GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: Zambia Lake Tanganyika Basin Sustainable Development Project			
Country(ies):	Zambia	GEF Project ID:[1]	8021
GEF Agency(ies):	AfDB (select) (select)	GEF Agency Project ID:	P-ZM-AA0-024
Other Executing Partner(s):	Ministry of Lands, Natural Resources and Environmental Protection (MLNREP)	Submission Date:	30.08.2016
GEF Focal Area (s):	Multifocal areas	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program	[if applicable]	Agency Fee ($)	**696,753**

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $) GEF Project Financing	(in $) Co-financing
LD1-Program 1	Outcome 1.1: Improved agricultural, rangeland and pastoral management Outcome 1.3: Increased investments in SLM	GEFTF	1,242,642	6,747,000
LD2-Program 3	Outcome 2.1: Support mechanisms for forest landscape management and restoration established Outcome 2.2: Improved forest management and/or restoration	GEFTF	1,242,642	3,148,600
CCM-2 Program 4	Outcome A. Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration	GEFTF	1,357,936	3,148,600
BD-4 Program 9	Outcome 9.2: Sector policies and regulatory frameworks incorporate biodiversity considerations.	GEFTF	1,046,218	2,698,800
SFM-2	Outcome 3: Increased application of good management practices in all forests by relevant government, local community (both women and men) and private sector actors.	GEFTF	2,444,809	6,747,000
	Total project costs		7,334,247	22,490,000

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To improve natural resources management and the livelihoods of communities in Zambia's Lake Tanganyika Basin through the sustainable and integrated use of lake resources						
Project Components/ Programs	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Confirmed Co-financing**
Component 1. Development of capacities (skills, information) and investments for landscape approach to Integrated Natural Resources Management (INRM)	Inv	Outcome 1.1- Improved landscape planning in Zambia's Lake Tanganyika basin, through 2 district land management plans and guidelines	1.1.1 Comprehensive landscape management plans and associated guidelines developed in the two districts of Mpulungu and Nsama and validated by key stakeholders 1.1.2 Biodiversity and forestry monitoring plans formulated, implemented, and reported on in annual project reports (5 total)	GEFTF	3,438,690	11,245,000
		Outcome 1.2 - Improved capacity of technical institutions and community groups to implement landscape approach to INRM	1.2.1 Sustainable Forest Management (SFM) schemes - e.g. Joint Forest management (JFM), Community Forest (CF), Private forest, partnership parks - established in the two districts, leading to a reduction in forest degradation status from "low/moderate" to "very low" in a 12,000ha area 1.2.2 Soils and agricultural production improved in 7500ha, through application of climate smart conservation agriculture techniques 1.2.3 Nsumbu National Park and associated GMAs (Tondwa) clearly demarcated and sustainably managed, resulting in 40% reduction in poaching-related wildlife deaths compared, and 30% decrease in reported			

[3] Financing type can be either investment or technical assistance.

			animal/human conflicts, as compared to baseline (reported by Department of National Parks and Wildlife (DNPW), formerly ZAWA)			
		Outcome 1.3 - Increased capacities and investments supporting land rehabilitation and decreased deforestation (15 erosion control infrastructure systems established; at least 24 sustainable charcoal and brick production units established)	1.3.1 Soil erosion stopped and land rehabiliated in 15 critical sites around Lake Tanganyika 1.3.2 Sustainable charcoal production schemes disseminated and implemented, leading to the establishment and operation of at least 10 energy efficient charcoal kilns and 4 green charcoal production units 1.3.3 Sustainable brick production schemes disseminated and implemented, leading to the establishment and operation of at least 10 sustainable brick production units			
Component 2. Reduction of pressure on natural resources through diversification of livelihoods	Inv	Outcome 2.1 Increased contribution of agro and forest ecosystem services to national economy and local livelihoods (an additional 1000 households involved in alternative livelihood activities)	2.1.1 Improved service delivery from cooperatives, unions and microfinance institutions, resulting in 30% increase of households benefitting from such services as compared to the project baseline 2.1.2 Alternative income generating activities identified and implemented with 30 community groups, resulting in a 30% increase in income for participating households 2.1.3 Increased food production from agriculture through	GEFTF	2,424,340	6,747,000

			small scale irrigation, leading to a 30% increase in agriculture-based revenues for participating households 2.1.4 Community fish farms developed and tested in at least 4 communities, reducing pressure on Lake resources 2.1.5 Tourism development plans supporting biodiversity conservation formulated and implemented, leading to 50% increase in NP entry revenues, as compared to baseline (2015).			
Component 3. Policy enforcement and coordination of INRM interventions, monitoring and outreach activities	Inv	Outcome 3.1 Enhanced policy and institutional coordination for better service delivery and enforcement of the landscape management plans and livelihood initiatives (coordination bodies for sustainable natural resources management present in each district and at the regional level)	3.1.1 Policy implementation strengthened through harmonization and enforcement of key legislations in the 2 target districts, including 4 bi-laws forbidding unsustainable natural resource exploitation 3.1.2 Effective INRM coordination platforms in place at national, regional, district and community levels, involving 80% of local groups operating in project areas 3.1.3 At least 5 NGOs and 15 community groups reached by campaigns aiming to increase their awareness of natural resource management and improve their capacity to engage in effective natural resource governance	GEFTF	1,121,967	3,373,500

		Outcome 3.2 Project implementation based on results based management and application of project lessons learned in future operations facilitated (5 satisfactory PIR reports, 5 project-related knowledge products)	3.2.1 Adequate socio-economic and environmental data collected (gender disaggregated), monitored and used as outreach/training material, including on status of biodiversity 3.2.2 Project-related best practice guidelines for SLFM developed and lessons learned published 3.2.3 Simplified and participatory M&E system established, providing systematic information on progress in meeting project outcome and output targets			
				Subtotal		6,984,997	21,365,500
				Project Management Cost (PMC)[4]	GEFTF	349,250	1,124,500
				Total project costs		**7,334,247**	**22,490,000**

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Recipient Government	African Development Bank	Loans	22,490,000
Total Co-financing			**22,490,000**

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee[a] (b)[2]	Total (c)=a+b
AfDB	GEFTF	Zambia	Land Degradation	(select as applicable)	2,486,215	236,190	2,722,405
AfDB	GEFTF	Zambia	Climate Change	(select as applicable)	1,357,004	128,915	1,485,919
AfDB	GEFTF	Zambia	Biodiversity	(select as applicable)	1,046,279	99,397	1,145,676
AfDB	GEFTF	Zambia	Multi-focal Areas	SFM	2,444,749	232,251	2,677,000
Total Grant Resources					**7,334,247**	**696,753**	**8,031,000**

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*260,000 hectares*[6]
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*20,000 hectares*[7]
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*Direct: 2.6 million TCO2eq*[8] *Indirect: 8.8 million TCO2eq*
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries:*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries:*

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? NO

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

[6] Nsumbu National Park + Tondwa GMA

[7] Includes targets of min. 12,000ha under SFM and min. 7500ha under conservation agriculture

[8] Using Ex-ACT tool (See annex 4). Most of this result comes from SFM, avoiding forest degradation, over 20 years.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF

1. This section provides additional structured information and details on the project design, complementing the PIF. The main changes lie in the identification of three key barriers to the adoption of a landscape approach to INRM, and, as a consequence, in the formulation of project components and outcomes.
2. As explained in section A1-1 below, resolving the challenges in the Zambia part of Lake Tanganyika basin requires the adoption of a landscape approach, involving the active participation of all relevant stakeholders, promoting natural resource governance systems and using cutting edge knowledge and indicators for resilience in socio-ecological production landscapes to support adaptive management. This landscape approach to INRM was not properly reflected in the project components and outcomes as defined in the PIF. The way it was built, component 1 was mostly focusing on agriculture, component 2 on forestry and component 3 on biodiversity. Notwithstanding the relatively weak coverage of the climate change mitigation aspect, this structure did not reflect the principles of INRM, where natural resources must be managed in a systematic way. In addition, the relation between the defined outputs, outcomes and components also lacked coherence and clarity in the earlier document.
3. Therefore, during the project design phase a reconstruction of the Theory of Change was completed in order to properly address the three key barriers to the adoption of the required landscape approach to INRM as defined in section A1-1. This resulted in the re-organization of project outputs and outcomes and the re-phrasing of some components, outcomes and outputs. While the main objectives of each component and the overall contents of the project remain the same, outcomes and outputs have been reorganized, some have been added and others clarified/more precisely defined (in particular those dealing with climate change mitigation and biodiversity conservation) in order to ensure that they collectively achieve the expected results within each component, and reflect the intended landscape approach to INRM.
4. Component 1 of the project relates to necessary capacities for the adoption of a landscape approach to INRM. The project design process enabled to identify capacity gaps in terms of landscape planning, which was not captured in the PIF. In addition, the capacities of technical institutions and resource user groups are currently not adequate to INRM practice, and need to be strengthened through specific interventions to organize INRM implementation in the forest sector (SFM), the agriculture sector (farmers field schools for climate smart conservation agriculture) and the biodiversity sector (in particular in the Nsumbu NP and Tondwa GMA). Additionally, some investments are necessary to support INRM, in particular regarding land degradation in highly eroded areas, and the introduction of new capacities to reduce wood uses and forest degradation.
5. As was the case in the PIF, Component 2 of the project aims to reduce pressure on ecosystems through diversification of livelihoods. Indeed, the growing population increases pressure on the natural resources, and there is a need to intensify food production and to develop new sources of income, building on the ecosystem services available in the region (non-timber forest products, tourism). Aspects of forest management and restoration have been removed from this component, which now really focuses on different options of livelihood diversification. In particular, tourism development has been highlighted as an important aspect during consultation of wildlife institutions and civil society organisations, and was completely absent in the PIF. Not only tourism is a potential source of income for the local population, but it can play a major role in biodiversity conservation, as was demonstrated in other regions of Zambia, as for example in North Luangwa NP, which conservation has been a huge success.
6. Component 3 of the PIF included a number of activities relating to biodiversity conservation, with no evident link to the component title. Those have been removed (and distributed in components 1 and 2). Instead, the component was enlarged to policy enforcement and coordination of INRM interventions, which sits together with knowledge management and project monitoring and evaluation. Harmonization and enforcement of key legislations and the coordinated implementation of the project activities by the various sectoral partners (national, regional, district GRZ services, civil society groups) are key elements of success for INRM in the Lake Tanganyika basin, and relate to effective project management, monitoring, evaluation and reporting.
7. The new proposed structure is described in section A1-3 below.

A.1. Project Description

1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Natural resources of national and global significance

8. The proposed project focuses on the two districts of Mpulungu and Nsama, in the Northern Province of Zambia. Those two districts cover the Lake Tanganyika basin section pertaining to Zambia and illustrated in Map 2. Located in the Albertine Rift[9], the lake was formed about 12 million years ago, making it ecologically different from modern lakes formed by glaciers within the last 12,000 years. Its early species have undergone spectacular evolutionary productions during the long period of existence. The lake has many distinctions which give it a global significance (in addition to the local significance): its maximum depth of 1,470 meters (4,820 feet) makes it the deepest lake in Africa, reaching 642 meters (2,106 feet) below sea level. This also makes it the second deepest lake in the world (after Lake Baikal); it is the second largest lake in Africa by surface area (after Lake Victoria), but the largest lake in Africa by volume. Holding 18,900 cubic kilometers (4,500 cubic miles) of freshwater, it accounts for approximately 18% of the entire world's unfrozen surface freshwater. It is the world's longest lake, stretching over 673 kilometres (418 miles). The lake is shared by four countries: Tanzania (46%), Democratic Republic of the Congo (40%); Zambia and Burundi each have 7% of the lake.

9. As described in the PIF, Zambia's Lake Tanganyika Basin is endowed with exceptionally vast and highly diverse flora and fauna. The lake is recognized as a global biodiversity hotspot and a valuable aquatic habitat.

Lake Biodiversity

10. The lake is valuable not only for the presence of unique, endemic species, but also as a microcosm in which to study the processes of evolution. Indeed the lake contains amongst the greatest biodiversity of any lake in the world, with more than 1,500 species of fish, invertebrates and plants recorded in the basin; out of which about 600 are endemic[10]. They include 245 morphologically diverse and colourful cichlid fish species[11]. Lake Tanganyika is unique in harbouring endemic species clusters of bagrids, cyprinids, mastacembelids, and mochokids[12]. Moreover, a large diversity of endemic ostracods, gastropods, shrimp, crabs as well as many other taxa can be found in the lake[13].

11. As detailed in the Lake Tanganyika Transboundary Diagnostics Analysis (TDA) report[14], the Zambian zone of the Lake is bio-diverse and rich in endemic fish and mollusc species: 37% of all fish species known to inhabit Lake Tanganyika were identified in the littoral lake zone of Nsumbu National Park which includes 80 km of shore line; the fourteen mollusc species identified in the Park represent 20% of the total number that have been recorded in Lake Tanganyika; and, all the 14 species are endemic to the Lake. The Zambian littoral zone and river mouths and associated wetlands provide important breeding grounds for economically important fish species.

Forests and terrestrial biodiversity

12. The lake catchment basin is rich in forests, woodlands, and terrestrial biodiversity. Like most of the rest of the country, Mpulungu and Nsama districts have over 60% forest cover and are host to several national and local forests. They include Mpulungu local forest (18,579 ha), Lunzua Extension National forest (1,785 ha) and Lunzua National forest 22,986 ha), Chinakila National forest (27,031 ha), Kambashi local forest (22,825 ha), Mwenze National forest (39,400 ha) and Nsumbu National Park Forest (206,000 ha)[15]. The western boundary of Nsumbu National Park, or Sumbu as it is called locally, is buffered by Tondwa Game Management Area (GMA), an IUCN Category VIII Multiple Use

[9] Albertine rift is the Western section of the East African Rift.
[10] UNDP 2011: Lake Tanganyika Transboundary Diagnostics Analysis Report.
[11] Snoeks, 2000; Genner et al., 2004
[12] Amcoff et al. 2013. Evolution of egg dummies in Tanganyikan cichlid fishes: the roles of parental care and sexual selection. Journal of Evolutionary Biology 26 (2369-2382)
[13] Fryer, G. & Iles, T.D. 1972. The Cichlid Fishes of the Great Lakes of Africa: Their Biology and Evolution. Oliver & Boyd, Edinburgh
[14] UNDP 2011: Lake Tanganyika Transboundary Diagnostics Analysis Report.
[15] GRZ 2012. Status of forest reserves as at 31st December 2012, Ministry of Lands, Natural Resources and Environmental Protection, Forestry Department.

Management Area of 54,000 ha. The much larger Kaputa Game Management Area (360,000 ha) is also contiguous with the National Park to the north-west and south-west. Nsumbu National Park and the two Game Management Areas thus form important parts of a network of Protected Areas (PAs) in Zambia[16] (see Map 1).

Map 1. National parks of Zambia

13. The two districts are host to several rivers draining into Lake Tanganyika. The Lufubu River dissects Nsumbu National Park from west to east, forming the eastern boundary of the Park. Nkamba and Chisala Rivers are ephemeral and smaller than the Lufubu, draining Tondwa Swamp into Nkamba and Nsumbu Bays respectively, the former through an attractive valley with abundant wildlife.

14. Forest species in Nsama and Mpulungu districts: Zambia's vegetation is dominated by miombo, which is characterized by open woodland dominated by Caesalpinioideae tree species including Brachystegia, Julbernardia and Isoberlinia, often associated with a dense grass sward[17]. The Northern Province (including Mpulungu and Nsama districts) is however covered by the dry evergreen miombo forests, which are part of the transition of forest types from Guineo-Congolian rainforest to Zambian dry woodlands. Dry evergreen forests cover less than 3–5% of the country's land area and are restricted to Northwestern and Western provinces in Zambia[18]. These forest types have three stories with a

[16] http://www.zambiatourism.com/destinations/national-parks/nsumbu-national-park
[17] Chidumayo EN. 2012a. Classification of Zambian Forests: Final Draft Report. Rome: Food and Agriculture Organization of the United Nations
[18] Siampale A. 2008. The potential of carbon sequestration in the terrestrial ecosystems for Zambia. Carbon and communities in tropical woodlands. Edinburgh: Edinburgh School of Geosciences. 46–51.

canopy up to 27 m high, a dense shrub layer of 1.5– 6.0 m high and often an understory of 0.3–1.3 m high. Dominant tree species include Cryptosepalum exfoliatum, Guibourtia coleosperma, Marquesia acuminata, Marquesia macroura, Parinari excelsa, Syzygium guineense, and Anisophyllea pomifera[19].

