios. Private sectors to engage include not only those sectors traditionally active in the basin (agriculture, livestock) but also tourism and aquaculture; and 2) through Component 5, the enhancement of livelihoods at community level. It is important to stress that more than 80% of the basins' population are effectively private sector farmers, even if they are generally operating at a subsistence level. The pilot demonstration projects aim to improve the livelihoods of these communities, at the same time, protecting the natural resources on which they depend. While NGOs and local government will be involved in supporting the setting up of the various demonstration projects, and in the scaling up process, the aim is to ensure the sustainability of the interventions by making them economically and financially viable for the small-scale farmers and to encourage private sector-led entrepreneurship along the value chain from producer through to market including the development of value addition activities such as agro-processing.

A significant level of private sector investment to improve water security (supported by Toyota) is expected to be realized in the southern Angola. The proposal is under development and the Government of Angola will take a lead to ensure that the proposed GEF-funded project will closely coordinate and collaborate with this private sector investment during the project development phase.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risk	Rating	Risk Mitigation
Political commitment on the long-term IWRM Plan, developed based on the TDA, will not be secured (in the form of the ministerial endorsement)	Low	Both countries are committed to the joint management of the basin, not only at the technical level but also at the political level, as manifested through the establishment of the CuveCOM and through their ongoing discussion to transform the PJTC into the Kunene Commission. Both countries have gone through the process of securing the ministerial endorsement on the Cubango-Okavango River Strategic Action Programme (SAP) in the past; thus, they are experienced to show their political commitment through the ministerial endorsement. Also, they are aware that the strong commitment is needed for them to attract any external resources from their partners to implement the SAP or the IWRM Plan. Therefore, the risk is considered low. Nonetheless, the project is designed to produce a series of policy briefs to facilitate linking of scientific knowledge to management and policy decisions. By keeping the senior policy makers as well as politicians closely informed of the new knowledge and information will further reduce the risk of inadequate political commitment to the IWRM Plan.
Basin states will not be willing to release their data for use by Cuvecom or PJTC. This will pose a significant risk to the achievement of the project outcomes, as TDA, Information Management Systems and joint basin planning activities in general will all depend on data from basin states.	Low	Both governments have signed the SADC revised shared watercourse protocol, which provide the legal basis for the member states to cooperate for joint management of the shared watercourse, such as the Cuvelai or Kunene River basin. Further, CuveCOM and PJTC have been discussing the importance of data collection and sharing as well as strengthened monitoring activities to collect real-time data for management decisions. It is considered as one of their priorities; hence, GEF support is requested to address. Hence, the risk is considered low.

		less. Hence, the risk is considered low.
Lack of inter-sectoral coordination and consultation at local, sub-national and national levels will hamper the effective IWRM implementation in the basins.	Moderate	<p>The TDA-SAP(IWRM Plan)-NAP development process requires a strong inter-sectoral, multi-country consultation process. The project will support the two countries to establish inter-sectoral committees to support this process. Multi-sectoral coordination at the technical level will be strengthened through the TDA development process, while multi-sectoral coordination at the policy and political levels will be strongly promoted through the SAP (IWRM Plan) and NAP negotiation process.</p> <p>Strong engagement of communities and local stakeholders in the IWRM implementation will be ensured not only through the implementation of the Stakeholder Engagement Plan and the Communication Plan but also through the implementation of the SAP demonstration projects.</p> <p>For Angola, the project will provide focused interventions to strengthen inter-sectoral coordination at national and sub-national levels under Component 4 to further mitigate this risk.</p>
Poor coordination among various projects supporting CuveCOM and PJTC, funded by different entities, leading to sub-optimal results delivery or duplication of work.	Low	<p>The countries are highly willing to coordinate activities through CuveCOM and PJTC for their respective basins in order to maximize their cumulative impacts as well as achieve resource efficiencies in their own investments towards the joint management. Required level of coordination efforts are currently not overwhelming since both CuveCOM and PJTC currently have limited number of partner-funded initiatives that they need to coordinate. In addition, the project support the capacity strengthening of the Secretariat, which will provide valuable support to the two governments to coordinate various projects and initiatives as a coherent programme.</p>
Poor coordination among various existing and upcoming projects that are relevant to the ecosystem-based approach to the Angola's water tower protection leading to the suboptimal results delivery and/or policy or management recommendations with c	Moderate	<p>Coordination of various existing and upcoming projects and initiatives in the headwater regions of the two basins is not a simple task. Angola will be supported to do the mapping of relevant initiatives in the targeted geographical areas during the project development phase to identify the potential projects and initiatives that the project should aim to coordinate and collaborate. The information gathered through the mapping exercise will influence t</p>

onflicting messages		he details of the project interventions, in particular under Comp 4, to mediate and manage this risk.
Further ecosystem and water quality degradation in the basins due to the development pressure and uncoordinated development activities across the basin. Development pressure is high in the basins, especially in Angola, and some major development decisions are made outside of CuveCOM or PJTC discussions or mandates.	Moderate/ High	The project will support CuveCOM and PJTC in the development of future water resources development scenarios, taking into account e-flow requirements, potential impacts from climate change and variability. This exercise, to be included in the TDA, will inform policy makers beyond the water sector about potential positive and negative impacts from different water resources development scenarios and help establish common knowledge base across the member states. Further, the project will strengthen the engagement of regional/provincial government stakeholders in the management and policy discussions of CuveCOM and PJTC as part of the efforts to raise awareness among the regional/provincial government stakeholders of the importance of water resources and the basin ecosystem integrity. With this approach, the project will support policy makers directly involved in CuveCOM and/or PJTC as well as those who are not to make more informed decisions about potential future development options that are supported by the basin resources and that would affect the basin resources at the same time.
The project activities will worsen, instead of improving, the livelihoods of basin communities even unintentionally in the name of conservation	Low	Realizing sustainable and resilient livelihood improvement of the basin community is one of the overarching objectives of the proposed project. Thus, due consideration is given to the potential impacts of the proposed project interventions on the livelihoods of basin communities. Through the application of Social and Environmental Safeguard Procedures during the project development phase, details of this risk will be identified, and appropriate risk mitigation measures developed and incorporated into the project design.
Financial, operational and/or safety challenges emerged due to COVID-19 in the countries (not necessarily in the basin areas) imposing risks on the timely and effective implementation of the project activities	Moderate	COVID-19 pandemic may impose restrictions on working arrangement, movements, procurement, supply chains, local market, etc., which will all impact operational efficiency of the project. It may have impacts on security stability in rural areas or in fragile states where there existed limited resilience to absorb such unpredictable and unprecedented external shocks. The level and type of risks will change as the COVID-19 pandemic situations change in particular location in the basin as well as in two countries. The

