REQUEST FOR CEO ENDORSEMENT
PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:LDCF

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PART I: PROJECT INFORMATION

Project Title: Promoting climate-resilient, community-based regeneration of indigenous forests in Zambia's Central Province			
Country(ies):	Zambia	GEF Project ID:[1]	5435
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4712
Other Executing Partner(s):	Ministry of Lands, Natural Resources and Environmental Protection, Forestry Department	Submission Date: Resubmission Date:	16 Apr 2015 14 May 2015
GEF Focal Area (s):	Climate Change	Project Duration(Months)	60
Name of Parent Program (if applicable): ➢ For SFM/REDD+ ☐ ➢ For SGP ☐ ➢ For PPP ☐		Project Agency Fee ($):	369,075

A. FOCAL AREA STRATEGY FRAMEWORK[2]

Focal Area Objectives	Expected FA Outcomes	Trust Fund	Grant Amount ($)	Cofinancing ($)
CCA-1 (select)	1.1: Vulnerability of physical assets and natural systems reduced.	LDCF	2,100,000	15,691,941
CCA-1 (select)	1.3: Climate resilient technologies and practices adopted and scaled-up	LDCF	315,000	2,353,791
CCA-2 (select)	2.4: Institutional and technical capacities and human skills strengthened to identify, prioritise, implement and evaluate adaptation strategies and measures.	LDCF	1,470,000	10,984,358
Total project costs			3,885,000	29,030,090

B. PROJECT FRAMEWORK

Project Objective: To increase the rate of forest regeneration and promote climate-resilient adaptation practices among forest-dependent communities in Zambia's Central Province

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount ($)	Confirmed Cofinancing ($)
1. Piloting of community-based, climate-adaptive agro-forestry and assisted natural regeneration techniques.	Inv	Improved capacity of district forestry officers and Village Action Group (VAG) members for planning and implementing	1.1 Participatory resource mapping and zoning (identification of suitable areas for agro-forestry and assisted natural regeneration measures) taking alternative climate change scenarios into account completed in all	LDCF	2,200,000	20,683,939

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.

		Assisted Natural Regeneration (ANR) and agro-forestry interventions	six districts of Central Province. 1.2 Between 30-40 VAGs formally recognised and constituted in Serenje district by Year 2, with clear resource rights and delineation of legally-recognised VAG boundaries and use zones. 1.3 All VAG boundaries and use zones registered under the Zambia Integrated Land Management and Information System. 1.4 Training delivered for at least 20 district forestry officers and 2,000 VAG community members on site-specific appropriate climate-resilient agro-forestry and natural regeneration practices. 1.5 Wood fuel collection zones established in all VAGs and coppicing practices promoted. 1.6 Climate-resilient agro-forestry and ANR practices are piloted over 15,000 hectares under management in Serenje district.			
2. Integrated climate-resilient fire management.	TA	Robust fire monitoring and management protection plans and measures in place in all districts in Central Province to maintain desired regeneration targets and reduce fire frequency by 25-30% annually across the province, within a four-	2.1 Geospatial fire occurrence dataset developed for Central Province based on satellite data and GIS mapping to ascertain burn severity classifications and climate change vulnerability of miombo woodlands. 2.2 Fire management plans developed and operational (based on independent verification) for Serenje district based on fire occurrence dataset and local inputs. 2.3 District forestry staff, relevant VAG members	LDCF	1,200,000	2,482,073

		year burning cycle.	and local authorities trained on appropriate climate-resilient fire protection practices (boundary and firebreak management, early burning, etc.). 2.4 Awareness-raising campaigns undertaken across all districts about the benefits of adopting fire management measures to strengthen the adaptive capacity of miombo forests to climate change.			
3. Increased knowledge about, and uptake of, appropriate supply-side biomass energy production technologies	Inv	3. Energy efficient charcoal production and wood-saving technologies have successfully replaced inefficient systems in targeted areas of Central Province, helping offset pressure on the	3.1 Deployment of technologies and development of sustainable charcoal schemes in 20 VAGs with (i) charcoal producer groups formed and trained to operate kilns; (ii) charcoal retort kiln pilots introduced (120 improved kilns to replace earth kilns); (iii) monitoring, tracking and licensing system established for all improved kilns piloted. LDCF 300,000 4,412,574 3.2 50 charcoal or sawdust briquetting machines or presses piloted across 20 VAGs.	LDCF	300,000	4,481,694
Subtotal					3,700,000	27,647,706
Project management Cost (PMC)[3]				LDCF	185,000	1,382,384
Total project costs					3,885,000	29,030,090

C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Please include letters confirming co-financing for the project with this form

[3] PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

Sources of Co-financing	Name of Co-financier (source)	Type of Co-financing	Co-financing Amount ($)
National government	Ministry of Lands, Natural Resources and Environment Protection (MLNREP)	In-kind	11,420,000
National government	Centre for Environmental Research Education and Development (CERED)	In-kind	147,661
Non-government organisation	Community Markets for Conservation	In-kind	11,000,000
Non-government organisation	Environment Africa	In-kind	386,372
Non-government organisation	Pioneer	In-kind	3,190,000
Non-government organisation	Zambia Climate Change Network	In-kind	980,000
Non-government organisation	Zambia Institute of Environmental Management	In-kind	746,057
GEF agency	United Nations Development Programme (TRAC)	Grant	100,000
Non-government organisation	Kasanka Trust	In-kind	1,060,000
Total Co-financing			29,030,090

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in $)		
				Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
UNDP	LDCF	Climate Change	Zambia	3,885,000	369,075	4,254,075
Total Grant Resources				**3,885,000**	**369,075**	**4,254,075**

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

[2] Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount ($)	Cofinancing ($)	Project Total ($)
International Consultants	172,000	2,717,976	2,889,976
National/Local Consultants	259,000	1,518,254	1,777,254

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

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

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF[4]

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

As a Least Developed Country (LDC), Zambia has limited resources to effectively lower the risks that climate change poses to hard-won development gains. However, the Government is making efforts to address climate change. Zambia is committed to ensuring that the poorest and most vulnerable communities are supported by programmes that enhance their long-term adaptive capacity. Zambia ratified the United Nations Framework Convention on Climate Change (UNFCCC)[5], thereby committing to the adoption of policies and implementation of measures to adapt to climate change. Consequently, a number of activities have been undertaken (detailed below), which the LDCF project will build upon and complement.

Zambia submitted its **Initial (INC) and Second National Communication (SNC)** to the UNFCCC in 2002 and 2004, respectively. These reports guide the development of Zambia's policy, legal and institutional framework for adaptation to climate change. In addition, the SNC details Zambia's greenhouse gas inventory and establishes a long-term institutional framework that promotes a coordinated response to climate change. The proposed LDCF project is aligned with the following adaptation measures recommended in the SNC:

- Promotion of natural regeneration of indigenous forests. The LDCF project will support this measure through the regeneration of miombo woodlands.
- Improvement of fire management systems. The LDCF project will develop a geospatial fire occurrence data-set that will inform fire monitoring and management. Furthermore, training and awareness campaigns will increase the capacity to develop and implement fire management plans.
- Promotion of soil conservation methods. The LDCF project will support soil conservation through the implementation of natural regeneration and agro-forestry techniques as well as improved fire management.