15. Part of Nsumbu National Park is covered by the Itigi-Nsumbu thicket, which is endemic to this region, occurring only between Lakes Mweru Wantipa and Tanganyika in Zambia, and around Itigi town in Tanzania[20]. The Itigi-Nsumbu ticket ecoregion is unique due to the presence of strictly endemic species[21]. The ecoregion is considered as endangered, with 50 percent of the Tanzanian portion already cleared[22], and as much as 71 percent of the Zambian portion cleared[23]. Although large parts of the ecoregion are conserved in Zambia, it appears that thicket clearing takes place even within protected areas. It is considered that the Itigi-Sumbu Thicket in Zambia is reduced by 3 percent each year. Specific information on the thicket is however largely unavailable due to inadequate resources assessment and mapping.

16. The forests have rich grasses in the understory. Notable grass genera include Andropogon, Brachiaria, Digitaria, Heteropogon, Hyparrhenia, Hyperthelia, Panicum, Pogonarthria, Tristachya and Urochloa.

17. Rich wildlife: Although wildlife numbers have declined, there is still a wide range of species present, especially in the 206,000 hectares Nsumbu National Park and the Game Management Areas. They include elephants, buffalo, roan, sable, eland, hartebeest, zebra, lion and leopards. Bushbuck, warthog and puku often frequent the beaches. The rare blue duiker, a small forest antelope, is one of the Park's specialities along with the shy swamp dwelling sitatunga[24]. Nsumbu National Park represents one of the last remaining populations of elephants in the lake basin. The others in nearby Mweru, Southern Democratic Republic of the Congo (DRC), Lusenga plains and migrant populations between DRC and Zambia have all been exterminated[25]. Other species seen in the area are the spotted hyena, side-striped jackal, impala, waterbuck and reedbuck.

18. Nsumbu National Park borders the 54,000 hectares Tondwa Game Management Area to the west, an IUCN Category VIII Multiple Use Management Area. The much larger Kaputa Game Management Area (360,000 ha) is also contiguous with the National Park to the north-west and south-west. Nsumbu National Park and the two Game Management Areas thus form important parts of a network of Protected Areas in Zambia. The National Park includes 80 km of some of the most pristine shores of Lake Tanganyika, including the four bays of Kasaba, Kala, Nkamba and Nsumbu, and Nundo Head Peninsula. The lake bordering on the park is teeming with crocodiles and hippos.

19. Birdlife: The Lake and the catchment are hosts to prolific birdlife including many migrants from East Africa and South African regions. They include flamingos, African skimmer and spoonbill, fish eagle, whiskered tern along with many different storks, ducks and herons. Other species commonly encountered around the lake include the grey-headed gull, lesser black-backed gull, white-winged black tern and the whiskered tern. The palmnut vulture and Pel's fishing owl are also occasionally seen.

Carbon

20. The forests and forested landscapes of Mpulungu and Nsama districts are also important stores of carbon, both above and below ground carbon. A recent study by the Centre for International Forestry (CIFOR)[26] reported that miombo woodlands yield 32–52 tons per hectare ($t.ha^{-1}$) of biomass in Miombo woodlands, storing 15–24 tons of carbon

[19] Ibid.

[20] http://www.worldwildlife.org/ecoregions/at0708

[21] Kideghesho 2001, National Forestry Programme, undated

[22] Kideghesho, J.R. 2001. The status of wildlife habitats in Tanzania and its implications to biodiversity. Tanzania Wildlife 21: 9-17.

[23] Almond, S. 2000. Itigi thicket monitoring using Landsat ™ Imagery. MSc. Remote sensing dissertation. University College, London

[24] Day M, Gumbo D, Moombe KB, Wijaya A and Sunderland T. 2014. Zambia country profile: Monitoring, reporting and verification for REDD+. Occasional Paper 113. Bogor, Indonesia: CIFOR

[25] Lake Tanganyika Conservation Organization -- http://conservationtanganyika.org/elephants-of-nsumbu/

[26] Day M, Gumbo D, Moombe KB, Wijaya A and Sunderland T. 2014. Zambia country profile: Monitoring, reporting and verification for REDD+. Occasional Paper 113. Bogor, Indonesia: CIFOR

equivalent[27]. The study[28] reported higher figures for wet miombo forests at 76 tons per hectare of biomass and carbon values of 35.72 t.ha^{-1}of carbon equivalent. The report gave even higher figures for Average above ground biomass for old-growth mixed age stands in the wet miombo belt of 90 t.ha^{-1} of biomass and carbon stocks of 42.3 tons of carbon equivalent. For Kasama, a 1985 study gave more specific figures for plots with different levels of disturbance. The study found that above-ground fresh biomass of a miombo stand, undisturbed for 16 years, was 108 t ha^{-1}, equivalent to 48 t ha^{-1} dry matter 22.70 tons of carbon equivalent[29].

21. Using the highest and the lowest average figures, the forests in Mpulungu and Nsama districts are holding between 12-33 million tons of carbon equivalent.

Threats to the resources

22. Over 157,830 inhabitants (Source: CSO-2010 Census of Population and Housing; UNDP Zambia Human Development Report, 2007) directly rely on the ecosystem services related to water, food, and energy provided by Lake Tanganyika basin in the two districts of Mpulungu and Nsama. Fisheries and agriculture form the main sources of living for the majority of communities in the lake basin. However, environmental degradation resulting mainly from human induced activities poses a serious threat to the biodiversity and ecological integrity of the lake and surrounding landscape, as well as to carbon stocks. The main threats on these resources are:

23. Increasing needs of the local people due to a rapidly growing population: the generally poor population of the area heavily relies on the resources and ecosystem services of their natural environment. As a result of population increase, the global need for energy, food and income sources is fast increasing in the area. This translates into high pressure on the ecosystem:

- over exploitation of fish resources, with excessive and uncontrolled fishing in the pelagic and littoral zones;
- over exploitation of forest resources, in particular wood for fire, income (through the commercial production of charcoal) and timber;
- extension of agricultural areas/human encroachment: widespread practice of “chitemene” (slash and burn), cultivation on steep hills or mountainous terrain.
- Increasing pressure on the specific biodiversity of the Lake basin. Threats to biodiversity include:
- Deforestation and habitat destruction. Protected areas such as Nsumbu National Park are often located in mixed-use landscapes where natural resources are managed or exploited for human needs related to food, water, wood, energy, and minerals;
- Wildfires: common phenomenon in catchment ecosystems causing hydrological imbalance
- Land Use Conflicts: fragmentation of ecosystems due to Human encroachment, logging, mining and agriculture. According to the fourth report to the UNCBD30, those conflicts are more prevalent in GMAs than National Parks;

[27] These methods produced carbon estimates within AGB ranging from 15 t per hectare to 24 t per hectare (using the IPCC conversion rate of 0.47 for biomass to carbon). BGB estimates were made equivalent to Tier 1, using a below- to aboveground biomass fraction of 0.28. Total above- and below-ground biomass was estimated to be in the range of 960–1561 Mt of carbon. With total carbon stock (including biomass, deadwood, litter and soil) estimated at 2652–3323 Mt of carbon. Due to its greater prevalence, the majority of biomass was calculated to be in semi-evergreen forests (mainly comprising miombo woodlands) with a significant proportion of biomass found in deciduous woodlands (Kamelarczyk 2009).

[28] The study used four different above-ground biomass (AGB) estimates using Integrated Land Use Assessment (ILUA) data; two biomass conversion and expansion factors (BCEFs) and two allometric equations.

[29] Stromgaard P. 1985. Biomass, growth and burning of woodland in a shifting cultivation area of south central Africa. Forest Ecology and Management 12:163–78

[30] GRZ, 2009. United National Convention on Biological Diversity, Fourth National report

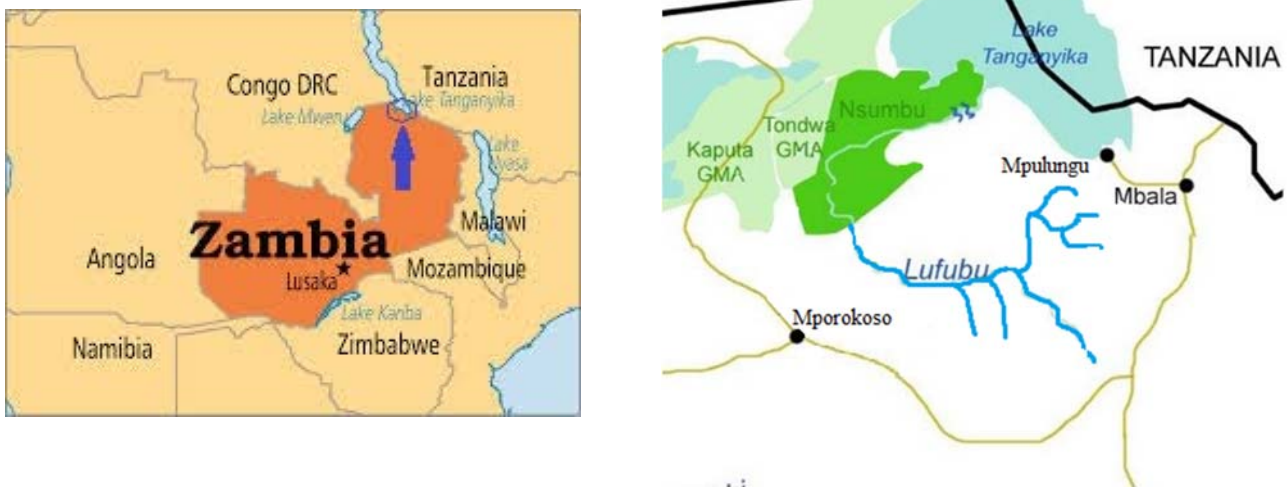
- Introduced Species: introduced species of plants, fish or any other animal can become very invasive and pose threats to ecosystems and the indigenous species;
- Pollution (siltation, agricultural inputs, chemicals, waste water from cities and growing villages), in particular of the Lake waters.
- Increased climate variability is additional threat to the ecosystems, with increased frequency of drought or dry-spells, heavy rains and floods, extreme heat and shorter rainy seasons[31]. In addition, climate change trends might result in more rain in the region (in average), and warmer temperature, impacting directly the lake ecosystem.

Impacts on natural resources

24. The resulting impacts on natural resources can be summarized as follows:
    - Wood extraction results in continuous forest degradation, opening the land to degradation, affecting wildlife habitat and decreasing actual carbon stocks;
    - Extension of agriculture results in deforestation and land degradation, with strong erosion patterns resulting in lake siltation (which affects lake biodiversity and fish stocks);
    - Heavy fishing activity, including in recognised breeding sites and during breeding periods, strongly impacts fish stocks (and in turn fishers' revenues and communities' diets), and threatens the specific biodiversity of the lake;
    - Resulting poor fish catches encourage fishers to start farming, including on improper locations such as steep hills, with resulting land degradation and impact on lake siltation and carbon stocks;
    - Land cover change (forest degradation, conversion of forest into agricultural areas), usually have an impact on the local climate, affecting crops and people.
25. In addition, Northern province communities are experiencing abject poverty due to various factors such as poor water supply and sanitation, decreasing smallholder productivity, poor feeder road network, inadequate transport and communication coverage, poor market infrastructure, high HIV/AIDS prevalence, high levels of unemployment, high levels of mortality due to preventable diseases, weak institutional capacity and facilities, inadequate and erratic power supply, and low nutrition, food and income security.
26. Rural populations in the two districts of Mpulungu and Nsama in particular lack the capacity, resources and technical expertise to adapt and overcome worsening environmental and socio-economic conditions.

[31] GRZ 2007. Formulation of the National Adaptation Programme of Action (NAPA) on climate change. Ministry of Tourism, Environment and Natural Resources

Map 2. Lake Tanganyika Basin – Zambia



27. The Lake Tanganyika basin presents a clear case for an integrated landscape approach to natural resources management, due to the interdependence of the ecosystems and the livelihoods. The health of the forest ecosystem is dependent on the activities in the agro-ecosystem (agriculture land); the deterioration of both the forest and agro-ecosystem directly impact the health of the lake and its biodiversity, with consequences on economic development and livelihoods. This reinforces several important facts that influence the design of the proposed project: i) that healthy, bio-diverse environments play a vital role in maintaining the resilience of ecological processes/ecosystems which reduces vulnerability of communities and economies, and boosts the ability of society to adapt to climate change: ii) that communities are key to creating and maintaining bio-diverse climate resilient landscapes, and can do so effectively if empowered and provided with the right incentives, governance systems and appropriate capacities.

28. Resolving the challenges in the Zambia part of Lake Tanganyika basin will require the adoption of a landscape approach to planning, an approach that has been proven to effectively integrate solutions that connect environmental, social and economic dimensions of sustainable development. The landscape approach needs to: i) involve the active participation of all relevant stakeholders, including land users, local, national and regional governments, conservation managers, civil society and the private sector; ii) promote natural resource governance systems and incentivize community participation in climate smart land use practices and conservation of forests, biodiversity and carbon pools; iii) be based on the use of cutting edge knowledge and indicators for resilience in socio-ecological production landscapes to support adaptive management.

29. The majority of the stakeholders (local and national governments, development partners and local communities) have strong political will and interest in adopting a landscape approach to integrate land use with biodiversity and ecosystem management to enhance resilient economic development and livelihoods. However, the adoption of these strategies is hampered by three key barriers: i) inadequate technical skills and experience for landscape/ecosystems approach to natural resources management to enhance socio-economic benefits while restoring ecosystem functionality; ii) limited access to alternative sources of livelihoods and economic development; and iii) policy and institutional weaknesses caused by inadequate resources lead to poor enforcement of environmental laws and policies. These barriers are described below[32].

30. *Barrier 1*: Inadequate technical skills and experience for landscape/ecosystems approach to natural resources management to enhance socio-economic benefits while restoring ecosystem functionality. The core concept of the landscape approach to natural resources management is that, all land users and people who make decisions about land and use of natural resources need to be aware of spatial ecosystems and ecosystems services in the landscape,

[32] For further details, please refer to Baseline report 3: Barriers for sustainable integrated management of natural resources and adoption of a landscape approach.

biodiversity priorities and threats to both, including risks from uncertain climate regimes and climate change, and to take these into account in planning and decision-making processes related to land use and livelihood activities[33]. This is so that they can identify ecological constraints and opportunities within a landscape, and use these to locate developments and land-use types most appropriately. Effective adoption of a landscape approach in the Zambia part of the Lake Tanganyika basin will therefore require: i) the use of knowledge to guide management and land use choices, and ii) the ability of stakeholders and partnerships to fulfil the different roles and responsibilities necessary to ensure effective participation and sustainability of the initiative. These conditions are not all in place, as described in Baseline report 3, which identifies the following four issues:

- Inadequate skills and capacities of technical institutions;
- Inadequate information for planning;
- Inadequate technical and financial resources for extension service;
- Inadequate capacity for monitoring, information management and hence weak adaptive management.

31. *Barrier 2: Limited access to alternative sources of livelihoods and economic development*. Like the rest of the country, the Lake Tanganyika basin has great economic potential closely associated to its rich endowment of natural resources. Yet, more than 85% of the population of the two districts targeted by the project live below the one dollar a day poverty line, which is higher than the national figure of about 65%. The high level of poverty is explained by the fact that more than 95% of the population lives in rural areas engaged in either subsistence farming (including livestock rearing) or fisheries. Their livelihoods are therefore highly dependent on natural resources. Expanding livelihood and economic activities outside natural resources is hampered by a complex set of barriers that often compound each other to lock the population into a vicious cycle of high dependence on natural resources and poverty and further resource degradation. They include:

    - poor infrastructure (poor feeder road network, inadequate transport and communication coverage, lack of electricity outside urban centres and inadequate and erratic power supply in the urban centres, poor agro/fish processing facilities, and poor market infrastructure being addressed by the co-finance via the baseline project);
    - low levels of awareness of economic opportunities outside of the natural resources sector;
    - low levels of literacy compounded by inadequate opportunities for lifelong continuation of education, and inadequate access to health facilities;
    - weak cooperatives movement and inadequate services (and interest in) financial services.

32. *Barrier 3*: Policy and institutional weaknesses caused by inadequate resources lead to poor enforcement of environmental laws and policies. Uptake of a landscape approach to integrated natural resources management requires a relatively strong policy environment and well-functioning institutions, especially those with the mandate of enforcing environmental law at the local level. Zambia has an impressive set of policies for natural resources management[34] and elaborate institutional arrangement for policy formulation and implementation. These present clear opportunities for integrating biodiversity conservation and disaster risk reduction in land use and climate change adaptation at the landscape level. Although the country has registered significant achievements in decentralization, there are two sets of policy and institutional failures that challenge the effectiveness of stakeholders' efforts to integrated natural resources management:

    - On the policy side there is policy disharmony, lack of appropriate regulations, uncertain land tenure and poor enforcement of existing regulations;
    - On the institution side there is weak local natural resource management institutions, limited and weak community institutions (such as Community Resource Boards) and an under resourced extension service (limited staffing

[33] Cadman, M., Petersen, C., Driver, A., Sekhran, N., Maze, K. and Munzhedzi, S. 2010. Biodiversity for Development: South Africa's landscape approach to conserving biodiversity and promoting ecosystem resilience. South African National Biodiversity Institute, Pretoria.
[34] See Baseline report 1: Institutional review and stakeholder analysis

levels, limited operational budgets and inadequate coordination between institutions in extension service delivery).