		<p>e project will regularly screen for COVID-19 risks through available tools and mechanisms (e.g. Social and Environmental Safeguards, Stakeholder Engagement and M&E Plans implementation) and update Atlas Project Risk Register to develop and adjust mitigation actions to deal with changing risks.</p> <p>The project will build the CuveCOM and the Kunene PJTC's capacity to continue operating and coordinating closely with their member states and stakeholders remotely even without face-to-face consultations. These measures will build the operational resilience in the CuveCOM and the Kunene PJTC against shocks that were caused by COVID-19. These are reflecting the lessons learned and good practices from other River Basin Organizations in southern Africa which had to make some quick adjustment to their modus operandi when hit hard by COVID-19 earlier in 2020.</p>
Government (and partner) priorities (and resultant financial resources) shifted to COVID-19 response, recovery and preparedness operations, leaving less attention to the joint management of the Cuvelai and Kunene River basin resources.	Med	<p>During the project development phase, the details of the project design and interventions will be developed carefully, taking into account the governments' and basin communities' needs in the context of COVID-19 pandemic, especially their recovery efforts. The project will not contribute to the COVID-19 response efforts, but its relevance to the COVID-19 recovery efforts will be highlighted. Also, the project – and the Governments' efforts to strengthen the joint management of water resources in the Cuvelai and Kunene River basins in general – will build resilience of the basin communities. The resilient communities will be able to weather the pandemic better in the long run. By communicating explicitly and strategically the project's relevance and importance to the COVID-19 recovery efforts, the project will manage the risk of resources and priorities diverted to other initiatives.</p>
Risk of drawing attention to the IWRM Plans	Low	<p>Sufficient attention has been drawn to the Cuvelai IWRM Plan through its development process and its approval process in the recent past. The project will support the CuveCOM and Kunene PJTC to organize a ministerial endorsement of their respective IWRM Plans. Cuvelai and Kunene basins in Angola is among the high priority provinces for development by the national governments. Cuvelai basin in Namibia is one of the most densely populated areas which suffers the cycles of flooding and drought events i</p>

		<p>n the recent years. With all of them combined, the risks associated with the attention from the countries and basin stakeholders will be low.</p>
<p>Risk of mobilizing resources required for IWRM Implementation</p>	Moderate	<p>Securing sufficient financial resources to initiate and continue with the IWRM Plan implementation has been a significant challenge for many river basins, transboundary or otherwise. The Cuvelai and Kunene River basins will not be an exception.</p> <p>However, for Cuvelai, high priority is given from both Angola and Namibia on Disaster Risk Reduction after a series of flooding and drought events in the basin, which caused significant damages to their development and the livelihoods of the basin communities. With the high priority, national budget and international aid has been channeled to the region. The project will support both Angola and Namibia to place the Cuvelai IWRM Plan and its implementation in the strategic place in the context of the DRR efforts so that the IWRM Plan implementation can be supported by DRR-related investment as well. Further, the project will support the donor roundtable to attract financial support to the IWRM Plan implementation.</p>
<p>Increased climate variability and change</p> <p>(see section on climate risk screening below table)</p>	Moderate to high	<p>The basins are situated in southern Africa, where many global circulation models indicate that the climate will be drier, flood and droughts will be more frequent and more intense. Thus, this risk is high.</p> <p>That is why it is even more critical to have the long-term, basin-wide IWRM Plans as a long-term strategic document for each basin, complemented by a 5-yearly investment plans and National Action Plans. To manage adverse impacts of increased climate variability and change, we need to apply inter-sectoral, holistic, and stakeholder-driven approaches, guided by long-term vision. The</p>

		project will mitigate risks associated with the increased climate variability and change through the development and implementation of selected priority activities in the IWRM Plans.
Project delays, constraints, or capacity-related risks related to the COVID-19 global pandemic – Medium-term	Moderate	<p>Project Preparation (ProDOC) Phase (short to medium term): Since there is a significant possibility of constraints on travel and group gatherings remaining through to the end of 2021 and even 2022 (medium-term), there is a risk of disruption to the stakeholder consultation process, which is a key part of the ProDOC preparation phase.</p> <p>These constraints will be considered in the final planning of the ProDOC work, when the situation at that time is known. On-line or remote consultation options will be used where necessary, adjusting some of the physical workshop-related costs to ensure equal opportunity to all beneficiaries. .</p>
Project delays, constraints, or capacity-related risks related to the COVID-19 global pandemic – Long-term	Low	Project implementation could start in early 2022, with the first field activities starting by the second quarter. Since there may still be some risks associated with COVID-19, implementation of the various components will have to be planned taking into account COVID-19 related risks, as well as any still existing constraints on international, regional and local travel.

Climate risk screening.

As indicated in the table above, the risk of significant climate change over the two basins resulting in both increased climate variability (particularly precipitation), higher temperatures is moderate to high. However, the **risk posed to the project in terms of meeting its objectives is considered moderate**. This is because:

- As reflected by the project title, “Enhanced water security and community resilience in the adjacent Cuvelai and Kunene transboundary river basins”, the project is all about enhancing resilience in the face of climate and water variability.
- The objective of the overall project is to strengthen the water security and resilient livelihoods of the populations in the adjacent Kunene and Cuvelai river basins through improved transboundary and conjunctive water resources management. This objective underlines the fact that the entire focus of the project is on ensuring water security and resilience in the face of climate change and already high levels of historic climate variability.

- Extreme drought and flood have always been the major challenges facing the communities in the two basins, especially in the Cuvelai basin. The communities have already developed adaptation mechanisms and while they remain vulnerable, especially to increasing levels of variability, these mechanisms (accessing groundwater via deep hand-dug wells, creating flood recession storage etc) remain valid adaptation and resilience-building measures.
- Building a better knowledge base through the TDAs provides the project with opportunities to enhance the various drought and flood adaptation measures that already exist. Improved and detailed knowledge allows better planning and design. Projects deliverables such as flood warning systems will protect the population against the effects of climate change.
- Developing community-based pilot demonstration projects that are protect the natural resources of the basins and at the same time, the livelihoods of those who depend on the resources is a proven and effective way of combatting the impacts of climate change.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

Proposed institutional structure and M&E Coordination at the project level:

The project execution arrangements are still being explored in consultation with the countries and will be finalized during PPG. The highest decision-making body of the project will be the Project Steering Committee (PSC), consisted of the participating Governments, represented by their representatives in CuveCOM and PJTC, UNDP (GEF IA) and the selected Executing Agency. *If any additional membership is required, this will be decided during the project Preparation Phase or Inception Phase.* PSC will coordinate the project level M&E activities will meet at least once a year to monitor the project's implementation progress and progress towards the expected results. The PSC will approve the project's work plan and budget, provide strategic guidance and decisions to the Project Manager and ensure that the project is well coordinated with other regional and national initiatives and other co-financing activities to maximize the potential synergies (see below for examples).