In 2007, a **National Capacity Self-Assessment (NCSA)** was completed to assist in the implementation of the Rio Conventions. The assessment identifies the national capacity and development gaps hindering the effective implementation of Multilateral Environmental Agreements, such as the UNFCCC, the United Nations Convention on Biodiversity (UNCBD) and the United Nations Convention to Combat Desertification (UNCCD). The NCSA also proposes a strategy and an action plan to address such gaps in the short- and long-term. The LDCF project is aligned with Goal 6 of the NCSA – to strengthen the institutional framework to promote strategies for conservation of biodiversity, combating desertification and drought and to minimize climate change.

Zambia has undertaken a **Technology Needs Assessment** (TNA) for climate change adaptation. Priority sectors and technologies were identified through stakeholder consultations. In addition, barriers to the

[4] For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

[5] On 28 May 1993.

diffusion of selected technologies were identified and measures selected to overcome such barriers. The LDCF project is aligned with the selected technologies for the Agriculture and Food Security sector, which include:

- Conservation farming with agro-forestry;
- Integrated crop-small livestock-fish-poultry-vegetable production system; and
- Promotion of crop diversification and new crop varieties

The design of the LDCF project is based on information received from a range of stakeholder consultations conducted in Zambia (see Stakeholder Baseline Analysis in the Project Document). The participatory approach affirms that the project reflects the needs of national stakeholders and there is country ownership of the project. In addition, the proposed LDCF project is linked to priorities reflected in the **UN Development Assistance Framework (UNDAF, 2011-2015)**. In particular, this project relates to UNDAF Outcome 4, which will develop institutional capacities to effectively sustain, manage and protect livelihoods from the risks of climate change, disasters and environmental degradation. The LDCF project also relates to Outcome 2 – achieving more sustained levels of development, employment and food security.

The LDCF project is aligned with the **UNDP Zambia Country Programme Action Plan (CPAP, 2011-2015)**. The LDCF project will address the following Country Programme Outcomes:

Outcome 2.1: Government and partners enable vulnerable populations to be food-secure. The LDCF project will support small-scale farmers to implement agro-forestry technologies.
Outcome 2.2: Government and partners provide targeted groups with opportunities for gainful and decent employment. The project will provide targeted vulnerable groups with training and support the diversification of income generating opportunities to strengthen livelihoods.
Outcome 4.2: Government promotes adaptation and provides mitigation measures to protect livelihoods from climate change. The LDCF project will support the adoption of sustainable land management and agricultural practices, which are climate-resilient.
Outcome 4.3: Government implements policies and legal frameworks for sustainable community based natural resources management. The LDCF project will support the implementation of community natural resource management through the establishment of village action groups (VAGs) and the recognition of resource and use rights

Zambia has generally made good progress towards achieving its **Millennium Development Goal (MDG)** targets. However, there remain some targets that have yet to be attained. The LDCF project will contribute towards four of these, as detailed below:

Target 1A: Halve, between 1990 and 2015, the proportion of people living in extreme poverty. The project will support the diversification of livelihoods and promote alternative income-generating opportunities.
Target 1B: Achieve full and productive employment and decent work for all, including women and young people. The project will strengthen the role of women through knowledge transfer on adaptation interventions and training. In addition, the project will collaborate with and integrate women's groups into project implementation.
Target 1C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger. The project will increase food security and nutrition of vulnerable communities.
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. The project will increase capacity to integrate risk reduction strategies for climate change into development policies and programmes.

The **National Adaptation Programme of Action** (NAPA) was prepared by the Ministry of Tourism, Environment and Natural Resources (MTENR). It was submitted in October 2007. The NAPA identifies and highlights urgent adaptation interventions in Zambia and includes a list of ten priority projects. These projects target vulnerable groups such as small-scale farmers, the poor, women and children. However, many of these projects have not been fully implemented. The proposed LDCF project will implement priority interventions identified in the NAPA and is consistent with the ninth Conference of Parties (COP-9)[6]. In particular, the project responds to NAPA priorities 2, 4, 5 and 6 as described below:

- Promotion of alternative sources of livelihoods to reduce vulnerability to climate change/variability to communities living around Game Management Areas (GMAs): the project will support the diversification of livelihoods through the implementation of agro-forestry and other climate-resilient practices.
- Management of critical habitats: the project will support the management of indigenous miombo woodlands through climate-resilient restoration methods.
- Promote natural regeneration of indigenous forests: the project will support the assisted natural regeneration of miombo woodlands in Central Province.
- Adaptation of land-use practices (crops, fish and livestock) in light of climate change: the project will support the implementation of agro-forestry practices in Central Province to increase the adaptive capacity of the vulnerable communities.

Zambia's **National Long-Term Vision** 2030 (Vision 2030) is a planning tool setting out goals and targets to be achieved in social and economic life. The LDCF project will contribute towards: i) economic growth and wealth creation; ii) improved food security and climate-resilient livelihoods; iii) the creation of an enabling environment for sustainable socio-economic development and the promotion of integrated environmental management; and iv) the sustainable use of natural resources.

The LDCF project is aligned with **Zambia's Sixth National Development Plan** (SNDP), which is the implementation strategy for the National Vision 2030. The SNDP outlines national development policies and priority development areas towards achieving sustained economic growth and poverty reduction. Moreover, this strategy focuses on the development of climate change adaptation programmes. Within Central Province, the SNDP is focused on poverty reduction through economic diversification and increased investment in agriculture. The LDCF project will support the SNDP through the promotion of agro-forestry practices and diversification of livelihoods. In, addition the project will support two of the SNDP objectives for the Central Province as follows:

- Reforestation of depleted indigenous forests; and
- Environmentally-friendly technologies for income generation.

The LDCF project is aligned with the recommendations of the (draft) **National Climate Change Response Strategy** (NCCRS). This strategy has been developed to support and facilitate a coordinated response to climate change in Zambia. The objective of the NCCRS is to climate-proof vulnerable economic sectors, such as the forestry sector. The proposed LDCF project is aligned with the objectives for the forestry sector and will support the development of sustainable land use systems. Consequently, enhancing agricultural production and improving food security.

The **Zambian Forestry Action Programme** (ZFAP 2000-2020) was adopted under the **National Environmental Action Plan** (NEAP 1994). The objective of this programme is to address problems of deforestation and enhance the contribution of the forestry sector to national social and economic

[6] And satisfies criteria outlined in UNFCCC Decision 7/CP.7 and GEF/C.28/18.

development. Importantly, this programme provided the framework for CBNRM in the forestry sector. In particular, the National Forest Policy (1998) – which aims to promote socio-economic development, poverty alleviation and food security – was developed under the framework of ZFAP. This policy recognises the importance of integrating traditional leaders and local communities in the sustainable management and use of forest resources.

Other policies of relevance include the **National Environmental Policy** (NEP, 2004), the **National Biodiversity Strategy Action Plan** (NBSAP) and the **National Forestry Policy** (NFP, 2014). The NEP identifies Government ministries involved in environmental affairs, a number of which have policies that include environmental matters. Furthermore, the NEP highlights current shortfalls in these policies, including: i) ineffectual mechanisms for community-based natural resources management; ii) weak informal inter-sectoral links; iii) limited up-to-date baseline data; and iv) inadequate national guidelines for effective integration of international environmental conventions.