33. This leads to policy disharmony with poor inter-agency coordination, and weak enforcement of existing policies.

2) Baseline scenario or any associated baseline projects,

34. As thoroughly described in the PIF, the project entitled the Lake Tanganyika Development Project (LTDP), financed from a USD 23 million loan from the African Development Bank (AfDB), will serve as the baseline and co-funding source to the proposed GEF project. The LTDP adopts an integrated approach which aims to protect the ecological integrity of the Lake Tanganyika Zambia Basin and improve the quality of life for basin populations through the provision of essential economic infrastructure and support for sustainable livelihoods development.

35. The objectives of the baseline project are to: i) Achieve sustainable management and use of natural resources in Zambia's Lake Tanganyika catchment area; (ii) Improve livelihoods of Lake Basin communities through social infrastructure development and diversification of economic activities; and (iii) Promote market linkages and value chain development of natural resource products and services.

36. The LTDP implementation officially started on 12 December 2015 and will run over a five-year period in the same two districts of the Northern Province, namely, Mpulungu and Nsama.

37. The baseline project comprises activities under three components (more information is available in the PIF and in the Project Appraisal Report[35] of the LTDP):

1. Integrated Natural Resources Management

- Fishery co-management, small scale aquaculture, and value chain sub component. This includes in particular the establishment/reinforcement of 20 fisheries co-management committees, training on fish processing, design of appropriate small-size floating cages for tilapia and support to the fisheries department to conduct research on the use of endemic species for commercial aquaculture
- Sustainable forest, wildlife, and land management subcomponent, which includes, among other activities, a forestry resource inventory, Woodlots of exotic species, Capacity building for district foresters to monitor and prevent illegal timber activities, Improve access roads to the National Park and GMAs
- Capacity building and supporting measures on NRM (with focus on women and youth) subcomponent. For example, activities such as the expansion of community radios coverage and broadcasting of gender sensitive information on NRM, the establishment of a 100 student Skills Training Centre, the organisation of study tours and exchange visits to similar projects, and the mainstreaming of gender and HIV/AIDS in NRM activities will be implemented.

2. Improvement of Livelihoods and Socio-Economic Infrastructure

- Development and provision of economic infrastructures subcomponent, including the Completion of all incomplete buildings under PRODAP (see below), and the construction of demand-driven community micro projects such as feeder roads, sanitation, solar energy and market sheds.
- Alternative livelihoods subcomponent, including activities such as the construction of a food processing plant to link resource conservation and market incentives and the distribution of small ruminants and seeds through pass-on scheme

3. Project Management and Coordination

- Project management
- Capacity building activities
- Project monitoring and evaluation activities

38. The baseline scenario builds on and completes previous interventions of significance in the Zambian part of Lake Tanganyika Basin, in particular:

[35] African Development Bank Group, Lake Tanganyika Development Project, Project Appraisal Report, 28 October, 2014

- The Zambian component of the ADF/GEF –supported Lake Tanganyika Integrated Management Programme, which focused on sedimentation control and was supported by UNDP. This project ended in 2013.
- The UNDP/GEF Project on Partnership Interventions for the Implementation of the Strategic Action Programme for Lake Tanganyika, implemented over the four countries of Lake Tanganyika basin, which ended in 2013 as well.
- The AfDB supported Lake Tanganyika Integrated Regional Development Programme (PRODAP), terminated in 2014. This project aimed at rationalizing the exploitation of fishery resources, protecting the lake environment in a sustainable manner, reducing the poverty of the Lake basin communities, and diversifying sources of income and creating jobs.

3) Proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project

Alternative scenario

39. While the baseline project will focus primarily on the fisheries sector and on economic and social infrastructure development, the GEF component will complement the activities by following a landscape approach for improving the capacity of local communities and other stakeholders to sustainably manage all of the Basin's natural resources. The project will integrate and complement planned infrastructure and fisheries interventions by focusing on the removal of key barriers that have prevented a wider adoption of INRM technologies and practices (e.g. knowledge, skills, capital, etc.), and reinforcing harmonization and coordination between planned activities and stakeholders.

40. The main activities will focus on enabling the adoption of sustainable land, fishery and forestry management practices in a concerted and coordinated manner, while enhancing the ecosystem services provided by a restored land and forest landscape, including soil stabilization, food security, and biodiversity conservation. Targeted reduction of the drivers of unsustainable practices and the promotion of the sustainable use of biodiversity will also help secure the protected areas in proximity to the lake, while contributing to the sustainable management and resilience of the surrounding landscapes, as well as the stabilisation of carbon stocks.

41. GEF financing will thus build on the baseline project to address gaps and supplement efforts to protect the Basin through a truly integrated landscape approach that would otherwise remain incomplete. By promoting a more holistic, programmatic approach to address lake conservation, the project will contribute to the positive impact of interventions and achieve greater economies of scale at the micro and macro levels.

GEF focal area strategies

Table 1: Consistency with GEF focal areas strategies, objectives and programs and international commitments of the GRZ

GEF focal areas	**Project description**
Biodiversity	Through its interventions in increasing the protection of protected areas and their management, reducing human-animal conflicts and protecting biodiversity resources to ensure their sustainable use (in particular fish stocks), the project is consistent with objectives 1 (Improve sustainability of protected area systems), 2 (Reduce threats to globally significant biodiversity), 3 (Sustainable use biodiversity) and 4 (Mainstream biodiversity conservation and sustainable use into production landscapes and seascapes and sectors) of the GEF-6 biodiversity focal area[36] and a number of its programs, in particular program 9 (Managing the Human-Biodiversity Interface). Regarding the AICHI targets[37], the project interventions are consistent with the following strategic goals and targets: • Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society (targets 1, 2, 4) through capacity building, law enforcement, land use planning and sustainable fishing practices that will be put in place; • Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use (targets 5, 6, 7, 8) through its interventions in sustainable forest and land management, preventing further deforestation and siltation of the lake, protection of fish breeding sites and fisheries managements; • Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity (target 11) through interventions targeting the

[36] GEF-6 focal areas strategies, objectives and programs, Global Environment Facility, undated
[37] https://www.cbd.int/sp/targets/

	protection of inland water areas of particular importance for biodiversity and ecosystem services; • Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services (targets 14, 15): project interventions will target the restoration of ecosystem services in areas where they are degraded, thus increasing carbon stocks; • Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building (targets 18, 19): the project approach to land use planning will be highly participatory and will take consideration of the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity. The project will also promote better knowledge of the Itigi-Sumbu Thicket in Zambia and its protection. Finally, the project interventions will contribute to the implementation of Zambia's second National Biodiversity Strategy and Action Plan (NBSAP -2) 2015-2025, in particular *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use* and *Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services*.
Land degradation	The project interventions are fully consistent with objective LD-1: Agriculture and Rangeland Systems: maintaining or improving flow of agro-ecosystem services to sustain food production and livelihoods is an important objective of this project and the baseline project, and important budgets are dedicated to agroecological intensification and climate smart agriculture through conservation farming, erosion control, irrigation and regular onsite advises from extension services. Given the role of forests in sustaining local livelihoods, the project puts a strong focus on sustainable forest management, in particular through the gazetting of SFM area through different schemes (JFM, CF, etc.). This is in line with objective LD-2: Forest Landscapes: Generate sustainable flows of forest ecosystem services, including sustaining livelihoods of forest dependent people. Zambia has no specific framework to deal with Land degradation, but land degradation is recognized as a major issue in different documents, including the new Climate change Policy for example.
Climate change mitigation	In line with the GEF-6 climate change mitigation strategy, the project will work on sustainable forest management that includes biodiversity priorities, and mitigation actions targeting forest depletion drivers, in order to provide carbon benefits as well as other social and environmental benefits that forest can provide as an ecosystem. The project will also include interventions on agricultural practices that respond to land degradation issues and enhance soil quality while reducing agro-based GHG emissions. The project will therefore contribute to Objective CCM2 (Demonstrate Systemic Impacts of Mitigation Options) and Program 4 (Promote conservation and enhancement of carbon stocks in forest and other than use, and support climate smart agriculture[38]). The project will also contribute to the implementation of the mitigation section of Zambia's INDC, in particular Program 1 (Sustainable Forest Management: natural regeneration, Sustainable charcoal production, Participatory forest management, etc.) and Program 2 (Sustainable Agriculture: Conservation/ Smart agriculture).

[38] https://www.thegef.org/gef/CC_mitigation_strategy

Sustainable Forest Management	By supporting an integrated approach to managing forest ecosystems, the project will achieve multiple global environmental benefits, including those related to the protection and sustainable use of biodiversity, climate change mitigation and adaptation, and combating land degradation. This is in line with GEF-6 strategy regarding SFM. In particular, the project interventions are consistent with Program 1 (Integrated land use planning), Program 5 (Capacity development for SFM within local communities) and Program 6 (Supporting sustainable finance mechanisms for SFM).

Expected outcomes and components of the project

Component 1- Development of capacities (skills, information) and investments for landscape approach to Integrated Natural Resources Management (INRM)

- Outcome 1.1- Improved Landscape planning in Zambia's Lake Tanganyika basin
- Outcome 1.2 - Improved capacity of technical institutions and community groups to implement landscape approach to INRM
- Outcome 1.3 - Increased capacities and investments supporting land rehabilitation and decreased deforestation

42. As explained in section A1-1, there is a lack of technical skills and experience for landscape/ecosystems approach to natural resources management that needs to be addressed to enhance socio-economic benefits while restoring ecosystem functionality. Under this component, landscape management plans will be developed in the two districts in order for stakeholders to spatially identify and agree on important areas of terrestrial and fisheries biodiversity conservation, areas of forest protection and management, agricultural areas and inhabited areas. Stakeholder consultations confirmed there is specific demand for land-use planning tools from the different resource user groups, for example the Community resource Board (CRB) in charge of the Tondwa GMA, as there is a recognized ignorance of GMA/Nsumbu NP boundaries and what is allowed/no allowed and what can /cannot be developed in each specific area. The same applies to agricultural and forest land, which need to be more clearly defined to enable better management, for example through community SFM schemes in local forests and customary land[39], for which there is high interest among forest users. Specific guidelines for management of the various units will be developed: SFM schemes adopted, GMAs, sustainable land management practices (conservation agriculture, agroforestry), and community based fisheries, incorporating climate risks. Biodiversity and forestry monitoring plans will also be formulated, and informed by resource inventories (especially forests and carbon), which will provide useful information for adaptive management. Those plans will be duly coordinated with any current or future catchment management plans developed under the Water Resource Management Act and others relevant policies.

43. Field visits in Nsama and Mpulungu revealed that most people recognise and understand that current fishing, forestry and agricultural practices are unsustainable, but mostly don't know how to do differently. Therefore, technical institutions, community groups (CRB and community associations) and resource users need to be provided with skills and operational capacities to implement a number of INRM interventions, in particular Sustainable Forest Management schemes (including Joint Forest Management – JFM; Community Forest – CF; Private Forest; Partnership Parks) to be developed in and around the two local forests of Mpulungu and Kambashi (see Map 3 below), fisheries co-management units to protect fish breeding grounds (under the baseline project), climate smart conservation agriculture, agroforestry (fruit trees) and afforestation.

44. Moreover, the Nsumbu National Park needs to be clearly demarcated, with visible buoys in the lake parts of the Park and beacons on the land parts. This is also an opportunity to rationalise the Park boundaries, in particular aiming to re-integrate the Inangu peninsula/GMA into the Nsumbu National Park and lock the entire Nkamba bay into the Park as a major fish breeding site (see map 3). Addressing deforestation also entails interventions relating to wood extraction

[39] Target sites for JFM/CF are: Mbete and Kambole (Mpulungu Local Forest); Kalongola, Musakanya and Kalambwe (Kambashi Local Forest); Kabyolwe, Chitimbwa, Chinakila, Chibote (Customary Land)

and use, in particular charcoal production (engaging in sustainable charcoal production through efficient kilns and green charcoal[40] pilots[41]) and brick moulding (introduction of improved brick kilns and stabilized blocks), which can strongly impact on carbon stocks/climate change mitigation. Finally, sedimentation, siltation and erosion control structures will also be installed for better water and land management.

Component 2- Livelihood diversification enhances sustainable agro and forest ecosystem development and reduces pressure on natural resources

- Outcome 2.1 Increased contribution of agro and forest ecosystem services to national economy and local livelihoods

45. Interventions for alternative income generation and livelihood diversification will be supported by both the baseline project and the GEF project, and some of the outputs included in this component will be partially supported by the baseline project[42]. In this component, the work will first deal with access to credit (e.g. through support to and development of microfinance institutions) and capacity building of cooperatives and unions (farmers, fisheries, producers). This will add to (i) the development of education opportunities outside of formal schooling through the delivery of courses in areas that support livelihood expansion such as crafts, masonry, and others (Student Skills Training Centre supported by the baseline project); and (ii) improvement of infrastructure (roads, airport, fish processing plant, buildings), both funded by the baseline project to support the local economy and in particular agro-processing value chains.

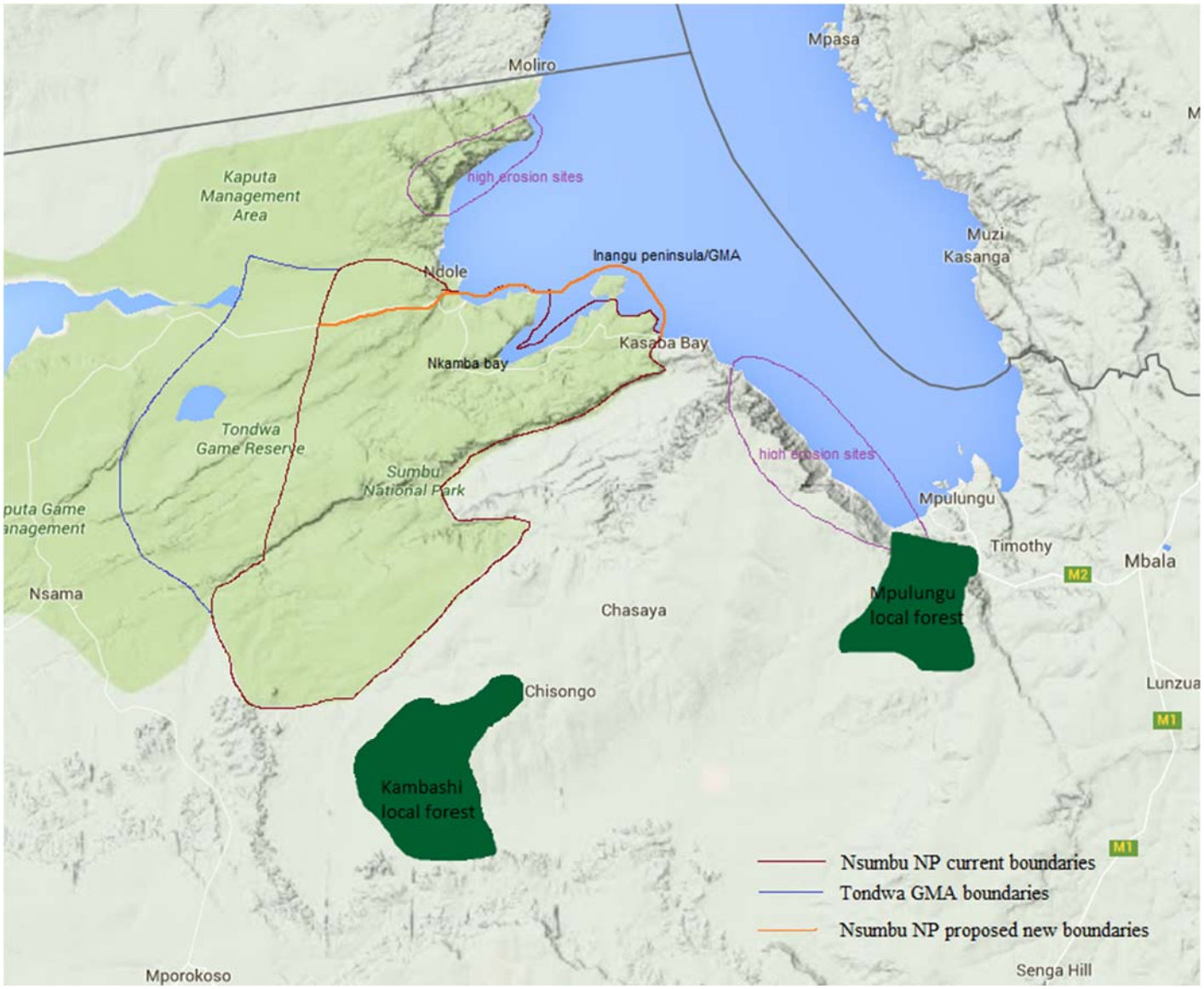
    Consultations conducted during project preparation also highlighted a high interest of local communities for a limited number of Income Generating Activities (IGAs), in particular honey production, small-scale irrigation, and fruit production for processing (the construction of a processing plant is supported by the baseline project). Alternative livelihood interventions will therefore include smallholder irrigation schemes established by communities, Non Timber Forest Products (NTPF) harvesting groups established and empowered in the SFM areas (e.g. honey, mushrooms) and other alternative IGAs, such as those linked to tourism development, through a Tourism Development Strategy to be developed over the entire Lake Tanganyika region and the actual implementation of Kasaba bay tourism integrated development plan (which was produced some years ago already). Specific work with the Ministry of Tourism and Arts and the Department of National Parks and Wildlife management will aim to unblock the situation. Tourism is actually seen by some civil society groups as the only real chance to conserve biodiversity in the area (Nsumbu NP, GMAs, lake Tanganyika). Indeed, not only can tourism provide much needed financial means to support law enforcement and wildlife protection, but by providing jobs and economic activities, it gives a value to biodiversity conservation that is not always perceived currently by local resource users. Given the high level of pressure on the lake and on the land, and the increased frequency of climate hazards, local communities do understand the need to diversify their means of living and look for support in doing so.