The Project Management Unit (PMU), headed by the Project Manager, will be responsible for the timely implementation of work plans approved by the PSC and for the day-to-day activities of the project. UNDP Implementing Partner (GEF Executing Agency) of the project will be responsible for all recruitment and procurement of goods and services in a timely manner within the budget approved by PSC. It is proposed that the PMU is hosted by the CUVECOM Secretariat (headquarters in Oshakati and satellite office in Ondjiva, Angola. There will also be "focal points" in the office of the provincial administrations of Huambo and Huila provinces (in Huambo and Lubango) who will play a critical role supporting implementation of several actions.

Possible coordination with other relevant GEF-financed projects and other initiatives:

The project is expected to work closely with the following GEF-financed projects:

- GEF-7 Sustainable Dryland Forest Management project in Angola, implemented by FAO (starting in 2021)
- LDCF-funded project for the Angolan part of the Cuvelai River basin (ending in 2021)
- GEF5 Expansion of Protected Areas System project in Angola (ending in 2021)
- GEF-7 MFA (BD&LD) "Integrated approach to proactive management of human-wildlife conflict and wildlife crime in hotspot landscapes in Namibia (starting in 2021)

GEF-7 Sustainable Dryland Forest Management project in Angola, to be implemented by FAO, will be CEO Endorsed soon. Once it is, the details of the project interventions will become available and the Cuvelai and Kunene project will work closely with the FAO SFM project, especially on the issues around the protection of the Angolan water tower and its ecosystems.

The LDCF Cuvelai project in Angola will be completed by 10 August 2021; thus, there will be no overlap in the project implementation period with the proposed GEF IW regional Cuvelai and Kunene project. We will make sure the regional project will build upon the results achieved by the LDCF Cuvelai project. During the project development phase of the regional Cuvelai and Kunene project, we will take into account findings and recommendations from the Terminal Evaluation Report of the LDCF Cuvelai project. The LDCF Cuvelai project plans to set up an Early Warning System (EWS) for the Angolan part of the Cuvelai basin. The intention is that this will then share information and cooperate with the existing EWS in the Namibian side of the basin. The regional project can ensure this transboundary cooperation on EWS in the Cuvelai basin using CuveCOM as a transboundary cooperation platform, as long as the technical installation of EWS in Angola is completed by the LDCF project. The regional project can support – through Component 4 – its operation and all possible response preparations to the alerts on the Angolan side, should this not be supported by the LDCF project. And through Comp 1 and 3, the transboundary data sharing and response preparation mechanism will be supported. Under the LDCF Cuvelai project, the Civil Protection of Cunene has trained communities in Angola in disaster response and set up local response teams in (so far) 14 communities. This initiative could be expanded through the upcoming regional project to basin-wide.

The LDCF Cuvelai project organized local communities in disaster resilience groups, water and sanitation groups, and climate resilient agriculture groups to strengthen community-level structures to complement a local government structure, yet it wasn't so effective in terms of building the capacity of local and provincial government in the basin, which was identified as a critical capacity gap. This project will make efforts to narrow this gap through activities under Component 3 and 4 (in Angola).

The GEF-7 MFA (BD&LD) project addressing human-wildlife conflict (HWC) and wildlife crime in hotspot landscapes in Namibia will contribute to vulnerable populations in disaster prone area and biodiversity sensitive areas becoming resilient to shocks and climate change effects and benefit from natural resources management. One of the sites/hotspots selected is within the Cuvelai basin (near the Etosha Pan). Thus, we will ensure that both projects will keep each other informed of their strategic planning efforts and community-based interventions. CuveCOM will be included in the stakeholder list of the HWC project and the HWC Project contacts will be included in the CuveCOM stakeholder list.

The GEF5 Expansion of Protected Areas System project in Angola, which has activities in Bicular National Park in Huila, straddling the Cunene River, will be closing (in 2021, or early 2022, even with an extension) before this project will start the implementation. Even extended, the project will not have a lot of activities to be carried out in the Bicular National Park during the extended period. We will however consult with the project and its stakeholders during the project development phase to reflect any relevant lessons learned and best practices in the design of this project.

In addition, it is also expected to work closely with the following projects/initiatives supported by others:

- Water security project to be financed by Toyota Tsusho Cooperation in partnership with the Government of Japan in the southern Angola.
- Community resilience project in the southern Angola supported by the World Bank.
- Community resilience project in northern Namibia

A close coordination and collaboration with the water security project to be financed by Toyota Tsusho Cooperation will be realized by the coordination efforts by the Government of Angola, in particular, GHABIC.

With the World Bank (Angola), UNDP Angola is in close contacts. We will exchange information during the project development phase to identify ways in which we can increase synergies and complementarity and avoid duplication.

A close coordination and collaboration with the community resilience project in northern Namibia will be realized by the coordination efforts by the Government of Namibia.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The proposed project is fully consistent with national development plans of the participating governments and priorities identified in NAPA and NAP. In addition, it is fully consistent with the priorities identified in the Regional Strategic Action Programme for the transboundary water resources management within the SADC region.

In Angola, the project is fully in line with the updated Drought Recovery Framework 2018-22 specifically with regard to the focus on vulnerable areas and populations in the drought affected south of Angola. This focus is also being incorporated into the new National Development Plan that is not yet available but will be so shortly.

In Namibia, Vision 2030 makes several references to the challenges of disasters as well as the need to identify cost-effective, flexible and adaptable management approaches and national disaster response strategies to the potential impacts of climate change. The IWRM Plans and their implementation can be well considered as one of such cost-effective, flexible and adaptable management approaches to manage risks and reduce damage from floods- and droughts-related disasters. The project objective and proposed interventions are also fully in consistent with the Water Resources Management Act 11 of 2013, which provides for the management, protection, development, use and conservation of water resources of Namibia, and in good alignment with the purpose of the Disaster Risk Management Act of 2012.

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The entire component 6 is dedicated to the knowledge management. The component will play a critical role in ensuring the sustainability of the impacts delivered by the project through strengthening the science-to-governance linkages, catalyzing required policy and management decisions, strengthening stakeholder engagement in the IWRM Plan implementation at both basins, and sharing knowledge, best practices and lessons learned with other projects, initiatives and interested stakeholders within the basins and beyond for potential replication and upscaling.

In particular, frequent information exchange and knowledge management with other River Basin Organizations within SADC, in particular, with the OKACOM, ORASECOM, LIMCOM (all supported by UNDP-GEF projects) and ZAMCOM (for the Angolan headwater ecosystem management) will be expected to learn from each other on good practices and lessons learned on the IWRM Plan (or SAP) implementation in general, community-engagement activities, stakeholder engagement efforts and results, the effective coordination with the existing local, provincial and national governance structure, etc.