The **Zambian National Biodiversity Strategy and Action Plan (NBSAP)** aims to promote the conservation, management and sustainable use of Zambia's biological resources and the equitable sharing of benefits from these resources. The LDCF project will contribute to the following goals of the NBSAP:

- Goal 3: Improve the legal and institutional framework and human resource to implement the strategies for conservation of biodiversity, sustainable use and equitable sharing of benefits from biodiversity. The LDCF project is aligned with this goal and will support co-operation among stakeholders and institutions. In addition, it will improve research and knowledge on the sustainable use of biological resources.
- Goal 4: Sustainable use and management of biological resources. The LDCF project will support this goal through: i) implementing community-based natural resource management (CBNRM) ii) building on the land information management system; and iii) establishing monitoring and evaluation systems.

The NFP provides a framework for sustainable forest management that will: i) enhance economic development; ii) contribute to mitigation and adaption to climate change; and iii) improve the livelihoods of communities through participatory forest management. The LDCF project will contribute towards the reduction of poverty through its forestry activities.

The LDCF project is aligned with the **National Decentralisation Policy** (NDP, 2010) and is informed by several core objectives of this policy. These include: i) empowering local communities by decentralising decision-making functions and resources; ii) implementing a system of "bottom up" planning and budgeting from the district level; and iii) promoting accountability and transparency in the management and use of resources.

Zambia's **National Agricultural Policy** (NAP, 2004) supports the development of a sustainable and competitive agricultural sector. The LDCF project is in alignment with the objectives of the NAP listed below:

- Objective 9: To improve food and nutrition security. The LDCF project will support this objective through agroforestry and the diversification of agricultural production and utilization.
- Objective 10: To promote the sustainable management and use of natural resources. The LDCF project will support the implementation of community-based natural resource management. In addition, climate-resilient land management and energy practices will be implemented.
- Objective 11: To mainstream environment and climate change in the agriculture sector. The LDCF project will promote and strengthen agricultural practices that are climate-resilient. In addition, awareness raising activities will be undertaken to promote climate-resilient agroforestry and farming practices.

Zambia's **Sustainable Energy for All** (SE4ALL) goal is to provide reliable, affordable and environmentally sound energy for sustained social and economic development. The SE4ALL Rapid Assessment and Gap Analysis identifies thermal energy for households – including fuel wood and charcoal – as priority areas for intervention.

Zambia is a participant of the **UN Reducing Emissions from Deforestation and Forest Degradation** (REDD) Programme. The National Strategy to Reduce Emissions from Deforestation and Forest Degradation (NSREDD) identifies the proximate drivers of deforestation and forest degradation in Zambia. The LDCF project is aligned with the following strategic objectives of the NSREDD:

- Objective 1: By 2030, threatened and unsustainably managed national and local forests are effectively managed and protected to reduce emissions from deforestation and forest degradation and contribute with ecosystem services across selected landscapes;
- Objective 2: By 2030, selected high value forests in open areas are effectively managed and monitored; and
- Objective 4: By 2030, good agricultural practices that mitigate carbon emissions adopted.

Zambia has a **Gender Policy**, which was adopted in 2000. This policy recognizes the disparity that exists between men and women, where women remain a disadvantaged and more vulnerable group. The policy advocates gender concerns, which are regarded as a sectoral as well as a cross-cutting issue. Women will be incorporated into the decision-making process and implementation of the LDCF project. In addition, the LDCF project will include gender-disaggregated indicators.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.

The LDCF project is consistent with LDCF objectives CCA-1, "Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change", and CCA-2, "Strengthen institutional and technical capacities for effective climate change adaptation". Specific contributions to these objectives are described below:

Component 1 will reduce sensitivities to climate change through the implementation of agro-forestry practices and assisted natural regeneration of forests. This is aligned with LDCF Objective CCA-1, Outcome 1.1 ("Vulnerability of physical assets and natural systems reduced"). In addition, Component 1 will strengthen adaptive capacity through the establishment of VAGs. These will enable community ownership of the project interventions. Furthermore, these VAGs will be responsible for overseeing the implementation of community-based natural resource management. This is aligned with LDCF Objective CCA-2, Outcome 2.4 ("Institutional and technical capacities and human skills strengthened to identify, prioritise, implement, monitor and evaluate adaptation strategies and measures").

Component 2 will strengthen adaptive capacity of communities through implementing training and awareness campaigns focused on fire management and monitoring. This is aligned with LDCF Objective CCA-2, Outcome 2.4 ("Strengthened adaptive capacity to reduce risks to climate-induced economic losses").

Component 3 will support the development of energy efficient charcoal production and wood saving technologies. This is aligned with LDCF Objective CCA-1, Outcome 1.3 ("Climate-resilient technologies and practices adopted and scaled-up"). Component 3 will also support various learning and training activities, which will strengthen the capabilities of foresters and local communities. This is aligned with LDCF Objective CCA-1, Outcome 2.4 ("Institutional and technical capacities and human skills strengthened to identify, prioritise, implement, monitor and evaluate adaptation strategies and measures").

In line with the LDCF eligibility criteria and priorities, the LDCF project will use LDCF resources to finance the additional costs needed for increasing the climate change resilience of the baseline situation concerning forestry regeneration in Zambia. It will build on Zambia's existing initiatives to safeguard lives and livelihoods from the impacts of an increase in frequency and intensity of climate-related extreme events, in particular floods, droughts and fires. In line with LDCF guidelines, the UNDP-implemented, LDCF-financed project has been developed and will be implemented using the following approaches: i) sustainability; ii) replicability; iii) participatory; iv) multi-disciplinary; v) complementary; and v) gender-sensitive:

Sustainability: The project has been designed to strengthen coordination of climate change adaptation between key ministries. In addition, the results of the LDCF-financed interventions will strengthen Zambia's institutional and technical capacities, which, in turn, will enable the Government to secure additional climate finance from a variety of sources. These interventions will strengthen the capacity of national institutions and communities to sustain climate change adaptation-related interventions in the medium- to long-term.

Replicability: The project has been designed to ensure that: i) lessons are replicable; ii) training and capacity building are sufficient to allow the transfer of expertise to other initiatives; and iii) replication mechanisms are in place.

Participatory: The project design has been informed by extensive stakeholder consultation. Relevant stakeholders include representatives of various ministries as well as private sector organisations, NGOs and community-based organisations. The stakeholders' involvement in the project is clearly defined and these stakeholders will be actively engaged during project implementation.

Multi-disciplinary approach: The project will integrate climate change adaptation into sectoral planning in an economy-wide approach. The proposed LDCF project will involve many planning activities that will build the climate resilience of vulnerable sectors and communities. Furthermore, institutional capacity will be built in a targeted manner, particularly for forestry and fire monitoring, as well as control and enforcement of legislative frameworks. This will facilitate a harmonised approach to climate change adaptation across all sectors and by stakeholders.

Complementary: The project will build on various ongoing initiatives and programmes in Zambia. These initiatives include ongoing revisions of policy and plans, and ongoing climate change adaptation projects and initiatives by donor agencies and development partners. The project will strengthen coordination of climate change activities that will facilitate collaborative partnerships between all stakeholders involved in climate change adaptation.

Gender-sensitive: The project will target vulnerable groups, including women. The role of women will be strengthened through knowledge transfer on resilience-building activities and adaptation responses. Women will be included as both actors and managers, as well as beneficiaries. Furthermore, the role of women will be strengthened through the collaboration and integration of women's groups.