[40] Green charcoal refers here to the production of charcoal briquettes from non-wood biomass, like crop residues or grasses, a technology that is developing in various regions of Africa and Asia. It seems particularly suited to Nsama and Mpulungu districts which are endowed with huge amounts of tall grass that could serve as a renewable biomass source.

[41] Note that the adoption of improved cook stoves has not been retained as a relevant activity in the project since these are already widely used in the two districts. In contrast, a lot of work is needed on charcoal production, which is a widespread revenue source and a major driver of deforestation in the region.

[42] In particular, the LTDP will cover partially Output 2.1.2 (Alternative income generating activities identified and implemented with 30 community groups) and 2.1.3 (Increased food production from agriculture through small scale irrigation)

Map 3. Nsumbu National park, locating Nkamba bay and Inangu Peninsular/GMA



Component 3 - Policy enforcement and coordination of INRM interventions, monitoring and outreach activities

- Outcome 3.1 Enhanced policy and institutional coordination for better service delivery and enforcement of the landscape management plans and livelihood initiatives
- Outcome 3.2 Project implementation based on results based management and application of project lessons learned in future operations facilitated

46. Outcome 3.1 had not been clearly captured in the PIF, although this is a key factor of success of both the LTDP baseline project and this GEF project. Indeed, uptake of a landscape approach to INRM requires a relatively strong policy environment and well-functioning institutions, especially those with the mandate of enforcing environmental law at the local level. Given the weaknesses identified in section A1-1, the project interventions will aim to reduce policy disharmony and reinforce local natural resource management institutions. This will be done through an in-depth review of areas of disharmony and challenges of on-the-ground policy implementation and recommendations for harmonization and strengthening (including, but not limited to, the Forestry policy (2015) and the Water Resource Management Act (2011). There are several coordination platforms for implementing INRM in the country such as the Community Based Natural Resource Management Forum (CBNRMF); Natural Resources Consultative Forum (NRCF); the Agricultural Consultative Forum (ACF). These fora will be assessed and depending on their respective comparative advantage, they will be strengthened, bringing together all relevant institutions of natural resources that

will implement activities of the proposed project. Coordiantion with the Lake Tanganyika Catchment Management Organization and water users associations in order to coordinate activities relating to the catchment management plan will be essential. Overall, the project will support the various elements of the INRM policies and their implementation at the local level. A sustainability strategy will also be developed to ensure continuity after project ends, feeding into an overall exit strategy to be produced under Outcome 3.2.

47. Stakeholders from all levels recognise that enforcement of existing laws and regulations is a major issue, which needs proper human and technical capacities to be addressed. Therefore, district and regional institutions responsible for policy enforcement will be provided with updated skills and operational capacity for enforcement. This includes the departments of fisheries, wildlife, lands, veterinary services, and agriculture, among others. Communities, resource user groups and community natural resource governance bodies (such as Village Conservation and Development Committees (VCDCs), Community Resource Board, and Village Action Groups) will also be empowered with skills, awareness and operational capacity to improve demand for better resource governance, natural resources governance, accountability and service delivery (governance bodies). Civil society groups will also be supported to assist community groups to demand service delivery and good governance from community natural resources management bodies. This include activities such as the regular review of policies to identify barriers to policy enforcement, the enactment of bi-laws that forbid the use of unsustainable natural resources exploitation methods (e.g. illegal fishing nets, poaching, etc.), upgrading of the operational capacities of relevant departments and awareness raising of relevant communities, among others.

48. Output 3.2 aims to establish sound monitoring and evaluation processes which will ensure proper implementation of the project as well as extraction of project lessons learned and recommendations that will serve as an important resource for future similar initiatives. Under this component, the coordination team will prepare and disseminate knowledge products at national and local levels, and set-up an operational project monitoring system providing systematic information on progress in meeting project outcome and output targets. This will include monitoring of socio-economic and environmental data generated by the first two components, which will feed into GRZ databases and contribute to the monitoring and knowledge base of the comprehensive lake ecosystem. For example, the project is already coordinating with The Nature Conservancy working in the Kafue Ecosystem, aiming to generate detailed maps of Lake Tanganyika ecosystem. This outcome also includes the preparation of an exit strategy to ensure project gains are maintained and replicated in the future, while non-yet-achieved results are fulfilled. Further, building stronger partnership with other specialised NGOs such as the Wildlife and Environmental Conservation Society of Zambia (WECSZ), and the Foundation for Wildlife and Habitat Conservation Zambia (FWHCZ) will add value to the successful implementation of the project through cross hybridization of ideas and innovations.

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

49. The project will be jointly financed by an AfDB loan (baseline project), the GEF, and the Government of Zambia (GRZ). The AfDB loan, representing over 75% of the total project cost, will focus on financing investments primarily related to fisheries, livelihood and agricultural production. The GEF component will provide a grant of USD 7.334 million to apply a more integrated landscape approach, adding activities in SLM, protected areas management and SFM in basin communities. The contribution from the Zambian Government is estimated at USD 0.127 million and will be mostly in-kind contributions. Regarding GRZ contribution, it should be added that:

    - During the PPG phase, strong emphasis has been put on the low human and technical capacities of district level services of the GRZ, in particular agriculture, forestry and wildlife services, given the large area to be covered and the local context. Whereas the project, through the GEF grant, will contribute to the increase of those capacities, the GRZ has assured that the staff dedicated to this project would be duly adapted in terms of numbers and profiles, in order to make sure the outputs and outcomes of the project are actually delivered.
    - The GRZ financial contribution estimate does not include the following elements: (i) the GRZ pays USD 500,000 annually to the Lake Tanganyika Authority (LTA), which amounts to USD 2.5 million over the project cycle, and (ii) the GRZ is actually investing in the long term through the AfDB loan/baseline project.

50. As described in the PIF, the key value-addition of the GEF contribution, in relation to the AfDB and GRZ co-financing, is therefore to shape the project into a land degradation, SFM, biodiversity and climate change multi-focal initiative,

ensuring environmental sustainability and benefits through conservation, adaptation and mitigation. The GEF incremental value will provide specific ecosystem protection and rehabilitation which will deliver global environmental benefits that would not normally have been the primary focus of a solely AfDB-financed project.

51. *Without GEF*: The risks of ever-increasing land and forest degradation in Zambia's Lake Tanganyika Basin are substantial. Current practices, from land-use planning to production, are failing to maintain ecosystem functions and cannot facilitate sustainable development. Without the GEF funds, the current unplanned, uncoordinated, unsustainable expansion of agriculture; overexploitation of fisheries; decrease of biodiversity and misuse of wood resources without adequate consideration for sustainability or adaptation will continue to have damaging impact on the state of biodiversity, carbon depletion and poverty conditions. Whereas the LTDP baseline project supports INRM through investments in sustainable fisheries and livelihood and social infrastructure, it does not propose a comprehensive landscape approach to INRM in the two districts.

52. *With GEF*: In the alternative scenario, barriers to the adoption of sustainability principles and practices will be removed by building capacity and support at all scales (local, national, regional) for upscaling SLM/SFM and biodiversity conservation into land use and planning. GEF activities will focus on improving knowledge, technologies, and enhancing agriculture and community level forestry. The GEF will build on the baseline scenario by financing the incremental costs associated with: (i) developing long-term integrated biodiversity conservation for the Zambia basin of Lake Tanganyika; (ii) strengthening the existing institutions to play a more effective role in sustainable management of the lake and relevant PAs; (iii) developing and implementing SLM/SFM practices that incorporate conservation measures; (vi) implementing mitigation measures designed to address socio-economic threats to the basin; and (vii) increasing public awareness of the importance of biodiversity on livelihoods. Both components (AfDB loan and GEF) are closely interlinked, implemented at the same time and by the same stakeholders, to achieve environmental benefits.

53. Component 1 of the GEF project will ensure that capacities and investments are sufficiently developed so that a landscape approach to Integrated Natural Resources Management is used in the two districts. The preparation of landscape development plans and guidelines will shape the interventions of both the GEF project and the baseline project in a concerted, organised and sustainable manner. The proposed initiatives and investments in SFM schemes, conservation agriculture, agroforestry, afforestation, National Park demarcation, wildlife management stakeholders capacity building, wood use reduction and efficiency and erosion control have the potential to dramatically change the development pattern of the region, boosting ecosystem services sustainability and resilience to climate change as well as transitioning into an innovative green economy that prioritises rural communities' well-being and the health of the environment. Those interventions complement in particular the baseline project interventions in fishery management and value chain development, including establishing fisheries co-management units.

54. Component 2 of the GEF project will foster diversification of livelihoods in order to reduce pressure on natural resources. It includes and complements the initiatives to be taken under the baseline project on livelihoods, in particular investments in infrastructure such as schools, health centers, roads, food processing facilities, among others. The reinforcement of cooperatives and unions, the rehabilitation/construction of infrastructure and the new offer on vocational education (through the baseline project) will create an enabling environment to economic development. On this basis, GEF interventions to reduce pressure on the ecosystem will be implemented: increased food production from agriculture through small scale irrigation (effects: reduced agricultural expansion on forest and marginal lands; reduced pressure on Lake fish resources), community fish farming (effect: reduced pressure on Lake fish resources), alternative income generating activities (effects: decreased need of revenues from fishing (less pressure on Lake resources), agriculture (less encroachment on forest/protected areas) and forest (reduced need of commercial charcoal production), tourism development (effects: alternative revenue sources; increased funding for biodiversity conservation and PA management).

55. Component 3 will enhance service delivery and enforcement of the landscape management plans and livelihood initiatives by ensuring that policies are coherent, and actually enforced on the ground in a coordinated manner, which the baseline project alone could not cover properly. At all levels (communities, resource user groups and community natural resource governance bodies; civil society groups and institutions responsible for policy enforcement), interventions under component 3 will ensure that a coherent and coordinated approach to landscape management is applied in the two districts' development, that project results are duly monitored and reported, and that lessons learned are shared. Overall, the policy frameworks will mainstream biodiversity conservation in the entire target area and the new planning approaches adopted will impact global biodiversity as described in section A1.1.

5) Global Environmental Benefits (GEBs)

56. As described in the PIF, the project will deliver multiple environmental benefits through integrated investments across the various dimensions of the global environment. Those include biodiversity benefits, land degradation benefits, climate change benefits and SFM benefits, in addition to food security and ecosystem resilience benefits.

Table 2. Global Environmental Benefits to the project, monitoring indicators and targets

GEBs	**Indicators**	**Target**
Biodiversity	*Existence of a General Management Plan for Nsumbu NP, including a Strategic Law Enforcement Plan;* *Existence of Land Use plan for the Tondwa GMA*	Management and land-use plans to cover 260,000ha (Nsumbu NP + Tondwa GMA)
Land Degradation	*Land area under effective management in production systems with improved vegetative cover* *Land area under sustainable forest management and/or restoration practices*	Restoration of degraded land over min 20,000ha through afforestation (60ha), erosion control structures, SFM (12,000ha) and conservation agriculture (7,500ha)
Climate Change Mitigation	*Number of low GHG technologies and practices deployed in the project area*	At least 3 technologies deployed (relating to charcoal production and brick making).
SFM	*Area of sustainably managed forest stratified by forest management actors*)	Sustainable Forest Management schemes covering 12,000ha[43], resulting in 2.6 million tCO2eq avoided over 20 years[44] (direct emissions reductions only)

57. In addition, the project is expected to generate direct benefits to around 70,000 people (both women and men), in particular the 65% of them who are reported to live below the poverty line in the target districts. Those are mainly members of the rural communities around Lake Tanganyika, primary users of lake, land, forest and biodiversity resources.

58. Although Zambia is not part of the GEF *Integrated Approach Pilot (IAP) program on Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa*, this project constitutes a good example of promotion of the sustainable management and resilience of ecosystems and their different services (land, water, biodiversity, forests) as a means to address food insecurity. Indeed, in the region of focus, the need to enhance food security is linked directly to opportunities for generating global environmental benefits, hence the importance of interventions targeting more sustainable and more resilient production systems and approaches.

59. Resilience in this project is understood as per the UNDP definition, that is "an inherent as well as acquired condition achieved by managing risks over time at individual, household, community and societal levels in ways that minimize costs, build capacity to manage and sustain development momentum, and maximize transformative potential."[45] Given

[43] Source: Forestry Department under the Ministry of the Lands, Natural Resources and Environmental Protection (per. comm., 9 June 2016).
[44] The Ex-ACT FAO carbon calculator has been used to reach this figure. Detailed calculation is available in Annex 4.
[45] UNDP (2013). Changing with the World: UNDP Strategic Plan 2014-2017. New York: UNDP.

the participatory nature of the project, it is proposed to measure resilience at the community level using the CoBRA[46] methodology, which attempts to identify the key building blocks or characteristics of resilience and assess the attribution of local interventions in attaining these resilience characteristics. This approach will help communities to prioritize a relatively short list of resilience characteristics, as compared with other models that attempt to map many more dimensions of resilience, which makes it more practical and feasible to implement. In addition, a CoBRA assessment provides a substantial amount of information in a relatively short period of time and at significantly less cost than equivalent quantitative approaches. This is due to the participatory approach, which involves collaboration with local government and non-governmental organizations, who also provide technical and logistical backstopping support. The CoBRA assessment will be implemented in a minimum of 4 communities in each district of the project area, making sure to cover the variety of situations and interventions within the project area.

6) Innovativeness, sustainability and potential for scaling up

60. *Innovativeness*: summarizing the PIF description, this project's innovativeness is due to the integrated landscape approach to INRM, and the intrinsic complementarity of the project with the baseline project, thus offering the target districts a unique opportunity to boost development and sustainable use and conservation of natural resources. While SLM and SFM strategies themselves are not innovative, projects integrating these with climate change mitigation and biodiversity activities with an alternative livelihood approach are not widely practiced. Given the transboundary nature of Lake Tanganyika, best practices and externalities are likely to benefit the other three riparian countries as well as other regions of Zambia. In addition, innovative technologies such as the production of green charcoal may have a very significant impact on wood extraction (and therefore on forest cover and protection, on biodiversity, NFTP availability, etc.), shall these pilots be replicated in the target districts as well as all over the country and Lake Tanganyika basin.

61. *Sustainability:* the PIF describes how the positive socio-economic impact expected from the project will strengthen the sustainability of the interventions. It must be added that all the project interventions are designed towards sustainability. The participatory approach to the identification, implementation and monitoring of the activities will contribute to a long-term engagement with the strategies and benefits of the project. In the first component, training and capacity building activities of both individuals and community groups, such as local NGOs, CRBs, and resource user groups, will contribute to the sustainability of the project. Sensitization will result in a pro-active and long-term engagement of beneficiaries with forest/lake/land resource conservation. The second component will equally contribute to the sustainability of the project, as the alternative livelihood investments will show good economic results that will commit people to favour resilience. This will contribute to the maintenance of an infrastructure that has long-term use, and can provide long-term benefits. The development of irrigation technologies, the acquisition of tools, and the provision of seeds will increase productivity and result in increased income at the same time that diversifies the source of income and increases the food security of local stakeholders. These benefits will demonstrate the advantages of maintaining the infrastructure and keeping resilient strategies. This applies as well to the conservation of ecosystems, given the services that they provide. Training, long-term plans and realization of benefits will all contribute to the sustainability of strategies that reduce vulnerability and increase resilience. In addition, the coordination between institutions and other stakeholders that is sought for, and the planned development of a sustainability and exit strategy, will be important elements for sustaining project benefits over the long term. The overall intervention in Lake Tanganyika region constitutes a major development effort of the GRZ, which aims to reduce poverty and unlock the development potential of the region on the long term (especially considering that most of the investment is funded by a loan).