The project will actively contribute to IW: LEARN global and Africa regional activities and disseminate its lessons learned and good practices using the IW:LEARN platforms.

Lastly, the project will make active efforts to share the information and exchange knowledge with other non-IW projects, especially SLM projects in the basin to strengthen collaboration and coordination with their SLM efforts in the context of the IWRM Plans and an integrated, cross-sectoral approach to their implementation.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Project Information

<i>Project Information</i>	
1. Project Title	Enhanced water security and community resilience in the adjacent Cuvelai and Kunene transboundary river basins
2. Project Number	<i>PIMS 4736; GEF ID 10565</i>
3. Location (Global/Region/Country)	Regional (Angola and Namibia)

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
<i>Briefly describe in the space below how the Project mainstreams the human-rights based approach</i>
<p>The rights most relevant to this project are: rights to clean and safe water and good sanitation, rights to a healthy environment, and rights to adequate food and free from hunger. The project will support respect and support those rights in the project target areas (Cuvelai and Kunene river basins) through the development and implementation of the Integrated Water Resources Management (IWRM) Plans. Human-rights based approach (HRBA) seeks to promote and protect human rights by strengthening and building capacities in rights-holders in order to empower them to claim their rights and valid entitlements, and in duty-bearers in order to enable them to meet their obligations to respect, protect and fulfil all human rights. IWRM, from the perspective of HRBA, can be seen as a planning and implementation tool to realize the HRBA. IWRM Plan development and implementation helps identi</p>

erspective of HRBA, can be seen as a planning and implementation tool to realize the HRBA. IWRM Plan development and implementation helps identify tangible indicators and targets for the duty-bearers to meet gradually in time, which measures clearly how much they meet their obligations, and it helps strengthening capacities in rights-holders so that they will be made aware of and empowered to claim their rights and valid entitlements during the development and the implementation of the IWRM Plans.

- Within both basins, but especially the Cuvelai basin, the overall project is focused on improving sustainable water and food security for the community members, including the poorest in society. During consultation with national and regional stakeholders as part of the IWRM planning process in the Cuvelai, amongst other things, stakeholders (which included both duty-bearers and rights-holders) were asked to highlight and prioritize their concerns and issues related to water. This included a stakeholder-driven assessment of the main challenges and issues for women and children and for the full range of stakeholders including subsistence and commercial farmers, fishermen and fish farmers, traders, providers of transport, leaders and decision makers and others. Access to water, impacts of flooding and drought (including impacts on food security) were at the top of the list and hence have been prioritized. Accordingly, the project will prioritize to address these issues, in particular through the Component 5 activities and through key gap-filling work for the transboundary diagnostic analysis.

- The project will strengthen water governance in and for the two basins, through the maintenance and reinforcement of the national and regional stakeholder working groups (these exist already for the Cuvelai basin), which will function in a similar way to the catchment management committees that already exist in Namibia and which are planned under new legislation in Angola. Strengthened water governance through catchment management committees and water associations help reinforce the most commonly respected procedural human rights principles: Participation, Accountability, Non-discrimination and Transparency, or PANT. Participation of stakeholders is already well entrenched in Namibia. Planners (duty-bearers) are held accountable by various water users and community members (rights-holders) through a transparent mechanism. Less so in Angola. For this reason, the project includes Component 4, which is targeted to strengthen water governance capacity in Angola, which helps further mainstreaming the HRBA. Component 4 includes the posting of three staff on the ground in Ondjiva, Lubangao and Huambo (provincial capitals). Their main role will be to assist in coordination and communications between and with the communities, CUVECOM and PJTC, local government and line ministries. This will be particularly useful for supporting community involvement in Component 5, but also in work around the TDAs and development of the IWRM Plan to ensure stakeholders' participation during both the planning and implementation stages. Functioning of the working groups will include communication channels that permit the airing of grievances and other feedback during the design and the implementation phase of the IWRM Plans.

- It is important to note that Component 5 of the project, which concerns sharing responsibilities and benefits with local communities and civil society in conserving and sustainably using basin resources, is focused on community-based ecosystem management. This means that improved management of natural resources is accompanied by real livelihood benefits for all in each of the demonstration project areas. This is recognized as a condition for sustainability. The proposed interventions under Component 5 are designed to ensure a high level of stakeholder participation during demonstration on project site selection, design and implementation. Participation, inclusion and non-discrimination are principles which underpin the whole process. Beneficiaries will form user associations for demonstration project implementation. These associations will work according to rules set down and agreed by the user associations themselves but according to management guidelines that ensure the realization of PANT.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

- Equal representation of gender is already realized currently in CUVECOM at its highest decision-making body (i.e. two female and one male commissioner in Namibia and two male and one female in Angola). The same is true for the Kunene PJTC. Gender equality achieved at the highest decision-making level should ensure that the proposed gender mainstreaming measures are not sidelined.

- As indicated in the Cuvelai IWRM Plan, in line with the commonly held gender roles in both Namibia and Angola, women hold the primary responsibilities of managing water supply and sanitation at the household level. This is especially the case in the Cuvelai Basin where a large number of house

holds are headed by women because of the large number of men that leave the area in search of work. In the meantime, it is traditionally men who are responsible for decision making concerning water resources management and development at international, regional, national and local levels. Fully involving women, indeed ensuring that they play some of the leading roles, will be critical in the implementation of Component 5. To support this, women will be properly represented in the national and regional working groups and the design and implementation phase of the community-based activities under Component 5 to make sure that their voice is reflected.

- Output 3.6 of the proposed programme indicates that “Gender equality and women empowerment efforts mainstreamed into all CUVECOM and Kunene Commission policies and practices through the development and implementation of the Gender Strategy”. Development of the Gender Strategy, proposed as a priority action in the Cuvelai IWRM Plan, and already partly developed under the GIZ support programme, and its implementation will contribute to the improvement of gender equality and women’s empowerment in the basins.
- Although the mainstreaming of gender aspects is heavily emphasized in the IWRM Plan for the Cuvelai Basin, as yet little progress has been made in terms of implementation. Representation of community-level stakeholders is still largely male. There are a number of areas where the programme will support gender mainstreaming throughout the project implementation
 - Sensitize stakeholders on the relevance of gender mainstreaming and gauge their interest or willingness
 - Promote the dialogue and collaboration of gender experts in the basins, supporting activities on an ongoing basis
 - Train all CUVECOM and PJTC technical task teams and other relevant project steering committees on the value of gender mainstreaming, and provide concrete support
 - Integrate gender mainstreaming in the Flood Risk Forecasting Systems.
- Although gender mainstreaming has been relatively successful at the senior levels within CUVECOM and the PJTC, it is clear that major efforts are still required at the community leadership level, despite the fact that women already often play the leading decision-making roles. Achieving the right balance is key to the successful implementation of Component 5 interventions.
- The project will invest in the gender analysis and action plan development during the preparatory phase, which will help identify specific gaps and priority areas in the basins and a set of specific actions that the project will take to fill these gaps and address priorities.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The overall objective of the programme is to move towards the agreed vision for the two basins. Agreeing the vision for the Kunene Basin will be one of the first things to be done as the TDA and the IWRM Plan are developed. For the Cuvelai River basin, the Vision is already developed and approved as “A sustainably managed basin with a secure, resilient and prosperous population by 2040 and beyond”.