The LDCF project has been prepared in line with guidance provided by GEF and the LDCF Trust Fund. The project follows guidance from the "Strategy on Adaptation to Climate Change for the Least Developed Countries Funds and Special Climate Change Fund" and the guidance paper "Accessing resources under the Least Developed Countries Fund". The project design is also aligned with the expected interventions articulated in the LDCF programming paper and decision 5/CP.9. As the effects of climate change fall disproportionately upon the poor, the links between climate change adaptation and poverty reduction are explicitly addressed within the project design (GEF/C.28/18,1(b),29).

A.3 The GEF Agency's comparative advantage:

The UNDP-implemented, LDCF-financed project is aligned with UNDP's comparative advantage in capacity building and providing technical support, as well as providing expertise in project design and implementation. Specifically, the LDCF project will build upon UNDP's comparative advantage stemming from experience in working with Government and communities in Zambia as well as globally on: i) establishing and strengthening institutional, policy and legislative mechanisms; ii) building capacity; iii) undertaking risk assessments; iv) mainstreaming climate change adaptation, disaster risk reduction and early warning systems into development planning; and v) harnessing best practices and community-based approaches across different thematic areas for climate change adaptation and disaster risk reduction.

UNDP is particularly well positioned to provide support for the design and implementation of demonstration activities at the community level. This is largely owing to the UNDP Country Office's: i) on-the-ground presence, established networks and working relationships in the country; and ii) extensive experience in implementing projects in constrained institutional and organisational environments at the local level, while still maintaining quality and responsiveness to local needs. UNDP has supported Zambia to reduce poverty and increase food security through sustainable livelihoods from appropriate land management and biodiversity conservation[7].

The project will benefit from UNDP's considerable experience in implementing a wide range of climate change adaptation projects – including those focusing on ecosystems and the forestry sector – in LDCs. For example, UNDP has already assisted the GoZ to design and implement several adaptation programmes, including the "Adaptation to the effects of drought and climate change in Agro-ecological Regions I and II" project.

The UNDP Country Office is also supported by Regional Technical Advisors at the UNDP Regional Service Centre in Addis Ababa, as well as by policy, adaptation, economics and climate modelling experts in New York, Cape Town and Bangkok. A network of global Senior Technical Advisors provide additional technical oversight and leadership, helping to ensure that programmes on the ground achieve maximum policy impact. There are also other LDCF, SCCF and Adaptation Fund-financed projects within the region with similar objectives currently supported by UNDP. Consequently, there is substantial in-house technical expertise that can support the GoZ with project implementation. Furthermore, UNDP's use of the National Implementation Modality (NIM) serves to build capacity for project management and reporting in GoZ. This will prove beneficial for supporting ongoing partnerships between UNDP and GoZ for project implementation.

UNDP is also uniquely positioned to exercise Results-Based Management and leverage its extensive knowledge of the similarities and differences between countries at different stages of development, and to translate that into evidence-based recommendations for effective, adaptable development solutions. UNDP's emphasis on application of the Human Rights Based Approach and its emphasis on gender equality in development programming will ground the implementation of the LDCF project in these important development principles.

[7] Government of the Republic of Zambia and the United Nations Development Programme. (2011) *Zambia Country Action Plan 2011–2015*.

A.4. The baseline project and the problem that it seeks to address:

Baseline scenario or any associated baseline project

Some of the baseline projects that were included at PIF stage have terminated, or are no longer relevant to the baseline scenario. Consequently, the Project Document includes a number of projects that were not included in the PIF. The baseline projects that are included in the project design are described below.

- The **Ministry of Lands, Natural Resources and Environmental Protection** (MLNREP), through the Forestry Department's National Tree Planting Programme (NTPP), will provide co-financing to the LDCF project. The following activities are supported under the NTPP: i) procurement of nursery equipment and materials; ii) nursery establishment; iii) tree planting; iv) weeding; and v) fire management. The Forestry Department's contribution will focus on indigenous forest conservation. In addition, climate-adaptive agro-forestry, assisted natural regeneration techniques and fire management will be promoted. The GoZ's support of these activities will be through the NTPP. This co-financing will be in the form of: i) annual budgetary allocations for the planned activities; and ii) in-kind contributions to support the activities. The total contribution for the period 2015–2019 is ~US$11.42 million.

- The **Centre for Environmental Research Education and Development** (CERED) – main areas of ongoing work include climate change mainstreaming, forestry, freshwater and wetlands, species and protected areas, community-based natural resources management, capacity building and curriculum design and development, as well as policy analysis and development. In the western part of Central Province, CERED has been working with local communities and traditional authorities in the Mopane sub-ecoregion within the miombo woodlands to conduct participatory forest resource assessment, promote agro-forestry and alternative income generation activities to address forest degradation arising from unsustainable charcoal production and enhance climate change adaption and resilience. CERED's co-financing contribution in support of Component 1 of the LDCF project focuses on piloting of community-based, climate-adaptive agro-forestry and assisted natural regeneration techniques within the Mopane sub-ecoregion. The co-financing amount of ~US$147,661 is in-kind and includes: i) capacity-building activities implemented by the project; ii) staff time; and iii) technology transfer.

- **Community Markets for Conservation** (COMACO) provides services to small-scale farmers. The project commenced in 2014 and is scheduled to end in 2019. These support services address issues of resilience by recommending crops and production technologies that promote soil improvement as well as viable income opportunities, reforestation and forest regeneration activities. Preferred technologies are those that can be started after a brief training with low, if any, input costs, while benefiting from ongoing training updates to advance continued understanding of soils and diversification of income opportunities both on and off the farm. In addition, they provide training on improved ways to promote food security, diversify income and mitigate against the effects of extreme events, pest problems and various social and health challenges arising from climate change. COMACO's operations extend throughout much of Eastern and Muchinga Provinces, as well as parts of Central Province. Through COMACO's activities, over 650,000 hectares have been set aside as community conservation areas (CCAs). COMACO will provide US$11 million in-kind co-financing towards the implementation of the LDCF project.

- **Environment Africa** has partnered with WFD, a German NGO, in working towards the enhancement of food security, afforestation and reforestation for subsistence. A project is currently being implemented in the Chisamba and Chibomobo districts – among the largest districts in Central Province – and is scheduled for completion in December 2017. The interventions have focused on; i) climate-adaptive agroforestry for rural farming communities; ii) support to farmers in practising

conservation farming; iii) capacity building for the District Agricultural Coordinator's (DACO's) office and Forestry Department in climate-resilient agro-forestry and natural regeneration practices; iv) increased knowledge about and uptake of appropriate supply-side biomass energy production technologies; v) reforestation projects; vi) climate change awareness programmes for schools and traditional leaders; and vii) building capacity amongst rural farmers in community participation in natural resources management. Environment Africa will provide in-kind co-financing in the amount of ~US$386,372.

- **Pioneer** works with a diverse array of civil society organisations, community-based organisations and communities within Central Province to provide energy efficient technologies. The objective of Pioneer is to reduce deforestation by developing and promoting alternatives to the current practice of making charcoal by cutting trees. Pioneer has successfully established that organic matter and animal droppings can be used to produce charcoal briquettes. Among others, the following materials can be used: i) maize combs, ii) groundnuts shells; iii) charcoal fines; iv) dry cattle manure; v) dry tree twigs, leaves and grass; and vi) brown card boxes. Pioneer will provide in-kind financing in support of increasing the knowledge and uptake of appropriate supply-side biomass energy production technologies. The in-kind contribution is in the amount of US$3.19 million.