62. *Potential for scaling up*: in addition to the PIF description which emphasizes the potential for scaling up of project interventions at the Lake Tanganyika basin level, the project will partner and exchange with other projects and programmes of relevance in the country (see section *A.6. Institutional Arrangement and Coordination*), which is a good opportunity for exchange and scaling up of the successful interventions and lessons learned at the national scale. This will be realized, in particular, through component 3 of the project: Outcome 3.1 is dedicated to capturing lessons and preparing and disseminating knowledge products based on project experience.

A.2. Child Project

[46] Community Based Resilience Analysis (CoBRA), Conceptual Framework and Methodology, UNDP Drylands Development Centre, undated.

N/A

A.3. Stakeholders

Overall, the stakeholders engaged in the project are:

1/ Government partners

63. The government partners will oversee and enforce project activities, and provide institutional support and receive capacity building training to support project implementation. They will also receive information on lessons learned during project implementation so that they may include this information in subsequent projects and activities. These include:

At the national level:

- Ministry of Lands Natural Resources and Environmental Protection;
- Ministry of Agriculture;
- Ministry of Fisheries and Livestock;
- Ministry of Tourism and Arts;
- Ministry of Local Government and Housing;
- Ministry of Finance;
- Ministry of National Development Planning;
- Ministry of Energy and Water Development;
- Ministry of Chiefs and Traditional Affairs.

At the provincial and district levels

64. At the provincial and district levels, the Northern Province Local government institutions, in particular those belonging to the ministries cited above, have been deeply involved in the project formulation process and will be the key project implementers of components 1, 2 and 3 of the project. They will benefit from various capacity building activities, and operate through a network of extension officers in order to implement the project activities.

2/ Local Stakeholders from the communities in Mpulungu and Nsama districts

65. These communities will be the beneficiaries of project interventions and contribute to the implementation of activities. The direct project beneficiaries will be mainly fishers and farmers, but given the wide range of activities supported by the project (and the highly rural profile of the local communities), most people from the two districts will benefit from the project. The project aims at reaching directly and indirectly 10,000 households, that is to say more than 70,000 beneficiaries, of which half are women. The project will ensure that women are consulted and derive the expected benefits from project implementation (see section *A.4. Gender Equality and Women's Empowerment*). Project results will be disaggregated by gender so as to measure the impact on women.

3/ Non-Governmental Organizations

66. Civil society organisations are very few and quasi-absent in many of the project area locations. During the project preparation phase, consulted communities and stakeholders highlighted the lack of such organisations to support them in any development initiative or social services. This is why plans have been made to map relevant civil society organisations and strengthen their capacities to deliver community services during the next phase of the project. One of the project's priorities is to expand the presence of NGOs in order to support the project objectives. In particular, national level NGOs with demonstrated experience and successes in INRM landscape approach and sectoral interventions relevant to the project activities will be contacted, as mentioned in section A8. Knowledge Management.

67. Conservation Lake Tanganyika (CLT) is the sole conservation NGO operating in the project area, and in and around Nsumbu NP and Tondwa GMA. CLT has limited financial capacities but an excellent knowledge of local challenges

regarding lake and terrestrial biodiversity conservation. CLT will therefore be closely associated with a number of project activities, in particular those relating to the delimitation and demarcation of Nsumbu NP boundaries, as well as the definition of NP and GMA management plans (outcome 1.2).

68. As noted in Baseline report 1[47], the merits of distributing responsibilities to local governments and communities are compelling. However, there remain substantial concerns surrounding the transfer of powers, the channelling of financial resources from the central to district level, and engaging in capacity building initiatives amongst local authorities and communities while ensuring that participatory and transparent processes are respected. To date, there is little systemic documentation on how the Zambian experience has been progressing in this regard. The Districts of Mpulungu and Nsama have had extremely limited and very mixed experiences in this area.

69. The local institutional and community capacity situation in the Lake Tanganyika area needs to be addressed fully in order to ensure the success of the project and the long-term conservation of the Lake's ecosystem. It is clear that previous efforts from past projects, including a GEF-sponsored initiative[48], have not yielded the desired outcomes towards establishing the desired sustainable decentralized natural resource management practices in the Lake Tanganyika water basin. This project will therefore put a very strong emphasis on the coordination of interventions between the different stakeholders at the different levels and building their respective capacities in INRM and, more generally, service delivery.

[47] Baseline Report 1: Legal and Policy Framework and Stakeholder Analysis Report

[48] Lake Tanganyika Integrated Regional Development Programme (PRODAP)

A.4. Gender Equality and Women's Empowerment

70. In the chiefdoms around Lake Tanganyika – Chinakila, Chitimbwa, Nsama, and other lesser chiefs' areas, women do not have the right to directly own and control productive resources such as land and/or other forms of property. Women are restricted to managing household chores and caring for the whole family. Very often they apply their energies walking long distances in search of firewood while at the same time undertaking other house chores such as cooking and fetching water for their families. Although slightly over 50% of the population in Nsama and Mpulungu districts is composed of females, an estimated 20% of all rural households are female headed, resulting in limited decision making power. Illiteracy levels for girls and women are also high compared to boys and men. These disparities in access to productive assets, division of labor, decision-making, and lack of participation of women in much more lucrative economic enterprises and services is one of the many reasons why women have been engulfed in perpetual poverty.

71. In recognition of the importance of equal participation and beneficiation by all gender groups, data collection during project preparation phase was carried out along four gender groups. Respondents in four villages in Mpulungu were divided into four groups, namely males under 35, males over 35, females under 35 and females over 35. Although there were often more males than females present at the meetings, the input into project formulation was informed by an extensive understanding of the socio-economic activities of the rural local communities by age and gender, which also formed the basis for identifying interventions specific to gender groups, and will in turn inform the monitoring of impacts along the same gender lines.

72. The assessments undertaken during the project preparation phase will be reinforced during project implementation. During the inception period, a gender strategy will be formulated for the entire project (baseline project + GEF component) to guide further gender mainstreaming into project initiatives and to promote appropriate targeting of activities to the right gender group, for improved efficiency and impacts. The strategy will be informed by an analysis of gender relations, especially the access to and control of resources that will be the subject of the project. This will be done to highlight how the current gender relations can be positively exploited to improve targeting and project impact, as well as how the proposed activities could be negatively impacted by prevailing gender relations. This gender strategy will align with the National Gender Policy of the Ministry of Gender and Child Development[49]. It will be annexed to the inception report and be an integral part of the project implementation.

73. Furthermore, the project will partner with UN Women to conduct a gender gap analysis in agriculture, to provide further focus on how to improve the effectiveness of women's' agriculture. Studies in Africa have revealed that there is often a real gender gap in agriculture, driven by inequitable power relations and access to productive assets between men and women, occurring as a result of institutional and policy environment that fails to provide adequate resources to implement the provisions of gender mainstreaming strategies in many countries[50]. Women often have less access to i) land, ii) productive assets, iii) finance, and iv) markets and green value chains. This is compounded by the fact that women bear a large part of unpaid care work, reducing further the effectiveness of their agriculture-based income generating activities. The project will undertake an in-depth analysis of these issues and formulate strategies to ensure that implementation of its activities is informed by the findings. This will strengthen the gender strategy, help target project activities and improve the overall effectiveness and sustainability of project impacts.

74. Guided by these strategies, the project will therefore ensure that gender is at the core of implementation. For example, it will ensure that the right training is provided for the group that is predominantly involved in a certain activity. It will ensure at least 50% involvement of women in the management of natural resources, sustainable agriculture, livestock, fisheries infrastructure, and other small scale economic ventures. For example, women can take a leading role in the promotion of the Community Markets for Conservation model which will engage beneficiaries to adopt better management practices and become the foundation for conservation rather than the cause of land and natural resources degradation[51]. In this manner, the women will learn the skills to transform their natural resources management practices into profitable and sustainable small scale economic ventures.

[49] National Gender Policy, Ministry of Gender and Child Development, republic of Zambia, 2014.

[50] UN Women, UNDP, UNEP, and the World Bank Group: 2015. The Cost of the in Agricultural Productivity: Costing the gender gap in Malawi, Tanzania and Uganda

[51] Dale Lewis. Community Markets for Conservation (COMACO): Scaling up Conservation Impact through Markets that Change Livelihoods. Wildlife Conservation Society, Lusaka, Zambia

75. Efforts will be made by the project to expand trainings that support gender sensitisation and awareness raising for all relevant stakeholders - direct beneficiaries, local leadership especially the traditional rulers and respective district council frontline officers. The project will also support women to have livestock such as small ruminants (goats) and poultry as a way of empowering them in owning livestock. Major efforts should be made by the project to strengthen the capacity at the district level to collect and analyze environmental data and other relevant information and disaggregated based on gender.

A.5 Risk

Table 3. Risks and Mitigation Measures

Description of risk	**Ranking**	**Mitigation measures**
The GEF guidelines during PIF review was to strengthen a landscape approach to project implementation, which is necessary for a Multi-Focal Area (MFA) project. But the capacity deficits in the two districts are a very serious risk to the effective implementation of a large MFA project in 5 years. This is despite the fact that the baseline project has a fulltime Project Coordination Unit (PCU), primarily because that PCU is handling a very large (over 20USD million) project which includes large infrastructure development works.	High	The PCU of the baseline project has a team of 6 main staff (Project Coordinator/NRM expert, Gender/Socio-economist, M&E Officer, Procurement Officer, Civil/ Rural Engineer and Accountant. Support staff is an Office Assistant, Coxswain and Driver). While this is a good arrangement for promoting mainstreaming of the project initiatives into the current government structure (which promotes sustainability), it will not be adequate for the implementation of the additional GEF MFA project. The project implementation section proposes to reinforce the LTDP/Baseline project team with additional staff having necessary expertise to compliment the project and address GEF complexities and provide relevant skills that will be required to support government departments in the landscape approach MFA project. These should consist of an Integrated Natural Resources Management specialist, an overall Chief Technical Advisor (CTA) on part-time basis and an assistant accountant. These teams can be recruited locally if available, regionally (SADC or COMESA) or internationally (CTA). The project also provides a budget for the hiring of several international consultants, to provide short term inputs. In particular, there will be a landscape planning expert, a gender strategy expert (needed during the inception period), a wildlife/PA management expert, fisheries and income generating/markets experts, and conservation agriculture and agroforestry experts, among others. Without these additional capacities, the project will struggle and may not deliver results effectively and/or on time.
The Lake fisheries are seriously depleted. The community conservation and development committees have in the past failed to enforce community agreements to ensure that members reduce fishing effort where and when needed and observe/implement protection of breeding areas. There are risks that returns from alternative income generating activities, including cage fishing, are not attractive enough or inadequately compensate the forgone profits from current detrimental fishing practices.	High	Identifying and rolling out economically viable and sustainable alternative income generating activities in the Lake Tanganyika region is difficult, given its low levels of infrastructure development and inadequate access to lucrative markets. The baseline project is focused on improving infrastructure, including constructing an airport and roads, building market centres and supporting small community-identified economic development projects. This will go a long way to improving access to productive resources and markets. The project also focuses on building the capacity of the community conservation and development committees and empowering them (by providing them skills and operational capabilities) to improve their effectiveness in enforcing and delivering benefits from improved community resource management. In addition, the project will implement an awareness campaign targeting natural resource users to highlight the additional benefits associated with improved natural resource management, such as: fisheries' recovery and, hence, better returns, and improved soil fertility and productivity from sustainable and conservation agriculture, which in the long term outperforms short-

The benefits for communities under SLM/conservation agriculture and Joint Forest Management/Community Forestry might be too few/limited or realized only in the long-term despite short term sacrifices to serve as an effective incentive for communities to invest in forest management. In line with the above, the households settled illegally in the Game Management Areas and ecologically sensitive areas may resist the adoption of the improved resource management practices and the new rules for access and use of the natural resources of GMAs, forests and lakeshores.		lived depleting practices. This is already well understood by community groups, as was revealed during focus group discussions: for example, community members mentioned several times the need to go back to the past practice of fishing seasons, where fishing is forbidden almost half of the year. During such periods, other project activities will be developed in agriculture, fish farming, sustainable charcoal production, IGAs, enabling community members to maintain food and income sources. The project will facilitate the formation of SFM units over 12,000ha and empower communities to implement and obtain benefits from better forest management. Community engagement by GRZ forestry services will start at an early stage of project implementation, jointly defining the most appropriate SFM scheme, the forest areas concerned and the benefit sharing rules that will be put in place. Failure to establish a JFM area in the region during a previous project was mostly due, according to the concerned community, to a lack of consensus on benefit sharing. The legal evolution of the proposed SFM schemes and lessons from the past will enable better results under this project. Both the visited communities (during project preparation phase) and the GRZ forestry services have demonstrated a high motivation to succeed in this intervention. Finally the project will strengthen the capacity of the relevant technical departments (Wildlife, Fisheries, and Agriculture) to enhance enforcement and extension service. Part of the empowerment strategy will involve the recruitment of additional support (by short-term consultants) to identify effective means of achieving project objectives, including an expert on income generating activities and value chains. Working in a cooperative manner with the concerned communities is the only way to limit their actual impact on the NP/GMA and enforce legislation, while improving their means of subsistence through activities outside of those areas, not relying on the resources of these areas. An important aspect, as shown during the consultations conducted in Nsumbu NP, is that the communities illegally settled in the NP (who have sometimes been there for decades) do not grow, and that young people tend to settle outside. Attracting those people outside of the NP will be done through IGAs and access to infrastructure (roads, schools) developed by the project and the baseline project.
Benefits from Sustainable Forest Management might be derailed or delayed due to long, bureaucratic and drawn out process for identifying, mapping and demarcating forests for JFM/CF or other SFM schemes, formulating management plans, finalizing agreements between communities and forestry department, and actually gazetting the forests under JFM/CF or other SFM schemes.	Medium	A previous project failed to take the JFM process for one JFM initiative to gazettement (official designation for protection by the State or other public authorities) in 5 years. This project proposes to have 12,000ha under SFM gazetted in 5 years, an ambitious undertaking. However, the new Community participation in Forestry policy has identified the slow process of gazettement as a critical barrier to community participation on forest management and issued specific guidelines to simplify, and hasten the process. However, these new guidelines have not been tested yet, so there is no track record for how effective they will be. Concerned stakeholders consider that the overall process could take up to 2 years, which is long but falls into the project duration very well. In order to expedite the process, additional staff to the baseline PMU (including short-term consultants) is planned, bearing in mind that community based institutions need to evolve slowly but steadily, if they are to gain capacities to facilitate improved resources on the ground. Rushing formation of institutions for the sake of meeting project deadlines can be counterproductive. In addition, the project will seek to utilize existing community natural resources management committees wherever possible (rather than form new ones) such as the Resource

		Management Board, the Village Action Groups, and the Village Conservation and Development Committees. The project will also formulate and mobilize the funding for implementation of sustainability strategies for empowering these community natural resources management bodies with the necessary skill set to ensure that project impact continues far into the future.
There is a risk that the ecological characteristics of the miombo woodlands will make forest regeneration too difficult and too expensive to make participatory SFM a viable option.	Low	The project will adopt the practice of protecting degraded areas from excessive wood collection, fires and overgrazing as a primary mode of forest regeneration. Experience elsewhere has shown that this is the optimum mode of forest regeneration as it restores much of the original biodiversity, especially for the miombo woodlands. In addition, previous afforestation experiences in the region obtained mitigated results, and, as a consequence, natural regeneration is pushed forward by the Department of Forestry.
Rural communities in the two districts are highly rural with strong adherence to traditional cultural practices, which often disadvantage women. There is a risk that, in striving to remain "good" members of the community, both men and women resist project gender-based interventions, defeating the gender mainstreaming objective and reducing project effectiveness and impacts	Medium	The project will formulate a gender strategy to inform project implementation, which will be done during the project inception period and become part of the inception report. It will also collaborate with UN Women to do an in-depth analysis of the gender gap in agriculture and to use its findings to design an awareness raising and education strategy to educate the communities on the importance of mainstreaming gender in improving the efficiency and effectiveness of development and conservation interventions. This will target all gender and age groups – adults, youth and the elderly, as well as children (for sustainability). The project will explore the possibility of using the school curriculum to disseminate the importance of gender mainstreaming into development, in order to reach a wider and younger audience, which will improve sustainability of the impacts well into the future.
The successful implementation of this project will depend highly on the effective coordination of the various technical departments and their ability to provide extension services and to enforce NRM rules and regulations. There is a risk that coordination across the departments is ineffectual due to unequal mandates and capacities.	Medium	The project will facilitate effective coordination between all the relevant technical departments. To make this possible, the project will hire additional PCU staff members, in particular a part-time Chief Technical Advisor and an Integrated Natural Resources Management specialist, supported by other short-term experts on relevant subjects. These experts will be absolutely necessary to boost project capacity in the two districts and to ensure a smooth delivery of project initiatives while also undertaking capacity development. Together with the existing staff of technical departments, the PCU will improve the delivery of extension services.
The diversity of local stakeholders is limited, with few service delivery partners such as cooperatives and microfinance institutions, and very few NGOs with operational capacity in the project area. This may add difficulties on the ground to properly implement the planned activities	Medium	The project puts strong emphasis on building the capacities of service delivery partners (in particular under *Output 2.1.1 Improved service delivery from cooperatives, unions and microfinance institutions*) and will make sure to identify and reinforce relevant local NGOs, as presented in section *A3. Stakeholders* of this document. In addition, partnerships with similar initiatives in other parts of the country will enable knowledge and experience exchanges as well as the identification of relevant technical partners who may support project delivery (see section *A.6. Institutional Arrangement and Coordination* §86).