Environmental sustainability is at the heart of the proposed project and one of the most important results to be delivered by projects financed by the Global Environment Facility. It is also one of the principles of an IWRM Plan, which aims to strike balance between the development needs and conservation, and applies the precautionary approach.

Further, specific to the project sites, the basins’ population depends heavily on natural resources for their livelihoods, for their health, for their resilience to climate change, and their well-being. It is both clear and accepted by stakeholders that improved livelihoods can only be achieved through an approach that is environmentally sustainable.

The main steps that will be followed to ensure environmental sustainability can be summarized as follows:

- Building a much stronger knowledge base of the basin ecosystems through the TDAs

- Improving stakeholder involvement across both basins through strengthening water governance, with special attention to reinforcing the process in Angola, and implementing the IWRM approach.
- Improving technical and institutional capacity at all levels and with a special emphasis in Angola
- Development of IWRM Plans that are based on sound knowledge bases (especially with respect to natural resources) and input from the appropriate stakeholders from multiple sectors with various interests.
- Implementation of pilot demonstration projects that tackle the key environmental-livelihood issues (community-based ecosystem management approach) and which can be taken to scale
- A robust monitoring and evaluation system

Part B. Identifying and Managing Social and Environmental Risks

<p>QUESTION 2: What are the Potential Social and Environmental Risks?</p> <p><i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>			<p>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</p>
Risk Description	Impact and Probability (1-5)	Significance (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.
<p>Risk 1: Project could potentially require some adjustments or alterations to traditional or conventional ways of access to water practiced by water users, if they are found to be contributing to inefficient water utilization, environmental degradation, water quality degradation, etc., in order to achieve a long-term water use</p>	<p>I = 3 P = 2</p>	<p>Moderate</p>	<p>In the quest to achieve the long-term water use efficiency, environment sustainability, stronger resilience of communities to climate change, and improved water quality in the basins, there are changes that traditionally or com</p>	<p>While this risk will be closely looked at through SESP during the project design, the identification of actual individuals or groups that will be requested to alter their practices, where this happens, how it will have to happen, will not happen before we have better knowledge base about the basin ecosystems and about the impacts of ongoing human activities on them. This knowledge base will be built during the project implementation</p>

<p>In order to achieve a long-term water use efficiency, environment sustainability, and fair distribution of water resources. If not designed or implemented well, such changes could cause harm or be carried out without the engagement of marginalized/vulnerable groups.</p> <p>Principle 1</p> <p>Standard 1</p> <p>Standard 5</p> <p>Standard 6</p>			<p>ces that traditionally or commonly practiced practices, which are found to be environmentally unsustainable and/or leading to inefficient water use, etc., may need to be altered during the project implementation period, which could potentially restrict the water access which has been traditionally practiced.</p>	<p>age base will be built during the project implementation.</p> <p>Therefore, what should/can be done during the project development, based on SESP done during the preparatory phase, is to ensure the project's design provides a process and mechanism in place to assess potential social and environmental impacts (both short-term and long-term) of any restriction or altered access to water resources by any water users, with a particular focus on marginalized individuals or groups <i>prior to</i> any of such restrictions or alterations occur, to develop and implement management measures, and to monitor the implementation of such measures and their effectiveness. The project design will also ensure that an appropriate grievance mechanism will be in place and will be well known to stakeholders.</p> <p>The procedures for ensuring full SES compliance will be presented in an Environmental and Social Management Framework (ESMF), to be prepared during the PPG.</p> <p>If these potential impacts could stem from policy-level activities (including TDA/SEP), then the project will be designed to use the Strategic Environmental and Social Assessment (SESA) approach for the developments of the relevant policies, in accordance with SES requirements.</p> <p>Finally, a stakeholder analysis and comprehensive Stakeholder Engagement Plan will be prepared during the PPG.</p>
Risk 2: Inadequate data (especially for the Angolan portions of the basins) for t	I = 3	Moderate	Lack or insufficient data from/for the Angolan part of th	Component 4 will be designed to provide for special support to the Angolan portion of the basin with specific

<p>the Angolan portions of the basin, for the required hydrological, water resources and flood modelling could hinder sustainable use of those resources.</p> <p>Standard 1</p> <p>Standard 7</p>	<p>P = 3</p>		<p>ing for the Angolan part of the basin has been a challenge to realize the basin-wide water resource planning and to set up a basin-wide early warning systems.</p>	<p>support to the Angolan portion of the basin with specific allowance for improved technical capacity and greatly improved data collection. CUVECOM and the PJTC will play a key role in ensuring that goals are met.</p> <p>This risk, and all others, will be included in the scope of the ESMF, as deemed appropriate during the PPG.</p>
<p>Risk 3: Under-representation of women in pilot project activities.</p> <p>Principle 2</p>	<p>I = 4</p> <p>P = 2</p>	<p>Moderate</p>	<p>Although women are well-represented in agriculture activities (less so for aquaculture), their representation on stakeholder groups is less evident</p>	<p>During project preparation (especially for Component 5) it will be necessary to introduce mechanisms (quotas etc) to ensure that women are adequately represented in the stakeholder groups to be set up to avoid under representation of women. A gender analysis will be conducted and a Gender Action Plan prepared during the PPG.</p>
<p>Risk 4: Climate change is expected to increase the frequency and severity of floods and drought in the project area.</p> <p>Standard 2</p> <p>Standard 3</p>	<p>I = 3</p> <p>P = 4</p>	<p>Moderate</p>	<p>It is widely accepted that increased droughts and floods that are observed in the basins are manifestation of climate change. While the lifestyles of the basins' inhabitants (esp. in Cuvelai) have been interwoven with a highly variable climatic regime and taking into account (both negative and positive) impacts of those events for decades, the increased severity of the events of recent years had surpassed the basin communities coping abilities and caused significant damages to their lives, livelihood and environment. The project will propose and implement actions that will help the basin communities to better deal with the new reality and build t</p>	<p>During the project design, areas where the risks of adverse impacts from severe floods and droughts are high will be identified, based on the already available knowledge, and those who live there will be considered as priority communities with whom the project will design and implement pilot activities to strengthen their resilience.</p>