- The **Zambia Climate Change Network** (ZCCN) works with a diverse range of CSOs, CBOs and communities across Zambia, including in Central Province. The purpose of ZCCN's work is to deliver interventions that empower communities to actualise participatory climate change adaptation and mitigation actions. Within the Central Province, ZCCN – in close collaboration with member organisations – is catalysing activities that have fostered; i) awareness; ii) resilient agriculture production; and iii) forest regeneration activities by using approaches that integrate scientific and indigenous knowledge. ZCCN's co-financing contribution is in support of Component 1 of the LDCF project, which focuses on piloting community-based, climate-adaptive, agro-forestry and assisted natural regeneration techniques. The co-financing is in-kind in the amount of US$980,000.

- **Zambia Institute of Environmental Management** (ZIEM) works with a diverse array of CSOs, CBOs and communities within Central Province. It is currently implementing the following programmes in natural resources management: i) sustainable management of forestry in Central Province; ii) REDD+ tracking, social and environmental safeguards; and iii) REDD+ finance tracking mechanisms. ZIEM is also engaging various stakeholders on energy efficiency and financing of energy through pro-poor public-private partnerships. The project commenced in 2014 and is scheduled for completion in 2020. The area of focus is Central Province. The in-kind co-financing is in the amount of US$746,057 and is in support of the following project activities: i) piloting of community-based, climate-adaptive agro-forestry and assisted natural regeneration techniques; ii) enhanced capacity of foresters and communities in Central Province to implement appropriate climate-resilient agroforestry and natural regeneration practices in designated zones; iii) increased knowledge about and uptake of appropriate supply-side biomass energy production technologies.

- **UNDP** is committed to providing co-financing for the LDCF project. Over a four year period, Target Resource Assignment from the Core (TRAC) funds in the amount of US$100,000 will be made available. This cash co-financing is in support of Project Management Costs (PMC), focusing on providing strong management support to the project.

- **Kasanka Trust** (KT) is an implementing organisation that has been active in the Kasanka National Park and surrounding areas for over 25 years, with a focus on conservation and associated community development. As a result, KT has a long tradition of collaboration with local communities and other local stakeholders, including the local Community Resource Boards, ZAWA and the FD. KT follows a dual approach regarding local communities: i) seeking advice and support for conservation activities; and ii) supporting capacity building and income-generating activities for the same communities.

Activities carried out and envisaged to continue under climate change and related initiatives include, *inter alia*: i) mitigating land degradation; ii) reduced deforestation; iii) erosion and sedimentation; iv) sustainable forest management; v) conservation farming/agriculture vi) sustainable wood fuel and charcoal production; and vii) implementing management plans for the National Park and Kafinda Game Management Areas, as well as nearby gazetted forests. The co-financing contribution from KT is in support of the activities under Components 1 and 3 to reduce deforestation and promote sustainable community-based joint forest management of indigenous forests in the wider Kasanka area within Zambia's Central Province. The in-kind co-financing is in the amount of US$1,060,000.

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

The PIF provides a limited description of the general effects of climate change experienced in Zambia and the climate-related problems that the LDCF project will target. The Project Document provides a thorough description of miombo woodlands and the related threats to these ecosystems. In addition, the Project Document includes a full description of the: i) climate change scenario in Zambia; ii) effects of climate change on local communities and sectors; iii) root causes of vulnerability among local communities in Zambia that rely strongly on miombo woodlands for their livelihoods; and iv) barriers to planning and implementing adaptation to climate change.

The predicted effects of climate change will result in increased degradation of natural resources. Agricultural productivity is predicted to decline by 0.6% by the year 2050[8] owing to climate-induced extreme events such as prolonged droughts, localised floods and a shortened growing season[9]. This is expected to result in increased rates of deforestation and forest degradation as local communities seek to compensate for reduced income from agriculture. As a consequence, the Forestry Department's and other stakeholders' efforts to ensure sustainable management of forest resources will be undermined by extraction of wood and NTFPs to support community livelihoods. Under business-as-usual conditions, local communities are likely to suffer from increased levels of poverty and food insecurity as current agricultural and livelihood practices become increasingly unviable owing to the effects of climate change. With over 70% of the population living below the poverty line, the NAPA recognises that vulnerable communities do not have sufficient capacity to adapt to climate change[10].

The project will use LDCF resources to support the implementation of community-based and climate-resilient approaches to natural resource management. Outcome 1 will result in enhanced adaptive capacity of district forest officers and local communities through: i) improved planning and decision-making concerning natural resource use; ii) strengthening of the management frameworks at the local level; iii) training on climate-resilient techniques such as agro-forestry and assisted natural regeneration of miombo woodlands; and iv) the implementation of these climate-resilient approaches.

The LDCF project will build on the NTPP by supporting enrichment planting of miombo woodlands using climate-resilient species – such as *Faidherbia albida* and *Moringa oleifera* – that provide a range of environmental and socio-economic benefits. Furthermore, the project will support improved management of forest areas through resource- and land-use planning that is informed by climate change projections. These interventions will result in a greater provision of ecosystem goods and services to local communities that will remain sustainable in spite of the predicted effects of climate change.

The project will also build on the work of COMACO related to support for small-scale farmers. Climate-resilient agricultural practices – in particular, agro-forestry – will be promoted to ensure sustainability of

[8] Dyszynski, J. (2010), *UNEP AdaptCost Briefing Note: Economics of Climate Impacts and Adaptation in Africa's Agricultural Sector*. UNEP/Stockholm Environment Institute, Oxford.
[9] USAID (2012), *Climate Change Impact on Agricultural Production and Adaptation Strategies: Farmers' Perception and Experiences.*
[10] Ministry of Tourism, Environment and Natural Resources (2007), *Zambia National Adaptation Programme of Action.*

agricultural production under future climate conditions. These practices are low-input and low-technology – in line with COMACO's current approaches – for a cost-effective approach that is easily implemented by local communities. Furthermore, the interventions are complementary to COMACO's work as the tree species to be included in the agro-forestry – e.g. *Sesbania sesban, Cajanus cajan* and *Gliricidia sepium* – will support improvements to soil conditions as well as providing alternative livelihood opportunities through the generation of NTFPs.

ZIEM's work on sustainable forest management through the implementation of REDD+ activities will be complemented through the improvement of planning and decision-making on CBNRM as well as the implementation of ANR practices. Project interventions will thus enhance the sustainability of wood and NTFP supplies that are expected to experience increased pressure under future climate conditions. This will enhance the climate-resilience of ZIEM's activities by reducing rates of deforestation and forest degradation that would otherwise result from increased extraction of forest resources to offset the effects of climate change.

Local communities will be supported in developing and strengthening frameworks for participatory decision-making and planning for resource- and land-use management. This will be based on comprehensive participatory resource mapping exercises to identify a range of climate-resilient practices for strengthening of community livelihoods under future climate conditions. The formation of VAGs will enhance the institutional capacity for CBNRM through establishment and enforcement of resource- and land-use plans – based on the priorities of community members – through a fully participatory approach. District forest officers and VAG members will be trained on climate-resilient approaches to management of forest resources – through, *inter alia,* ANR – and enhancement of agricultural productivity through agro-forestry. Finally, communities will be supported in the implementation of the identified interventions through a learning-by-doing approach.