Given the location of the project site, which is far (>1000km) from Lusaka where many decision-makers are based, project management decisions, and in particular financing decisions, may be difficult to coordinate	Low	Procurement and Financial Management Arrangements are described in detail in the baseline project document. They will strictly follow the African Development Bank rules and procedures. The PCU, based in Mpulungu district, "will be accountable and responsible for the management of the procurement processes and accountability for implementation of all components. (…) The PCU will carry out major procurement activities and ensure oversight of all the procurement carried out during project implementation. (…) The Project's financial management will be managed within MLNREP's existing set-up, consistent with the Bank's commitment to use country systems." Experience from other AfDB projects in Zambia has enabled to build strong procedures and quick information flows that should mitigate residual risks in this regard.
Extreme climatic events associated with climate change may affect vegetation regeneration.	Low	The creation of empowered community managers with adaptive management capacities may be the best strategy for adapting to the possibility of extreme climate change events. It is the present conditions of uncontrolled, open access, and unsustainable use of fisheries, land and forests that makes them the most susceptible to climate change, which are being addressed by the present project. The planned interventions will increase the resilience of ecosystems to extreme events.
Potential risks of exotic/invasive species disseminated through afforestation	Low	The project will utilize existing guidelines on safeguarding against potential risks of exotic species becoming invasive species or having a negative impact on the environment. For example, the project will adhere to Guidelines on Biofuels and Invasives developed by IUCN (https://cmsdata.iucn.org/downloads/iucn_guidelines_on_biofuels_and_invasive_species_.pdf). This will ensure that only plants that do not have tendencies to become invasive or have negative impacts on the environment are selected and introduced to the project farms, in particular those already used in the region for a number of years with proven absence of negative impacts on the environment.

A.6. Institutional Arrangement and Coordination

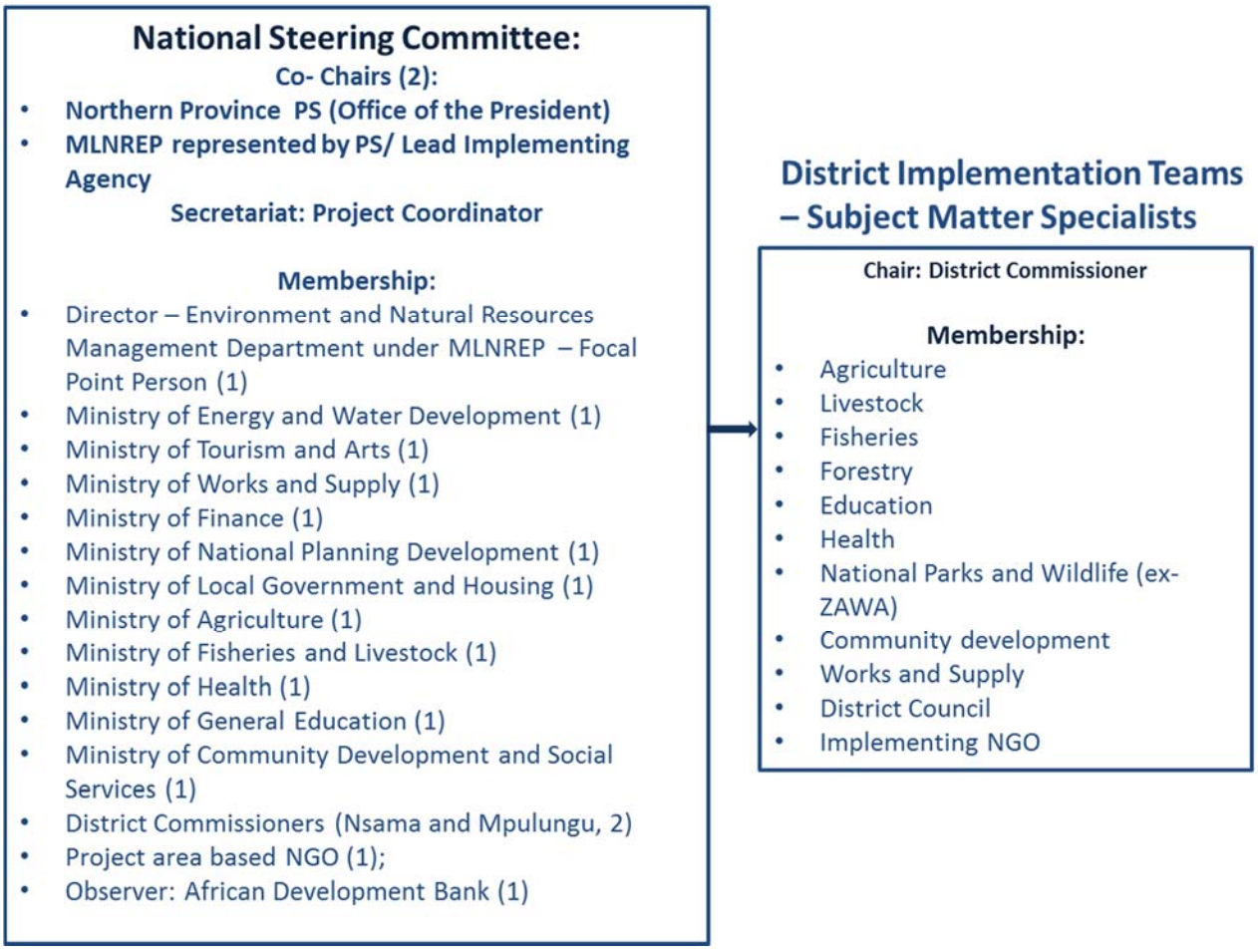
Institutional Arrangement

76. In order to enhance efficiency in the implementation of this project, a highly decentralised but efficient, and inclusive structure is being proposed. The lead implementing agency for the project will be the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP), whose Chief Environmental Management Officer will act as the Project Focal Point (PFP). While MLNREP will act as the Executing Agency it is understood that unlike the other ministries implicated in the project, MLNREP does not have a ministerial presence at the District level. The Forestry Department that is under the auspices of MLNREP, however, is present at the District level.

National Steering Committee (Oversight)

77. The multi-sectoral National Steering Committee (NSC) which was in place during the closed Lake Tanganyika Integrated Regional Development Programme (PRODAP project) will be re-activated. However, additional members will be proposed and the full NSC membership will be as follows:

Figure 1. National Steering Committee and District Implementation Teams



78. The NSC will be co-chaired by the Permanent Secretary - Northern Province and the MLNREP. The project coordinator will be the Secretary of NSC. The project will be implemented over a period of 60 months and technically will fall under the oversight Director of Environment and Natural Resources. The National Steering Committee (NSC) has a guidance and oversight role that needs to be managed at the Ministerial level (especially considering that the baseline project funds are in the form of a loan, which is followed by the Ministry of Finance with ministerial presence at the provincial level). It is proposed that the AfDB is represented on the NSC as an observer, as it is the main financing cooperating partner.

79. As there is a dearth of NGOs established and operating in the local area, it is proposed that Conservation Lake Tanganyika (CLT) which is currently operating in the Lake Tanganyika Basin be appointed to sit on the NSC. Improving CSO capacity in the project area will be prioritised. The first two years of the project will be used to identify and support the participation of Conservation Lake Tanganyika and when it is deemed appropriate, other NGOs may join in the NSC as part of the effort to expand the presence of NGOs in support of the objectives of the project. This will allow for an expanded committee with 15-17 members. It is proposed that in the first year the NSC meets quarterly and thereafter twice a year. Furthermore extraordinary NSC meetings may be called upon to immediate address any urgent issues. The NSC will have the main function of providing oversight and policy guidance on the project implementation on both the baseline LTDP project and the GEF component, including the following: overseeing the efficient management and coordination and ensuring the achievement of the expected results and project purpose; overseeing project compliance with sub-sector national policies and strategies; resolving any challenges (hindrances and/or bottlenecks) to project implementation; approving agreed project's annual work plans and budgets; and reviewing progress of project implementation to ensure that set targets and goals are met.

Day to day implementation

80. The day to day management of the project is the responsibility of the Project Coordination Unit (PCU), comprised of the persons already recruited for the implementation of the baseline project – a Project Coordinator who will also act as the Project's Natural Resource Management expert; a Gender/Socio-economist; a M&E Officer; a Procurement Officer; a Civil/ Rural Engineer and an Accountant. Support staff will be an Office Assistant, a Coxswain and a Driver. Given the complexity of the project, which comes in addition to the 26 million LTDP baseline project coordination needs for the PCU, it is proposed to reinforce the PCU with 3 additional staff to compliment the PCU:

- an Integrated Natural Resources Management specialist (1);
- an overall Chief Technical Advisor (CTA) with strong experience in GEF projects management on time-part basis (1);
- an assistant accountant and driver to compliment the support staff (2).

81. The project team will be based at the project office in Mpulungu and will be domiciled in the new office complex being constructed in Mpulungu. Due to the geography of the basin and the long distance between the two districts, a District Coordinating Office will be established in the District Commissioner's office of Nsama. One of the criticisms of the PRODAP project was that the PCU members were implementing activities without involving properly the main stakeholders, in particular GZR decentralized staff. It was agreed at project formulation that in the future project approach, the PCU will merely play a facilitatory role, in that its members will oversee, coordinate and monitor the implementation of activities, which will be carried out by the relevant GRZ departments and associated partners, including civil society organisations. The Project Appraisal report of the LTDP baseline project mandates the DC Nsama to coordinate the implementation of project activities. Given the challenges faced by Nsama as a new District, the situation will be monitored to determine if additional measures are required to improve coordination capacity. It is proposed that one senior PCU member be based in Nsama to manage and coordinate the office in Nsama. In Mpulungu this role will be assumed by the project Coordinator. This arrangement will contribute to improving the implementation and monitoring of project activities in the target areas.

82. The ground level implementers will include district Subject Matter Specialist (SMS) as shown in Figure 1 above. Based on the approved annual work plan and budget by the NSC, these implementers will sign implementation agreements with the PCU (who will provide supervision functions to the NSC, either DC Nsama or DC Mpulungu). The PCU is supervised by the Director of the Environment and Natural Resources Management Department (ENRMD), but the two DCs will undertake monitoring and supervision of the implementers within the districts. The project will make it possible for community-based volunteers to mobilise communities to access project services for various SLM activities. The two District Commissioners (Nsama and Mpulungu) will provide day-to-day monitoring and supervision of the project to its implementers within their districts. The District Commissioners will undertake field supervision and facilitate the processes of audits and procurement.

83. The Ministry of Finance will provide financial oversight and Zambia's Reduce Emissions from Deforestation and Forest Degradation (REDD+) Secretariat that is housed in the Ministry will be called on periodically to provide technical guidance. Ministry of Agriculture will be responsible for promoting improved agricultural land Management and Integrated Landscape Management practices. Department of Fisheries will be responsible for improving fisheries practices within the Water Basin. The Department of National Parks and Wildlife will oversee assistance to the Nsumbu

National Park and improving practices related to Game Management Areas. The Forestry Department will be responsible for improving forestry management and the restoration of forest. The Department along with the Ministry of Agriculture will be expected to contribute to improvements in agro and forest ecosystem services. The Ministries of Health and General Education will be expected to guide activities in their respective fields. Given the project aims to build both local institutional and community level capacity to manage local natural resources, the Ministry of Local Government and Housing which has overall responsibility for the decentralisation process will be an important partner as the project progresses towards this objective..

84. As part of the decentralisation process in Zambia line ministries are expected to devolve authority and resources down to the district level. This includes human resources. In this regard, Ministries with previous GEF experience will be encouraged to assign staff with GEF project experience and other relevant backgrounds at the level of the two districts. Therefore, all ministries will have the same opportunity to ensure experienced people are in place. As staffing levels at the district levels are to increase this can be accomplished while retaining existing personal.

Coordination

85. The PIF outlines coordination of the project with other past and ongoing GEF and AfDB projects, in particular the UNDP/GEF project on Partnership Interventions for the Implementation of the Strategic Action Program for Lake Tanganyika (referring to the Convention for the Sustainable Management of the Lake Tanganyika) and the Lake Tanganyika Regional Development Program (PRODAP) funded by AfDB and other donors. It also highlights the need to coordinate with FAO regarding Farmer Field Schools (FFS) given its expertise in this field.

86. Three notable initiatives in close proximity to the project have been identified during project preparation:

1) The Decentralised Forest and other Natural Resources Management Programme (DFNRMP) funded by the Finnish Government. The DFNRMP is considered to be a "introduction project" of 3 years for the Finnish Department for International Development Cooperation but the intervention in Muchinga Province is actually considered a 12-year commitment. It supports the decentralisation of responsibilities, functions and resources covering the management and conservation of natural resources, from the central government through devolution to District Councils and on to communities and households. The focus of DFNRMP is essentially to devolve authority.

2) The five-year USAID-funded Community-based Forest-management Programme (CFP) in Eastern Province began in 2013. It aims to strengthen the national REDD+ process through the piloting of different approaches to participatory forest management, through both JFM and CF. The objective is to demonstrate drivers to lessen deforestation by involving local communities.

3) Through the BioCarbon Fund, the Zambia REDD+ Office has been implementing the Zambia Integrated Forest Landscape Programme for the Eastern Province (ZIFL-P).[52] The ZIFL-P covers agriculture and aims to improve livelihoods and wildlife management. The approach promoted by the ZIFL-P to community manage natural resources is very similar to USAID's approach that works with the local population and builds out to capacitate local institutions. All three of these projects are pioneering the actualisation of the new Forests Act No. 4 of 2015.

87. Preliminary discussions have been held with representatives of these three projects regarding coordination and cooperation and although it is still at a preliminary stage there is willingness from all three to see how cooperation might work. Given the physical proximity and shared thematic programming areas, the project stands to benefit from cooperation. In addition, the three projects have established working relations with Zambian partners including NGOs and technical experts. The project will consult with USAID, Finnish Development Assistance and the REDD+ Office to identify suitable national organisations and technical experts who could assist the project in meeting its own objectives. The projects of these other donors are more advance and this is very beneficial for this project in terms of being able to have a close look at what national partners are capable of before making critical strategic decisions on partnering with national entities.

88. As the project shares a large geographic area with the DFNRMP, CFP and the REDD+ interventions share a large geographic area, a coordinated and shared approach for the entire area could eventually emerge. In the short to medium-term there will be learning opportunities for the project from these and other projects related to building local

[52] http://www.biocarbonfund-isfl.org/sites/biocf/files/documents/Zambia%20Integrated%20Forest%20Landscape%20Program.pdf

community and institutional capacity to manage natural resources, game management areas, and introduce sustainable agriculture. The experiences of devolving authority and improving circumstances related to property rights are also possible areas for learning. Something that will be of special interest will be to learn from the experiences in signing agreements between governments and communities to manage community forests.

89. In addition, the Ministry of Agriculture, that will be a proactive institutional partner in the project, has had recent experience of direct relevancy. The head of the Kaputa District for the Ministry of Agriculture which is next to the project's implementing area has overseen activities in areas such as farmer participation, introducing new farming practices and specific issues like climate change. In this context, staff transfers arrangements should be considered with all institutional partners who have staff with direct GEF experience or relevant backgrounds and experiences.