			their resilience.	
<p>Risk 5: Groups who might trigger UND P's Standard 6 on indigenous peoples might reside in the project area (including area of influence); might be impacted (positively or negatively) by project activities; and have not yet been consulted on the project with the aim of achieving FPIC.</p> <p>Principle 1</p> <p>Standard 6</p>	<p>I= 4</p> <p>P= 2</p>	Moderate	<p>Indigenous People and local communities in the basins, CSOs, Private Sector entities were not consulted directly during the PIF development stage specifically on draft PIF, mainly due to lack of resources to conduct such stakeholder consultation activities during the PIF development stage; however, inputs that were collected from them during the IWRM Plan development were reflected in the PIF.</p>	<p>During the PPG, stakeholder analysis and other assessments will be carried out to confirm the presence of such groups in the project area. If confirmed, then the PPG team will initiate the FPIC process, in line with SES requirements, and include further procedures in the ESMF and comprehensive Stakeholder Engagement Plan. The need for an Indigenous Peoples Plan will also be confirmed during the PPG.</p>
<p>Risk 6: There might be physical displacement or resettlement proposed during the project implementation in order to realize improved water use efficiency, improved environmental sustainability, improved livelihood, or improved resilience to climate change.</p> <p>Principle 1</p> <p>Standard 5</p> <p>Standard 6</p>	<p>I = 4</p> <p>P = 2</p>	Moderate		<p>This risk, and all others, will be included in the scope of the ESMF, as deemed appropriate during the PPG. The need for a Resettlement Action Plan will be determined at that stage. The project will not support, directly or indirectly, forced evictions, in line with the SES prohibition.</p>
<p>Risk 7: The risks associated with the project's livelihoods support (Component 5) cannot be fully screened at this stage, as they will be designed during implementation. Those unknown risks could be social and/or environmental.</p>	<p>I = 4</p> <p>P = 2</p>	Moderate	<p>Livelihoods might include aquaculture, which can pose many risks.</p>	<p>The ESMF (prepared during the PPG) and/or the ProDoc will include separate procedures for screening, assessing and managing the risks associated with the livelihoods (including any small grant or similar mechanism) activities during implementation, to hardwire safeguards into the implementation of those activities.</p>

Principles/Standards to be determined			
	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see SESP for guidance)		Comments
	<i>Low Risk</i>	<input type="checkbox"/>	
	<i>Moderate Risk</i>	X	
	<i>High Risk</i>	<input type="checkbox"/>	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		Comments
	<i>Principle 1: Human Rights</i>	X	
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	X	There is a risk of under-representation of women in the planning, design and implementation of pilot projects
	<i>1. Biodiversity Conservation and Natural Resource Management</i>	X	
	<i>2. Climate Change Mitigation and Adaptation</i>	X	Climate change is and will continue to have an impact on the basin populations. Climate viability has always been the central challenge to subsistence agriculture, the main livelihood of the basins and climate change will add to this challenge
	<i>3. Community Health, Safety and Working Conditions</i>	X	
	<i>4. Cultural Heritage</i>	<input type="checkbox"/>	
	<i>5. Displacement and Resettlement</i>	X	

	<i>6. Indigenous Peoples</i>	X	
	<i>7. Pollution Prevention and Resource Efficiency</i>	X	

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
PIMS 4756-Climate Risk Screening-Kunene-Cuvelai-Annex	
4756 Cuvelai-Kunene SESP 22Sept2020	

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Julio Ingles Ferreira	GEF Operational Focal Point	MINISTRY OF ENVIRONMENT, ANGOLA	3/23/2020
Teofilus Nghitila	Executive Director	MINISTRY OF ENVIRONMENT AND TOURISM, NAMIBIA	4/8/2020

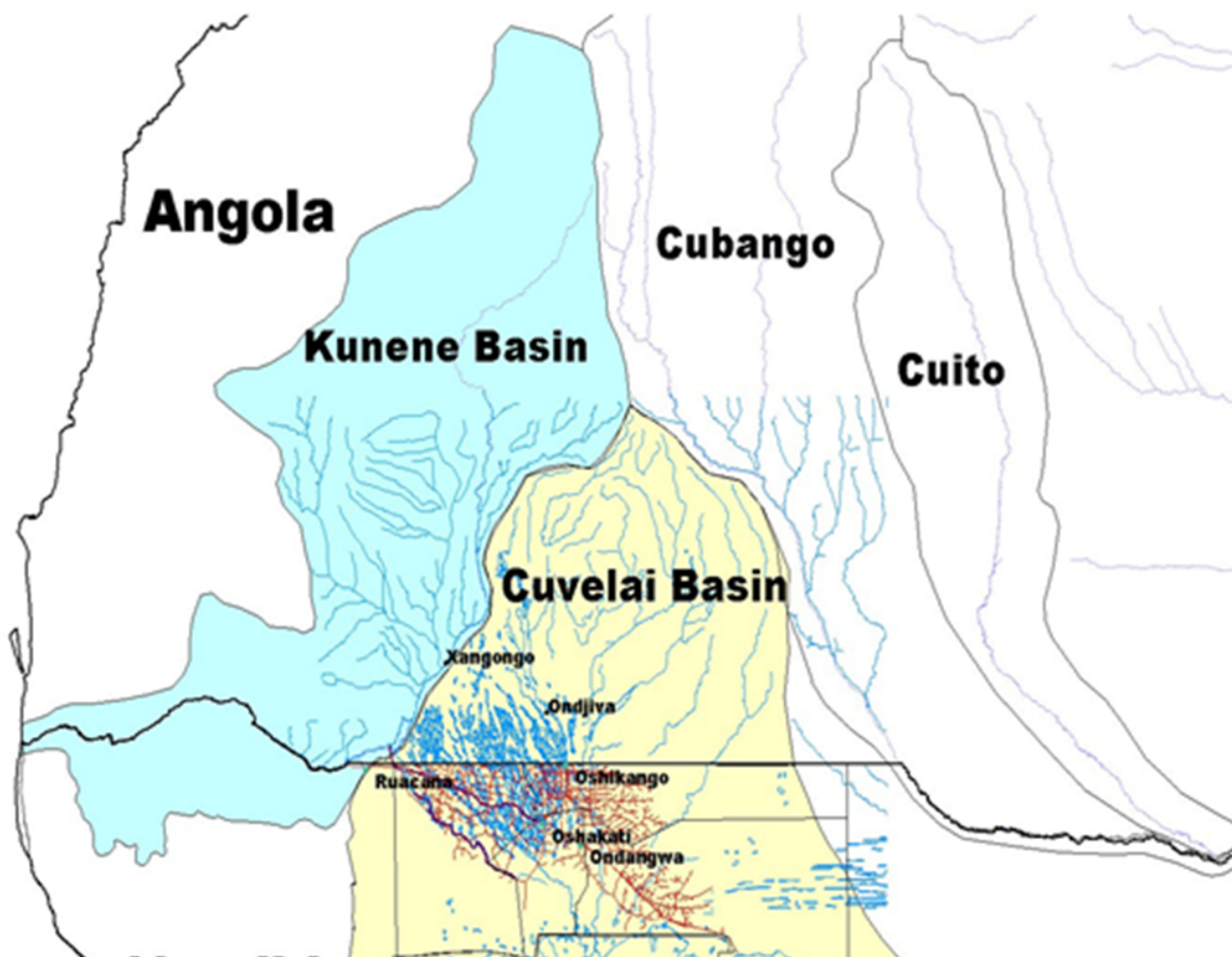
ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Annex A