By enhancing the capacities of district forest officers and community members to implement on-the-ground interventions for climate-resilient CBNRM, pressures on natural resources will be reduced. Consequently, communities will benefit from sustainable production of ecosystem goods and services under future climate conditions. This will contribute towards increased food and livelihood security in spite of the predicted negative effects of climate change.

A.5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The proposed alternative scenario in the Project Document is consistent with that described in the PIF. In the Project Document, this scenario is described in detail (see Section 2.4). A brief description of the components, expected outcomes, outputs and indicative activities is provided below.

The **project objective** is to promote climate-resilient, community-based regeneration of indigenous forests in Zambia's Central Province. This will enhance the adaptive capacity of local communities by securing ecosystem goods and services that underpin rural livelihoods. Community-based natural resource management (CBNRM) will be supported through the establishment of Village Action Groups (VAGs) that will manage forests and be responsible for equitable benefit distribution according to community priorities. In this way, local communities will be empowered to plan and implement effective measures for building climate resilience.

Component 1: Piloting of community-based, climate adaptive agro-forestry and assisted natural regeneration techniques.

Outcome 1: Enhanced capacity of foresters and communities in Central Province to implement appropriate climate-resilient agro-forestry and natural regeneration practices in designated zones.

The project will use LDCF resources to support the implementation of community-based and climate-resilient approaches to natural resource management. Outcome 1 will result in enhanced adaptive capacity of district forest officers and local communities through: i) improved planning and decision-making concerning natural resource use; ii) strengthening of the management frameworks at the local level; iii) training on climate-resilient techniques such as agro-forestry and assisted natural regeneration of miombo woodlands; and iv) the implementation of these climate-resilient approaches. This community-based approach to natural resource management will promote ownership of project interventions amongst local stakeholders in Serenje: approaches that local communities are positively willing to adopt will be integrated into planning for management of forest resources. Moreover, this approach is aligned with national policies and regulatory frameworks.

By enhancing the capacities of district forest officers and community members to implement on-the-ground interventions for climate-resilient CBNRM, pressures on natural resources will be reduced. Consequently, communities will benefit from sustainable production of ecosystem goods and services under future climate conditions. This will contribute towards increased food and livelihood security in spite of the predicted negative effects of climate change.

Output 1.1: Participatory resource mapping and zoning (identification of suitable areas for agro-forestry and assisted natural regeneration measures) taking alternative climate change scenarios into account completed in all six districts of Central Province.

Under this output, a comprehensive resource-mapping process will be undertaken to inform planning and decision-making on forest management. Bio-physical data – such as geology, soil types, hydrology, vegetation types, land use, past climate trends and future climate scenarios – will be collected for all six districts of Central Province. In addition, participatory resource mapping exercises will be conducted in local communities. These exercises will characterise resource use – including agriculture, extraction of wood and NTFPs, and charcoal production – and land tenure, with particular focus on the effects of past climate hazards and current climate trends. The results of the participatory resource mapping will be combined with the bio-physical data to produce integrated land-use maps. These maps will identify zones for various resource uses such as agriculture/agro-forestry, forest conservation, assisted natural regeneration (ANR), wood extraction, charcoal production and harvesting of NTFPs. This will strengthen planning for sustainable use of natural resources by enabling decision-makers at all levels to relate current land-use practices to future climate conditions.

Indicative activities within Output 1.1 are listed below:

1.1.1 Undertake a comprehensive study of bio-physical data – including geology, soil, vegetation, climate change projections and hydrology – for the Central Province of Zambia.

1.1.2 Conduct participatory resource mapping exercises to characterise resource use, land tenure and climate hazards, with particular focus on agricultural and forest areas.

1.1.3 Develop integrated resource- and land-use maps – based on the bio-physical study and the participatory mapping exercise – with zones for agro-forestry and assisted natural regeneration activities.

Output 1.2: Between 30-40 VAGs formally recognised and constituted in Serenje district by Year 2, with clear resource rights and delineation of legally-recognised VAG boundaries and use zones.

Under this output, the project will facilitate the formation of VAGs in Serenje district through a fully participatory decision-making process. Community consultations will be conducted to obtain community support and buy-in for VAGs. In particular, the consultations will sensitise community members on: i) what VAGs entail; ii) the benefits associated with VAG formation; iii) the process of registering a VAG; and iv) the

operation of VAGs for managing natural resource use. Following these consultations, the establishment of 30–40 VAGs will be facilitated in communities that indicate a willingness to do so. These VAGs will have clear leadership structures elected in a democratic and participatory fashion following international best practices for CBNRM[11,12]. Governance guidelines will be developed for VAGs. These will entrench the rights of members to participate in decision-making, have access to information, control the agenda and vote. In addition, the VAGs will formulate and ratify their respective constitutions. These constitutions will be socio-culturally appropriate and will detail procedures for *inter alia*: i) managing natural resources; ii) enforcing regulations; iii) resolving conflicts; and iv) sharing benefits. Following ratification of their constitutions, VAGs will be formally registered as Trusts[13], Village Companies[14] or Conservancies[15]. Finally, VAG boundaries will be agreed and marked, thereby entrenching VAG members' rights to use, manage, benefit from, sell and protect forest resources (see Output 1.3).

Indicative activities within Output 1.2 are listed below:

1.2.1 Conduct community consultations to sensitise community members on the procedures for – and benefits of – constituting VAGs.

1.2.3 Facilitate the establishment of VAGs, including the selection of leadership structures and formulation of a constitution.

1.2.4 Register the VAGs as Trusts, Conservancies or Village Companies following the preference of each Village Action Group.

1.2.5 Validate the integrated resource- and land-use maps concerning the boundaries and land-/resource-use zones described under Output 1.1.

Output 1.3: All VAG boundaries and use zones registered under the Zambia Integrated Land Management and Information System.

After validation of integrated resource- and land-use maps (Output 1.2), VAG boundaries and resource-use zones will be registered under the Zambia Integrated Land Management and Information System – administered by the MLNREP. The maps will be digitised as Geographical Information System (GIS) layers to support monitoring of – and planning for – land/resource use in accordance with the agreed-upon zones. The VAG boundaries will also be included in the GIS layers to clearly delineate areas falling under their respective jurisdictions.

Indicative activities within Output 1.3 are listed below:

1.3.1 Develop GIS layers for the integrated resource- and land-use maps produced under Output 1.1.

1.3.2 Register the VAGs and their associated maps under the Zambia Integrated Land Management and Information System.

[11] Senyk, J. (2005), *Lessons from the Equator Initiative: Community-Based Management by Pred Nai Community Forestry Group in the Mangroves of Southeastern Thailand*. Centre for Community-Based Resource Management, Natural Resources Institute, Winniepeg, Canada.
[12] Wood, L. (2008), *Community-Based Natural Resource Management: Case Studies from Community Forest Management Projects in Ghana, Mexico and the United States of America*. NRES 523: International Resource Management.
[13] A fund acquired from bequests, the income from which is to be used for the general betterment of the inhabitants of a community.
[14] An organisation with primarily social objectives whose surpluses are principally reinvested for that purpose in the organisation in the community, rather than being driven by the need to maximise profit for shareholders and owners.
[15] A body concerned with the preservation of nature, specific species or natural resources.

Output 1.4: Training delivered for at least 20 district forestry officers and 2,000 VAG community members on site-specific appropriate climate-resilient agro-forestry and natural regeneration practices.