90. Finally, the project will liaise with the *Water Resources Development Project for Republic of Zambia* (World Bank) that supports the implementation of an integrated framework for development and management of water resources in Zambia, as well as the *Water Sector Reform Programme*, funded by the German Federal Ministry for Economic Cooperation and Development. Both these programmes are being implemented by the Ministry of Mines, Energy and Water Development and are intended to provide added support in the implementation of the water reform in Zambia. Further as noted in Baseline report 153, the Water Resources Management Act No. 21 of 2011 prescribes for the establishment of climate-sensitive water resource management, functioning, and composition of catchment councils, sub-catchment councils and water users associations.The project will dwell on closer cooperation with organizations responsible for the resources management in order to ensure synergies and coherent efforts in sustainable water management and utilization in the Zambia's Lake Tanganyika catchment area

Additional Information not well elaborated at PIF Stage:

A.7 Benefits

Local/community level benefits

91. As mentioned earlier, the majority of the people in the lake basin are very dependent on the exploitation of natural resources (forests, wildlife, fisheries, and agriculture). All these sources of livelihoods are interlinked. Overexploitation and use of non-sustainable practices have however been the cause of land and natural resources degradation[54] including fragmentation of ecosystems.

92. As a consequence, there are several socio-economic benefits that are anticipated to be delivered by the project. Firstly, the project will galvanize and leverage its interventions for conservation in order to protect and conserve marine and terrestrial natural resources and guarantee co-benefits for the present and future generations, in particular: good forest conditions, delivering multiple ecosystem services; fertile agricultural land, demonstrating better resilience to climate hazards; important fish stocks and good lake water quality. Secondly, the project will enhance sustainable livelihoods through sustainable natural resources management, agriculture productivity growth and diversification. Thirdly, these efforts will lay a solid foundation for improved household food security and incomes at the local level.

93. In terms of adaptation benefits, the community will have a better understanding of climate-resilient pathways through increased awareness of the vulnerabilities associated with climate change. In agriculture systems for example the communities will begin to utilize short cycle varieties to mitigate against the shortening of the growing season. Small-scale irrigation investments will also enable residents to intensify agriculture production during the dry season and promote horticulture which is important for food and nutrition security as well as income generation.

94. Positive community behavior change will occur as new skills are inculcated among the communities to understand the connection between their activities on deforestation and the escalation of vulnerabilities as a result of adverse weather events such as floods and drought and adaptation measures required to improve their own livelihoods.

[53] Baseline Report 1: Legal and Policy Framework and Stakeholder Analysis Report

[54] Dale Lewis. Community Markets for Conservation (COMACO): Scaling up Conservation Impact through Markets that Change Livelihoods. Wildlife Conservation Society, Lusaka, Zambia

95. Further, it can be elaborated that mobilization accompanied by effective participation of the community in natural resource management should lead into effective community engagement. This engagement is in fact the means for transcending the delivery of economic benefits to the community.[55] Key to this is in the form of increased household incomes, alternative jobs creation away from relying on overexploitation of natural resources, and rural development. If well-managed and embraced, the community has intrinsic social capital that can lead to tangible access to biodiversity and sharing which is well enshrined in the Zambia Wildlife Act No. 15 of 2015, Forests Act No. 4 of 2015, Environmental Management Act No. 12 of 2011, and other relevant pieces of legislations and policies. The community resource boards (CRB) as they stand are powerful community-based management structures for advancing natural resource conservation and distribution of benefits to the membership as well as rural community development through expanded socioeconomic services and networks.

96. As demonstrated in the Community Markets for Conservation (COMACO) model (where communities are rewarded with financial incentives for adopting and adhering to friendly sustainable practices for conservation) economic activities introduced by the project and supported by the communities can serve as an incentive for compliance to good land planning and sustainable utilization of natural resources. As highlighted in the PIF, the project will encourage the communities to therefore effectively participate in small scale economic ventures to raise their income and empower them to seek ways for permanent and transformational change away from solely depending on the natural resources for their survival.

National Level Benefits

97. At the national level, conservation agriculture will boost the rural economy through agriculture production (crop diversification and agroforestry systems) and raise the contribution of the agriculture sector to improve a green and climate- resilient economy. These efforts will also contribute to the reduction of GHG emissions as clearly defined in the Zambia's Intended Nationally Determined Contribution (INDC) to meet a set target of 47% emission reduction target, with 2010 being the base year[56]. Furthermore, the project will set as a good example for pro-actively augmenting country's efforts to reduce poverty, attainment of low carbon climate resilient economy, sustainable development and become a high middle income and prosperous nation by 2030 in line with its R-SNDP and the country's Vision 2030.[57.] Value chain processes in various enterprises such as tourism will raise the economic profile of the country through a positive impact on the national treasury and help reduce downward spiral of poverty. The project will therefore have a positive effect on reducing poverty levels which has been recognized as being alarmingly and stubbornly high amongst the people in the rural areas despite the country's strong macro-economic indicators realized over the past decades.[58] Tourism in the Northern Province is still nascent but, if well developed, stands out to be a beacon for supporting significant economic growth and the promotion of rural development with greater potential for enhancing foreign exchange earnings, job and wealth creation, and income generation, as well as alternative livelihoods. The province will have the capacity to develop hospitality industry tourist infrastructure that capitalizes on Lake Tanganyika's wonderful beaches, beautiful panorama landscapes and scenery, as well as the Nsumbu National Park.

Achievement of Global Environmental Benefits (GEBs)

98. The environmental and socio-economic benefits described above will contribute to GEBs:

- SFM/CF areas shall improve the forest cover and density, and thus carbon sequestration in both districts;
- SLM and conservation agriculture increase carbon sequestration into soils;
- Land-use plans and in particular management plans developed in the Nsumbu NP and the Tondwa GMA, associated with capacitated wildlife services and wildlife tourism development will have a positive impact on the conservation of biodiversity;

[55] Ministry of Tourism, Environment and Natural Resources (2005) National Policy on Environment. Lusaka, Government of the Republic of Zambia

[56] Government of the Republic of Zambia. Zambia's Intended Nationally Determined Contribution (INDC) to the 2015 Agreement on Climate Change (Undated).

[57] The mitigation and adaptation programmes are defined in the R-SNDP but these efforts as outlined in the INDC will be well-integrated in the Seventh National Development Plan (SeNDP) currently being developed.

[58] Government of the Republic of Zambia. National Agriculture Investment Plan 2014-2018 - under the Comprehensive Africa Agriculture Development Programme, Final Draft, Ministry of Agriculture and Livestock. Lusaka, Zambia.

- Protection of Lake Tanganyika fish breeding areas (at least in the Nsumbu NP) and improvement of water quality expected from reduced siltation, in addition to activities on sustainable fishing practices will positively impact the Lake biodiversity;
- The various interventions on erosion control, afforestation, SLM and SFM will positively reduce land degradation.

A.8 Knowledge Management

99. From a knowledge management perspective, the project is well situated to benefit from a number of recent developments in the area of local natural resource management including both project activity and legislative changes. The new Forests Act No. 4 of 2015 has essentially enhanced the possibilities for community engagement in forestry activity by placing an emphasis on facilitating Joint Forestry Management (JFM) and Community Forestry (CF).[59] The objectives of the Forests Act of 2015 correspond with other legislative changes such as the Local Government (Amendment) Act No. 9 of 2004 and the National Decentralisation Plan of 2002[60] that collectively encourage and facilitate the management of natural resources at the local level by both communities and local governments. In anticipation of (or as a result of) the enactment of these legislative changes, an increase in project activities focused on the management of Natural Resources through local mechanisms has been noted in Zambia. Of particular interest is the fact that some of these initiatives are geographically aligned with the project since they are being implemented by districts and provinces involved in the project (see section *A.6. Institutional Arrangement and Coordination*/*Coordination*). This should facilitate learning opportunities and other synergies allowing the project to benefit from proven experience and expertise.

100. There are also other experiences and capacity building efforts across the country that could be reached out to. For example, the Nature Conservancy has been working in Game Management Areas promoting sustainable livelihoods within the boundaries of North Luangwa National Park. There is also the work of the *World Fish Center* managing to improve wild capture fishing activity in the trans-border context of the Zambezi River. These initiatives and others from national NGOs will provide very good learning platforms for the project.

101. Some of the project activities that can be anticipated related to Knowledge Management include:

- Establishing an ongoing dialogue to learn about best practices and lessons learned from projects such as DFNRMP, CFP and REDD+ and from other parts of the country. This could include dialogue and exchanges at a strategic level and more at the district to district level between projects. A focus will be placed on innovative approaches to managing fisheries stock. The PCU will take a lead role in contacting the relevant partners and oragnising exchanges, through meetings and site visits, in order to take stock of existing experiences.
- Exchanges such as study visits between community members and local authorities in the Lake Tanganyika Water Basin to areas with more advanced experiences in locally managing natural resources.
- Adaptation of practices established by projects such as the CFP and DFNRMP facilitated by technical support provided by local organisations and technical experts familiar with these projects.
- Introducing successful training modules developed by partners such as CFP, DFNRMP that are adapted to the circumstances of the Lake Tanganyika Water Basin area.
- Integrating technical experts with relevant experience such as those who have worked on previous GEF projects into the project.
- Explore the development of permanent arrangements to share information, establish best practices within the larger programming areas covered by the project in the Lake Tanganyika Water Basin, the DFNRMP in the Muchinga Province and CFP and REDD+ in the Eastern Province.

102. While importing lessons learned and best practices from other projects will be critical, at some point the project will progressively generate learning opportunities. The project team will be mindful of this and as solid experiences both positive and negative are established, channels to enable learning will be established. For example, the communities that are the initial focus of the project will be critical from a learning standpoint. For example a community that has negotiated with the Government an agreement to manage their local forest under a JFM scheme will inform other communities in the two districts regarding its experience. Given there is currently limited experience in the

[59] http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Forest%20Act%202015.pdf
[60] http://www.parliament.gov.zm/sites/default/files/documents/acts/Local%20Government%20Act.pdf

project zone, communities and individuals learning from exchange visits to other projects such as the DFNRMP, will be expected to share their experience with other project stakeholders.

103. Some of the project activities that can be anticipated related to knowledge management within the project zone will include:

- The PCU will develop an internal strategy for coordinating the sharing of information between and within Districts and between communities on areas of common interest such as establishing JFM and CF agreements.
- Based on project experience for each activity the project team will eventually develop Best Practices guidelines for project activities that will be shared amongst project stakeholders.
- Exchange visits will be arranged for communities initiating new activities to communities that are further along in the implementation process of those same activities.
- Communities and individuals that visit or are trained outside of the project area will be given support and guidance to allow them to share their experiences with others within the project zone. This arrangement will also be made for internal learning as critical experience is gained.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 Consistency with National Priorities

104. The key piece of legislation for the project is Zambia's National Vision 2030 that is the first long-term strategic plan for the country.[61] All major government acts and policies developed since its enactment are designed to contribute to the achievement of the objectives of Vision 2030 that provide for the establishment of a decentralised governance system with specific goals and targets for different sectors to achieve by end of 2030. In support of Vision 2030, the Government has implemented a five-year national development plan including the most recent that was revised in 2014 to cover the years 2013-2016.[62] The objectives of this project are fully aligned with the national priorities expressed in Vision 2030 in particular the global objective of "maintaining a safe, sustainable and secure environment for sustainable economic growth and development.[63]" In fact, the project is consistent with all the policies and strategies noted in this section.

105. The project is among a number of other current projects serving as a testing ground for new Government legislation focussed on devolving authority and resources to local governments and communities, with the aim of broadening the available approaches for achieving more effective management of natural resources. Notable in this regard are the Local Government (Amended) Act No. 9 of 2004 and the National Decentralisation Policy 2002[64] and the Urban and Regional Planning Act No. 3 of 2015.[65] The Decentralisation Policy aims to "devolve authority, functions and responsibilities to the district level in order to improve the quality of service delivery at the sub-national level, including management of natural resources." [66] The Urban and Regional Planning Act as mentioned above is designed to enable greater community involvement in local planning decisions and complements the policy on Decentralisation.[67]

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[61] http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf

[62] http://www.gwp.org/Global/Activities/Impact%20Stories/Supporting%20documents/Revised%20Sixth%20National%20Development%20Plan.pdf

[63] http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf pp.4

[64] http://www.parliament.gov.zm/sites/default/files/documents/acts/Local%20Government%20Act.pdf

[65] http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Urban%20and%20Regional%20Planning%20%20Act,%202015.pdf

[66] http://www.parliament.gov.zm/sites/default/files/documents/acts/Local%20Government%20Act.pdf

[67] http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Urban%20and%20Regional%20Planning%20%20Act,%202015.pdf

106. Also of direct relevance is the new Forests Act No. 4 of 2015[68] that, compared to the previous Act favours more varied approaches to achieving the objective of 13% forestry coverage across the country. This Act attempts to correct the shortcomings of the previous act in relation to Joint Forestry Management (JFM) and introduces new elements such as Community Forestry (CF). Overall the new Forests Act has provisions for the participation of local communities, local authorities, traditional institutions, NGOs and other stakeholders in the hopes of promoting sustainable forest management practices. In addition the Zambia Wildlife Act No. 15 of 2015[69] that has progressive statutes for the conservation and enhancement of wildlife eco-systems, biological diversity and measures related to National Parks. It describes the requirements for establishing control and co-management of Community Partnership Parks and has provisions to legislate the sustainable use of wildlife and the management of the wildlife habitat in Game Management Areas (GMA).

107. The Second National Biodiversity Strategy and Action Plan (NBSAP2)[70] is an example of new legislation that is expected to contribute to both long and medium-term national development objectives as expressed in the Vision 2030 and the five-year R-SNDP respectively. The NBSAP 2015-2025 is expected to assist with the domestication of Zambia's obligation under international agreements, conventions and agreements such as the Convention on Biological Diversity (UNCBD), and regional South African Development Community Countries (SADC) protocols on wildlife, water, fisheries, forestry, and others.[71] Some of the key objectives of the NBSAP 2015-2025 that are directly relevant to the project include: ensuring local communities values biodiversity and the steps they can take to conserve and use it sustainably; areas under agriculture, aquaculture and forestry (forest reserves, parks, Game Management Areas, forest concessions, open areas) are managed sustainably. The Lake Tanganyika Convention is of critical importance as the Lake is an international body of water. The Convention applies to Lake Tanganyika and its Basin. It is applicable to all human activities, aircraft and vessels under the control of a "Contracting State" on how to respond to any unwanted impacts. The Convention's overall objective is to "ensure the protection and conservation of the biological diversity and sustainable use of the natural resources of Lake Tanganyika and its basin".[72]

108. The National Agriculture Policy (NAP) 2011-2030 replaces the previous National policy covering the period of 2004-2015. It is designed to address a number of weaknesses impeding progress including low agricultural productivity among small scale farmers. In 2007, the Government passed the Fisheries (Amendment) Act of 2007 to Amend the Fisheries Act of 1974.[73] The Fisheries Act of 2007 introduced a number of practical considerations including the goal of engaging surrounding communities in fisheries management. Further the amended Fisheries Act No. 22 of 2011 provides for sustainable fisheries and aqua-cultural development and management. Under the new Act, each fishery will be designated a Fisheries Management Area, and run by a Fisheries Management Committee.

109. The National Climate Change Response Strategy (NCCRS) of Zambia was developed to support and facilitate a coordinated response to climate change. The Strategy is meant to enable Zambia to address the issues related to climate change faced by the country while meeting international obligations.[74] A new Draft National Policy on Climate Change (NPCC 2016) has been developed to support and facilitate a coordinated response to climate change complexities in the country. It will enable Zambia to re-align its climate-sensitive sectors of the economy and its society in order to meet its development goals through adaptation and mitigation interventions.[75] The policy will also contribute to the achievement of the overall objective of the United Nations Framework Convention on Climate Change (UNFCCC) which is "*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"*. These efforts are designed to support the achievement of Zambia's development priorities as articulated in its long-term strategic plan – the Vision 2030. In addition, in line with Zambia's obligations towards the UNFCCC, this project will directly support the implementation of Zambia's INDC.

[68] http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Forest%20Act%202015.pdf

[69] http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20%20Zambia%20Wildlife%20Act,%202015.pdf

[70] https://www.cbd.int/doc/world/zm/zm-nbsap-v2-en.pdf

[71] https://www.cbd.int/doc/world/zm/zm-nbsap-v2-en.pdf

[72] http://www.ecolex.org/server2.php/libcat/docs/TRE/Full/En/TRE-001482.pdf

[73] http://faolex.fao.org/docs/pdf/zam78316.pdf

[74] http://www.adaptation-undp.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

[75] Government Republic of Zambia. 2016. Draft National Policy on Climate Change

C- DESCRIBE THE BUDGETED M&E PLAN

110. The project will follow the African Development Bank's standard monitoring, reporting and evaluation processes and procedures, as well as the GEF monitoring and evaluation policies and guidelines. The M&E officer within the LTDP baseline project will undertake Monitoring and evaluation of the GEF project. Additional funds to what is already dedicated to M&E within the LTDP were provided for specific monitoring and evaluation of the GEF component (US$ 150,000) to ensure that the project monitoring system is operational and to conduct mid-term review as well as end of project evaluation. M&E activities are part of component 4 of the project, which also includes Knowledge management activities.