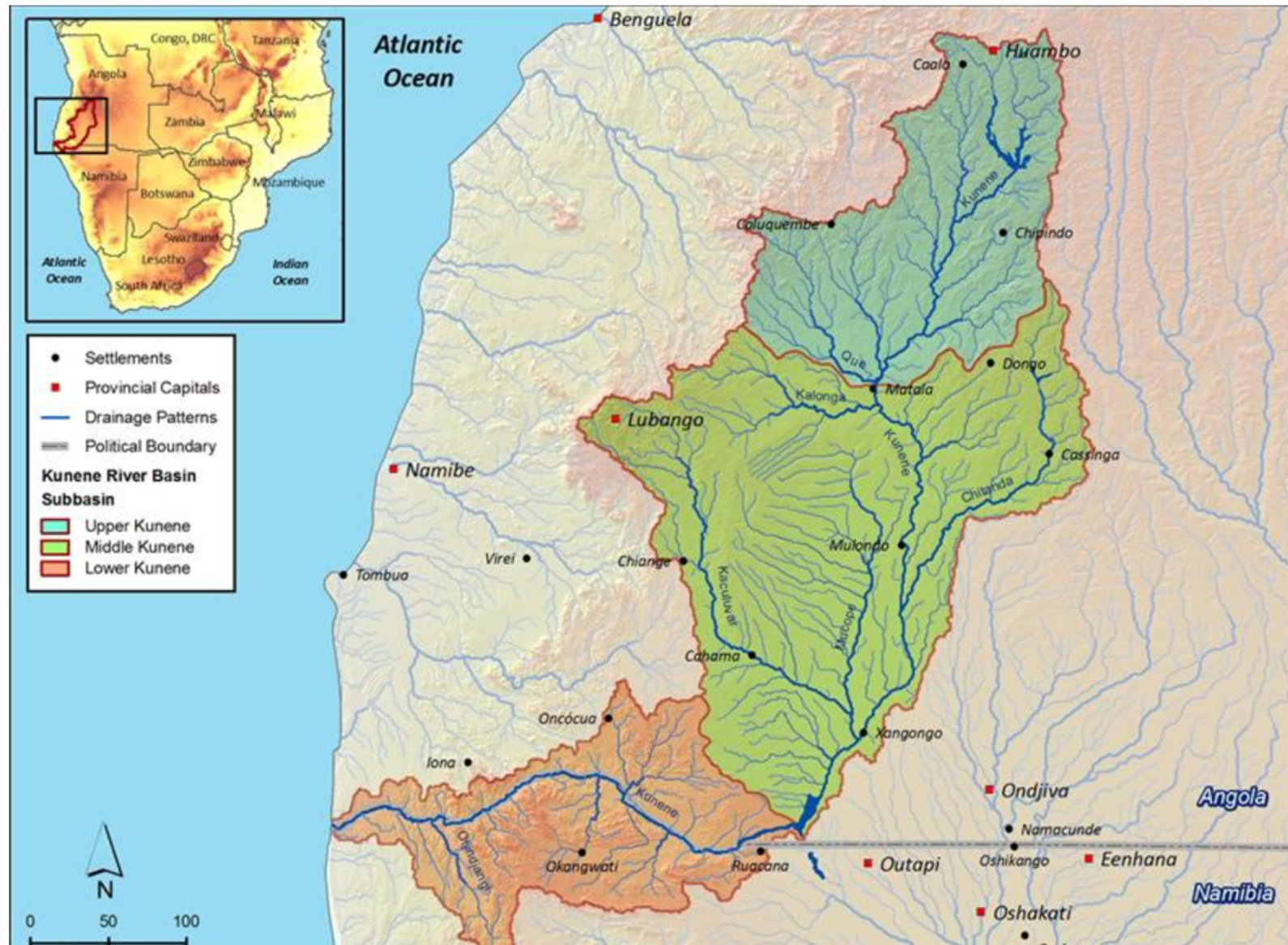
PROGRAM/PROJECT MAP AND GEOGRAPHIC COORDINATES