Following the identification of land-use zones under Outputs 1.1 and 1.2, district forestry officers and VAG members will be trained in the implementation of climate-resilient practices in accordance with the integrated resource- and land-use maps. This will be in preparation for the implementation of such climate-resilient practices under Output 1.6. A training needs assessment will be conducted to identify where gaps exist in the currently available training opportunities relating to agro-forestry and ANR practices. These training gaps will then be addressed through the development of a portfolio of training modules for district forestry officers and VAG members on the implementation of agro-forestry and ANR in accordance with community priorities as identified in Outputs 1.1 and 1.2. A "training-of-trainers" programme will be conducted with district forestry officers to equip them with knowledge and practical instruction on climate-resilient practices. These district forestry officers will then be capacitated to facilitate training of community members on implementation of site-specific priority activities as encapsulated in the VAG land-/resource-use zones developed under Outputs 1.1 and 1.2.

Indicative activities within Output 1.4 are listed below:

1.4.1 Conduct a needs assessment for training of district forestry officers and VAG members on site-specific appropriate climate-resilient agro-forestry and natural regeneration practices.

1.4.2 Develop portfolios of training modules targeting district forestry officers and VAG members, based on the needs assessment.

1.4.3 Provide training to district forestry officers on climate-resilient agro-forestry and natural regeneration practices following a "training-of-trainers" approach.

1.4.4 Train VAGs on site-specific appropriate climate-resilient agro-forestry and natural regeneration practices (to be facilitated by district forestry officers).

Output 1.5: Wood fuel collection zones established in all VAGs and coppicing practices promoted.

Under this output, sustainable collection of wood fuel for domestic consumption and charcoal production will be promoted. Based on the land-/resource-use zones – as established under Outputs 1.1 and 1.2 – special areas will be designated for the collection of wood fuel. These wood collection zones will be identified in accordance with the VAGs' participatory decision-making processes as well as the integrated resource- and land-use maps validated by the VAGs. Furthermore, coppicing guidelines will be developed based on best practices and scientific information concerning natural regeneration of miombo woodland species. These guidelines will detail sustainable rates of coppicing and wood extraction that will reduce rates of deforestation and forest degradation by ensuring that rates of extraction do not exceed rates of regeneration. Local communities will therefore have more sustainable access to natural resources for household use as well as income generation. Guidelines for improved coppicing practices will promote sustainable CBNRM by VAGs.

Indicative activities within Output 1.5 are listed below:

1.5.1. Establish zones for collection of wood fuel through a participatory decision-making process within each VAG.

1.5.2. Establish zones for practising coppicing to generate wood fuel.

1.5.3. Develop and disseminate coppicing guidelines for each VAG.

Output 1.6: Climate-resilient agro-forestry and ANR practices are piloted over 15,000 hectares under management in Serenje district.

This output will support the demonstration of climate-resilient agro-forestry and ANR practices over 15,000 hectares of miombo woodlands in Serenje district. The integrated resource-/land-use maps – developed under Output 1.1 – will guide the development of agro-forestry and ANR plans for participating VAGs. Inter-cropping of conventional crops with suitable tree species such as *Faidherbia albida, Sesbania sesban, Tephrosia vogelii, Cajanus cajan, Gliricidia sepium, Senna siamea* and *Moringa oleifera* will be encouraged by providing community members with seedlings and agricultural inputs for agro-forestry. In addition, community members will be engaged through a "cash-for-work" programme to implement ANR for restoring degraded miombo woodlands in accordance with the priorities of the respective VAGs and in line with the ANR zones identified under Outputs 1.1 and 1.2.

The ANR practices will include enrichment planting of species that will contribute to the functional diversity of miombo woodlands. This will improve the provision of climate-resilient ecosystem goods and services that underpin the livelihoods of VAG members. For example, ANR activities will result in improved water regulation, soil conservation and production of wood and NTFPs. Indeed, rehabilitated miombo forests have been shown to supply fuel wood and building poles as well as NTFPs such as thatching grass, honey and edible fruits[16]. Species will also be selected based on their resilience to climate shocks, especially drought. Local ecological knowledge will form the basis of species selection. Other ANR practices include protection of sensitive areas – particularly where trees are being planted – against fire, grazing, cutting of wood and other forms of encroachment. This will be undertaken in conjunction with the fire management plans developed under Component 2.

Indicative activities within Output 1.6 are listed below:

1.6.1. Develop agro-forestry and ANR plans for each VAG based on the integrated resource- and land-use maps produced under Output 1.1.

1.6.2. Support the implementation of ANR practices by community members through a "cash-for-work" programme.

1.6.3. Provide community members with seedlings and other inputs for implementation of agro-forestry practices.

Component 2: Integrated climate-resilient fire management

Outcome 2: Robust fire monitoring and management protection plans and measures in place in all districts in Central Province to maintain desired regeneration targets and reduce fire frequency by 25-30% annually across the province, within a four-year burning cycle.

The UNDP-implemented, LDCF-financed project will build on the baseline projects by enhancing the capacity of local communities for climate-resilient fire management as well as increasing public awareness on the impacts of fire – particularly under future climate conditions. Availability of information on fire frequency and severity will be enhanced through the establishment of a geo-spatial fire occurrence dataset for Central Province. This dataset will allow for analysis of past fire occurrences in conjunction with climate change predictions to provide a rigorous, scientific basis for fire management planning.

Output 2.1: Geospatial fire occurrence dataset developed for Central Province based on satellite data and GIS mapping to ascertain burn severity classifications and climate change vulnerability of miombo woodlands.

[16] Dallu, A.I.M. (2002), *Tropical Secondary Forest Management in Africa: Reality and Perspectives.* Tanzania Country Paper: Workshop on Tropical Secondary Forest Management in Africa. Nairobi, Kenya.

Under this output, a database of historical fire occurrences will be developed. This will build on ZEMA's ongoing work on mapping of natural resources under the Monitoring for Environment and Security in Africa (MESA) initiative. MESA currently provides current/recent information on fire, but has yet to describe: i) historical fire trends; or ii) future fire risks resulting from climate change. Through this project, remote sensing and other data will be combined to develop maps and GIS layers detailing the frequency and severity of past forest fires. The past fire occurrences will be overlaid with the bio-physical data, climate change predictions and resource-/land-use maps from Output 1.1 to identify areas that are at risk from increased incidence of fires under future climate conditions.

Indicative activities within Output 2.1 are listed below:

2.1.1 Collate existing data from Zambia Integrated Land Management and Information System, the National Remote Sensing Centre and other sources to develop a geospatial fire occurrence database for Central Province.

2.1.2 Map historical trends of fire incidence and burn severity.

2.1.3 Overlay historical trends with future climate projections to identify areas at risk of increased incidence of fires.

Output 2.2: Fire management plans developed and operational (based on independent verification) for Serenje district based on fire occurrence dataset and local inputs.

Under this output, fire management plans will be developed for Serenje district. The fire occurrence maps produced under Output 2.1 will be ground-truthed through participatory mapping exercises with local communities. This process will identify areas that are at risk from increased frequency of fires under future climate scenarios. Based on the participatory mapping exercises, fire management plans will be developed for participating VAGs. These management plans will include programmes for prescribed fire treatments to ensure that the natural role of fire in miombo ecosystems – which contributes to proper ecosystem functioning and thus the production of ecosystem goods and services – are maintained. The fire management plans will also detail measures – such as firebreaks, reduction of fuel loads and fire suppression activities – for reducing the risk of fires that are not part of natural ecosystem functioning.