111. The project implementation will be planned over a period of 5 years, starting from the date of approval by the GEF. The PCU will be responsible for internal monitoring of the project and will establish quarterly and annual reports on the implementation progress according to the format recommended by the Bank and GEF's requirements. Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the project Results Framework presented in Annex A of this document. The PCU will also provide the Bank with the necessary information to complete the annual implementation reports required by the GEF, as well as project evaluations. The National Steering Committee and the Bank will be responsible for external monitoring through supervision missions, which will be held on a biannual basis, and the Mid-Term Review (MTR) will be planned into the second half of the second year of the project, together with the MTR of the LTDP, if possible.

112. The project monitoring and evaluation approach will also facilitate learning and mainstreaming of project outcomes and lessons learned into international good practice as well as national and local policies, plans and practices.

113. A summary of the envisaged M&E activities is provided in the following table.

Table 4. Summary of M&E activities

Type of M&E activity	Responsible Parties	Budget US $ (Excluding project team staff time)	Time frame
Inception report, including a gender strategy	▪ PCU ▪ AfDB country office and project officer ▪ Consultants	USD 20,000 (as completed by PCU)	Within 3 month of project start
Surveys to determine CCM tracking tool, PMAT and BD tracking tool baseline values	▪ PCU ▪ AfDB country office and project officer ▪ Consultants	Indicative cost: 20,000	Within first year of project implementation
Project Progress Reports	▪ PCU, with inputs from implementation institutions, PSC members and other partners	USD 0 (as completed by CTA and PCU)	Semi-annual
Supervision visits and rating of progress in PPRs and PIRs	▪ PCU ▪ AfDB country office and project officer	Paid by GEF agency fee. Visits of the Project Focal Point and CTA paid from the project travel budget	Annual or as required
Project Implementation Review report	▪ PCU ▪ AfDB country office and project officer	Paid by GEF agency fee	Annual
Technical reports	▪ PCU ▪ AfDB country office and project officer	USD 20,000 (incl. report on best practices and lessons learned)	As appropriate

Type of M&E activity	Responsible Parties	Budget US $ (Excluding project team staff time)	Time frame
Mid-term Evaluation/Review	▪ AfDB /Government	USD 40,000 for independent consultants and associated costs	At mid-point of project implementation
Final evaluation	▪ AfDB /Government	USD 50,000 for external, independent consultants and associated costs.	At the end of project implementation
Terminal Report	▪ PCU ▪ AfDB country office and project officer	USD 0 (as completed by CTA and PCU)	At least two months before the end date of the Execution Agreement
TOTAL indicative COST		USD 150,000	

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[76] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Mahamat ASSOUYOUTI AfDB		08/30/2016	Siham MOHAMED AHMED	+22520262259	S.MOHAMEDAHMED@AFDB.ORG

[76] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK

Title and location of the project	Zambia Lake Tanganyika Basin Sustainable Development Project					
Program Objective	To improve natural resources management and the livelihoods of communities in Zambia's Lake Tanganyika Basin through sustainable and integrated use of lake resources					
Results chain		**Performance indicators**			**Means of verification**	**Risks/mitigation measures and assumptions**
		Indicators	**Baseline**	**Target**		
Impact	**Zambia Lake Tanganyika Basin natural resources are sustainably managed, delivering long term benefits to local communities**	Annual Income of beneficiary household Land area under effective management in production systems with improved vegetative cover	Mean annual income in Northern region Numerous examples of depletion of NR	An average increase of 25% in mean annual income in each district's project zones 20,000ha	Government statistics Project reports; SFM/CF gazettement evidence; agriculture services reports on conservation farming interventions	Risk: Insufficient human and institutional capacities Mitigation: the programme will have capacity building activities (land-use planning, INRM, sector-specific) at the district and regional levels Assumption: the project is funded and launched in 2016
Outcomes	**Component 1. Development of capacities (skills, information) and investments to support landscape approach to Integrated Natural Resources Management (INRM)**					
	Outcome 1.1- Improved Landscape planning in Zambia's Lake Tanganyika basin	District comprehensive land management plans and guidelines available	No comprehensive land management plans in place	2 plans (1 per district) and associated implementation guidelines	Plans	Risk: insufficient institutional capacities of national and local planners and implementers
	Outcome 1.2 - Improved capacity of technical institutions and community	Successful establishment of land use management agreements such as	No land use management agreements in place	12,000ha under SFM schemes (JFM/CF) Nsumbu NP General Management Plan in	Project reports JFM/CF gazettement proofs Management/land-use plans	Mitigation: the programme will provide training at all levels, including community planning

	groups to implement landscape approach to INRM	JFM/CF, and management/land-use plans for Nsumbu NP and Tondwa GMA	No specific management/land-use plans for Nsumbu NP and Tondwa GMA	place and implemented Tondwa GMA		
	Outcome 1.3 - Increased capacities and investments supporting land rehabilitation and decreased deforestation	Number of erosion control infrastructure built Number of sustainable charcoal and brick production units	None	At least 15 sites At least 30 units installed and operating sustainably	Project reports, on-site verification	Assumption: GRZ supports planning process and initiatives taken at all levels
	Component 2. Livelihood diversification enhances sustainable agro and forest ecosystem development and reduces pressure on natural resources					
	Outcome 2.1 Increased contribution of agro and forest ecosystem services to national economy and local livelihoods	Number of men and women running a successful alternative livelihood activity initiated by the project	N/A	At least 1000 families involved in alternative livelihood activities	Project reports and surveys and PIRs	Risks: uptake of alternative livelihood activities is low due to non-immediate returns and poor added value on markets Mitigation: the project will work on a limited number of value chains in order to ensure market value of the activities promoted. Baseline project will create marketing opportunities and improve necessary infrastructure Assumptions: Communities are interested to learn and engage in new activities.
	Component 3. Policy enforcement and coordination of INRM interventions, monitoring and outreach activities					

	Outcome 3.1 Enhanced policy and institutional coordination for better service delivery and enforcement of the landscape management plans and livelihood initiatives	Existence of sustainable Policy and institutional coordination bodies for Natural resources management	No specific, intersectoral body exists at district and regional level	At least 1 per district and 1 at regional level	Project reports, meeting minutes	Risk: low level of commitment of district and regional institutions/staff Mitigation: PCU will coordinate action and raise awareness on project activity coordination needs
	Outcome 3.2 Project implementation based on results based management and application of project lessons learned in future operations facilitated	Number of knowledge products developed Number of Project Implementation Review (PIR) rated as satisfactory	N/A N/A	At least 5 knowledge products developed 5	Knowledge products PIR reports	Assumptions: GRZ staff officially nominated and made available for project implementation and coordination

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Resp
Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

GEF Sec Comments	How the issue was addressed
1- Include science based evidences to justify the nature of interventions	Science based evidences have been included throu the document, in particular in section *A1-1 1) Glo environmental and/or adaptation problems, root and barriers that need to be addressed*
2- Include a stakeholder analysis before defining the project implementation arrangements	During project preparation, an Institutional Revie stakeholder Analysis has been conducted on the b literature and interviews/focus group discussions conducted in Lusaka and in the project area. At th local/community level, gender segregated data wa collected. The information collected is presented in detail in *4-baseline report 4*. The project implementation arrangements were initially built on the arrangem place for the baseline project, but were amended basis of the stakeholder analysis conducted and ex with main stakeholders during the 2 workshops co
3- Develop the coordination mechanisms with other initiatives and projects	Coordination mechanisms with other initiatives a projects are described in section *A.6. Institutional Arrangement and Coordination*
4- Include a comprehensive risk analysis	A comprehensive risk analysis is presented in sec *Risk*
5- Confirm the cofinancing. Identify other sources of parallel financing	Cofinancing from AfDB LTDP project is confirm (baseline project already going on). Other sources parallel financing have not been included as such project will cooperate closely with projects presen section *A.6. Institutional Arrangement and Coord*
6- Develop a Monitoring and Assessment Plan to measure the Global Environment Benefits	Section *A1-5) Global Environmental Benefits (GE* proposes a number of indicators and targets for th identified GEBs
7- Confirm the carbon value	Carbon value calculated with Ex-ACT tool. Anne provides details of calculations for direct and indi emissions reductions
8- Confirm the area under SLM and SFM	Target area for SFM is 12,000ha, confirmed durin stakeholder workshop with Forestry Department. Area under SLM is set at 20,000ha, which include of min. 12,000ha under SFM and min. 7500ha un conservation agriculture.
9- Provide mapped information	Done No detailed map of the region does exist, but the prepared a map locating main elements of the pro
STAP Comments	**How the issue was addressed**
1. STAP recommends detailing further how the GEF grant will complement the three components of the baseline project. As part of this information, STAP recommends defining how the project objective of the GEF grant will be linked to the wider AfDB loan, and how global environmental benefits will be achieved through the combination of both initiatives.	Section *A1.4) Incremental/additional cost reason expected contributions from the baseline, the GE LDCF, SCCF, and co-financing* does explain the contribution of the GEF project and how it compl the baseline project.
2. The proposal describes a number of environmental problems related to land degradation, biodiversity conservation, and climate change and the threats associated with each of these problems in the project justification section. STAP suggests strengthening	This has been addressed in section *A1-1) Global environmental and/or adaptation problems, root and barriers that need to be addressed*, through: i) references to the relevant literature;

these statements by citing references to scientific literature, and/or un-published and rigorous documentation based on local knowledge. Furthermore, STAP recommends development of a tighter linkage between the identified issues and the proposed interventions, and proposes that the project should focus on a narrower range of issues and interventions, to enhance the likelihood of sustained impact	ii) a detailed analysis on the threats to natural resources; iii) an analysis of the Impacts on natural resources; and iv) a detailed analysis of barriers to landscape approach to INRM, linking them closely to the threats Connectivity between these sections is important.
3. Poverty, limiting capacity to modify current slash and burn practices, and loss of productivity in Lake Tanganyika due to rising global temperatures, are identified as major challenges to this social-ecological system. It is not clear how the proposed interventions, focusing on encouragement of sustainable land management and sustainable forest management, will adequately address these challenges. To overcome this concern, STAP recommends that AfDB conducts a multi-stakeholder process to identify the key values, driving variables, and vulnerabilities in this social-ecological system, as part of the project development process. STAP suggests that AfDB consider applying the Resilience, Adaptation and Transformation Assessment Framework (link) to guide this multi-stakeholder assessment process. Please refer to the following link to learn more about the resilience framework: http://www.stapgef.org/the-resilience-adaptation-andtransformation-assessment-framework/ Application of the RATA procedure will assist the proponent to identify the multiple stressors influencing the sustainability of the lake ecosystem, and any linkages between the stressors. Furthermore, STAP suggests that it may be useful to draw a distinction between multiple stressors (chemicals, nutrients, temperature) and multiple sources of a single stressor (e.g. nutrients from multiple agricultural enterprises). This will contribute in addressing knowledge gaps on the multiple stressors affecting large ecosystems and how to manage their complex and interacting relationships. (See Servos, M. et al. "Science and management of transboundary lakes: Lessons learned from the global environment facility program". Application of the RATA framework will also assist in identifying the most effective interventions to improve basin management, the challenges to their implementation, and appropriate indicators for monitoring and assessment.	Project components and outcomes have been adjusted and outputs were reorganised, including new outputs, so that the mentioned challenges are more clearly addressed. This has been done in close consultation with project implementers, who directly contributed to the definition of the activities under each output. The RATA procedure seemed difficult to apply given the already advanced stage of the project, considering that the baseline project (AfDB loan) officially started on 12 December 2015.
4. Furthermore, STAP recommends conducting a stakeholder analysis so the project is rooted, and integrates local and scientific knowledge. STAP believes it is important for communities'/local stakeholders' knowledge to be used in the design and implementation of the proposal so they are in a better position to monitor and respond to the multiple challenges influencing their well-being and Lake Tanganyika's sustainability. Currently, the proposal outlines the intent to conduct stakeholder consultations, and STAP suggests specifying this further by describing: 1) how local stakeholders' understanding of land degradation, biodiversity loss, and climate change risks will be used to improve land management practices; and 2) how local knowledge will be used to complement and validate the monitoring and evaluation from scientific analyses, such as those being proposed in component. The project developers could refer to the following publications outlining the methodological steps necessary for stakeholder analysis: Reed, M. et al "Who's in and why? A typology of stakeholder analysis methods for natural resource management". Journal of Environmental Management 90 (2009) 1933â€“1949. Barrios, E. et al. "InPaC-S: Participatory	See GEF comment 2 on stakeholder analysis. References to stakeholders' knowledge and understanding of NR depletion has been added in section *A1-3) Proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project.* For example, local knowledge regarding fisheries shall be taken into account, as traditionally, local communities were using sustainable practice (such as a no fishing period of several months every year, as was expressed during community focus group discussions)

Knowledge Integration on Indicators of Soil Quality â€“ Methodological Guide". World Agroforestry Centre (2012)	
5. STAP suggests identifying the indicators for each of the proposed global environmental benefits. Currently, the proposal does not include indicators, or suggests possible indicators.	This is done in section *A1-5) Global Environmental Benefits (GEBs)*
6. STAP recommends strengthening the links between the three components. Generating data from ecosystem approaches (component 1 and 2) through suitable indicators will strengthen the monitoring and management of Lake Tanganyika. As M.R. Servos et al (2013) notes, baseline data in transboundary lake systems are often not available, or comparable. Therefore, it is important for the project developers to define how the monitoring of Lake Tanganyika in the northern province of Zambia will contribute to the monitoring and knowledge base of the comprehensive lake ecosystem. (See Servos, M.R. et al. "Science and management of transboundary lakes: lessons learned from the global environment facility program". Environmental Development 7 (2013) 17-31.)	This is mostly captured in section *A1-3) Proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project* The reorganization of the 3 components aims to clarify the structure and link the components between themselves, so that they respond to the 3 barriers to INRM identified
7. STAP recommends integrating an assessment of the trade-offs between the environmental and socioeconomic benefits and costs. Doing so will assist in developing actions that reflect the reality and capacities influencing local stakeholders' decisions on the management of multiple ecosystem services provided by the lake and its surrounding land resource	Section *A.7 Benefits* captures this.
GEF Council Comments	**How the issue was addressed**
Comments from Germany: 1/ It is recommended to clearly identify how the project will support GRZ in the implementation of relevant policies (i.e. Forestry policy 2015) and Acts (i.e. Water Resource Management Act 2011). The WRM Act prescribes the establishment of Catchment Management Organizations, Catchment management plans and Water Users Associations. For integrated water shed management, which is to be supported through this project, integration of plans of different of different sectors and harmonization and coordination of organizations will be essential. A close cooperation with organization responsible for water resources management is suggested. 2/ Furthermore, the Water Resources Development programme (World Bank loan) and the water sector reform programme (funded by German Cooperation), which are both implemented by the Ministry of Mines, Energy and Water Development, are supporting the implementation of the reforms in water resources management. Cooperation with these programmes is suggested.	1/ This aspect is captured under components 1 (Outcome 1.1- Improved Landscape planning in Zambia's Lake Tanganyika basin) and 3 (outcome 3.1- Enhanced policy and institutional coordination for better service delivery and enforcement of the landscape management plans and livelihood initiatives). Adjustments to §42 and §46 have been made in order to reinforce them. 2/ This is captured in section *A.6. Institutional Arrangement and Coordination* §90. Text modified accordingly to reflect this better.
Comments from the USA: 3/ The United States welcomes this project concept. That said, the PIF lacks specifics regarding outputs, impact, selection of participants, stakeholder engagement, and possible externalities resulting from interventions such as expanded agriculture, irrigation and livestock schemes. We were, however, pleased with the detailed comments we received from the AfDB in response to our technical concerns and comments and look forward to further details in the PPG phase.	3/ The Project document details further the outcomes and outputs of the project. A comprehensive stakeholder anlaysis has been conducted during the PPG process (Annex x). Based on this, the project document includes detailed information on stakhodelr engageenmt in sections A*.3. Stakeholders and A.6. Institutional Arrangement and Coordination*. Possible externalities of project interventions are captured in section *A.5 Risk* and *Annex 3: Barriers for Sustainable Integrated Management of Natural Resources and Adoption of a Landscape Approach Report*.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[77]

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: **$200,000**			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
Inception Workshop with Stakeholders	20,000	10,000	20,000
Consultancy preparation contract	150,000	140,000	150,000
Site visit and consultations	15,000	20,000	15,000
Validation with Stakeholders workshop	15,000	10,000	15,000
Total	200,000	180,000	200,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)

N/A

[77] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.