A map of the Kunene and Cuvelai basins



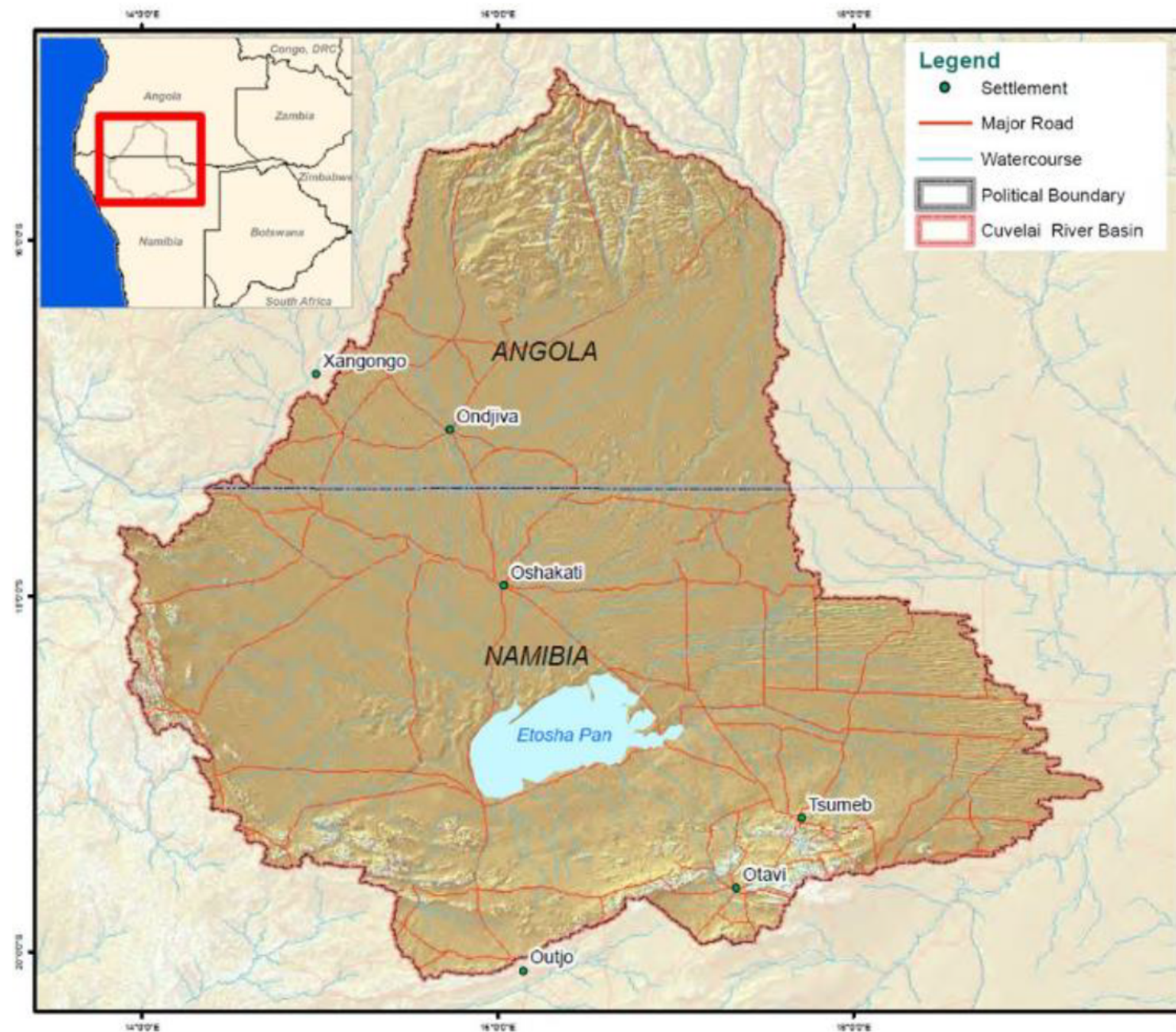


A map of the Kunene River, showing its sub-catchments

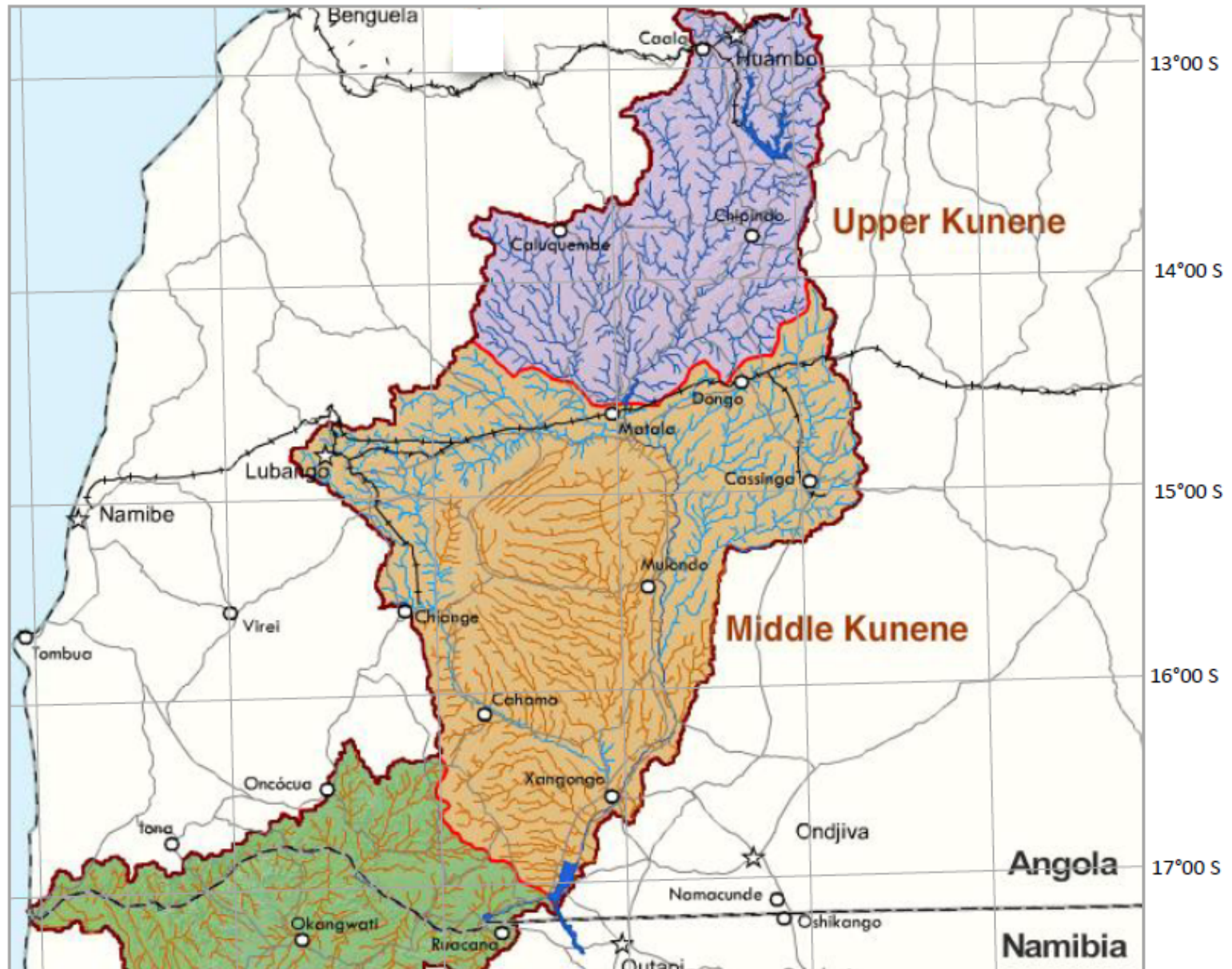


Source: http://www.kunene.riverawarenesskit.com/KUNENERAK_COM/EN/RIVER/WATERSHED.HTM

Map of the Cuvelai River basin (Source: Cuvelai IWRM Plan (by GFA Consulting))



Map of the Kunene River basin (Source: Kunene River Awareness Kit by Hatfield Consultants)





Annex B

GEF 7 Core Indicator Worksheet

Annex C

Project Taxonomy Worksheet

Annex D: Theory of Change

Project Objective: To enhance water security in the adjacent transboundary Cuvelai and Kunene river basins through planning and actions based on an improved knowledge base and transboundary cooperation together with interventions on the ground