Indicative activities within Output 2.2 are listed below:

2.2.1 Conduct participatory mapping exercises to ground-truth risk maps developed under Output 2.1.

2.2.2 Identify programmes for prescribed fire treatments based on the natural role of fire in miombo ecosystems.

2.2.3 Develop fire management plans that clearly identify risk zones and practical measures for reducing the risk of fires – such as firebreaks – as well as schedules for prescribed fire treatment.

2.2.4 Establish firebreaks around the sites where ANR is being practised and in other areas as defined in the fire management plans.

2.2.5 Develop a schedule for ongoing maintenance of firebreaks, including inspections and follow-up activities.

2.2.6 Conduct regular inspections and follow-up clearing of the firebreaks according to the maintenance schedule.

Output 2.3: District forestry staff, relevant VAG members and local authorities trained on appropriate climate-resilient fire protection practices (boundary and firebreak management, early burning, etc.).

After the development of fire management plans, training will be provided to district forestry staff, local authorities and VAG members on the implementation of relevant measures encapsulated in the plans. A training needs assessment will identify where there are knowledge gaps related to the measures proposed under the fire management plans. The assessments will inform the development of a portfolio of training modules that will be tailored to the needs of the recipients. For example, training of local authorities will focus on planning for fire risk reduction and contingencies during fire events, while training for local communities will emphasise practical interventions for reducing fire frequency and severity. District forestry officers will then be provided training on fire management planning and implementation through a "training-of-trainers" approach. They will thus be facilitated to provide further training and support to local authorities and VAG members on the development and operationalisation of fire management plans.

Indicative activities within Output 2.3 are listed below:

2.3.1 Conduct a needs assessment for training of district forestry officers, VAG members and local authorities on appropriate climate-resilient fire protection practices.

2.3.2 Develop portfolios of training modules targeting district forestry officers, VAG members and local authorities, based on the needs assessment.

2.3.3 Provide training to district forestry officers on climate-resilient fire protection practices following a "training-of-trainers" approach.

2.3.4 Train VAGs and local authorities on site-specific climate-resilient fire protection practices (to be facilitated by district forestry officers).

Output 2.4: Awareness-raising campaigns undertaken across all districts about the benefits of adopting fire management measures to strengthen the adaptive capacity of miombo forests to climate change.

Under this output, awareness-raising activities will be conducted across Central Province to increase the availability of knowledge on fire management amongst local communities. Awareness-raising materials will be developed to include media that are appropriate to the recipient audiences. These are likely to include printed media as well as audio-visual media to cater for various levels of literacy[17]. Dissemination of the materials will result in increased awareness of community members on appropriate practices for managing fires as well as the benefits of reducing the occurrence of fires in accordance with fire management plans.

Indicative activities within Output 2.4 are listed below:

2.4.1 Develop awareness-raising materials – such as flyers, posters, brochures, short video documentaries, community theatre and radio programmes – on fire management measures in miombo ecosystems.

2.4.2 Disseminate awareness-raising materials through appropriate media such as radio, television and community visits.

[17] Zambia's overall literacy rate is currently ~61%, but this figure is considerably lower (~50%) in rural areas (Zambia Ministry of Education, 2009).

Component 3: Increased knowledge about, and uptake of, appropriate supply-side, biomass energy production technologies.

Outcome 3: Energy efficient charcoal production and wood-saving technologies have successfully replaced inefficient systems in targeted areas of Central Province, helping offset pressure on the forests as the climate changes.

The project will demonstrate the use of improved technologies to: i) improve the livelihoods of local communities at intervention sites; and ii) reduce rates of deforestation and forest degradation in these areas. This will be achieved through: i) more efficient production of charcoal; and ii) use of alternatives to wood for the production of charcoal. Improved livelihoods of local communities at intervention sites will promote economic development, thereby strengthening the capacity of these stakeholders to adapt to the negative effects of climate change. The project will support the formation of charcoal producer groups to improve coordination of wood extraction. In particular, these groups will receive training on sustainable use of forest resources as well as the operation of improved charcoal kilns. These kilns will then be distributed to members of the charcoal producer groups. The more efficient production of charcoal through the operation of improved charcoal kilns will result in reduced pressure on forest resources. This will be complemented by a monitoring, tracking and licensing system to ensure that sustainable use of wood for charcoal production is maintained.

To further reduce pressure on forest resources, alternative sources of charcoal will be promoted. Feedstocks such as agricultural residues, animal manure and other waste materials will be identified based on their suitability for use in briquetting machines. Charcoal producers will be trained on the use of these materials and the operation of briquetting machines. The project will also introduce these machines to the charcoal producers. This will result in reduced pressure on forests as charcoal production will be less reliant on wood through the substitution of alternative materials.

Output 3.1: Deployment of technologies and development of sustainable charcoal schemes in 20 VAGs with (i) charcoal producer groups formed and trained to operate kilns; (ii) charcoal retort kiln pilots introduced (120 improved kilns to replace earth kilns); (iii) monitoring, tracking and licensing system established for all improved kilns piloted.

Under this output, community members in 20 VAGs will be capacitated to practice sustainable and efficient charcoal production to reduce pressure on forest resources. Charcoal producer groups will be formed to improve coordination of wood extraction for the purposes of charcoal production. This will result in more sustainable use collection and production of charcoal with concomitant reductions in the rate of deforestation and forest degradation.

Indicative activities within Output 3.1 are listed below:

3.1.1 Form charcoal producer groups in targeted VAGs.

3.1.2 Provide training to members of charcoal producer groups on: i) sustainable harvesting; and ii) operation and maintenance of improved kilns.

3.1.3 Introduce 120 improved charcoal kilns to charcoal producer groups.

3.1.4 Develop and implement a monitoring, tracking and licensing system for all improved kilns introduced.

Output 3.2: 50 charcoal or sawdust briquetting machines or presses piloted across 20 VAGs.

Under this output, briquetting machines will be introduced in VAGs. These machines will reduce the pressure on forest resources by allowing the production of charcoal using alternative feedstocks. For example, agricultural residues and industrial wastes can be used in the place of wood harvested from forest areas. In areas where ANR is being conducted, charcoal production will be able to continue without risking the viability of ANR activities. Suitable sources of feedstock – e.g. sawdust, chaff, straw, waste paper – and binding agents will be identified, based on local availability. Producers of identified feedstocks and binding agents will be linked with charcoal producer groups to strengthen the supply chains for these materials. Appropriate briquetting machines will then be selected, taking into account the: i) feedstocks; ii) binding agents; and iii) operational requirements. Members of charcoal producer groups will then be supplied with such briquetting machines and trained in their operation.

Indicative activities within Output 3.2 are listed below:

3.2.1 Identify sources of biodegradable waste and binding agents suitable for production of briquettes in the targeted VAGs.

3.2.2 Facilitate the strengthening of value chains through linking of producers/suppliers of biodegradable waste and binding agents to charcoal producer groups.

3.2.3 Provide training to members of charcoal producer groups on operation of briquetting machines.

3.2.4 Introduce 50 briquetting machines to charcoal producer groups.

Sustainability and replicability

The PIF includes a description of the sustainability of the project, focusing on the: i) Community-Based Natural Resource Management (CBNRM) approach; and ii) triple criteria of sustainable forest management. The Project Document expands on the ideas of sustainability that are introduced in the PIF. Moreover, the Project Document includes a section on replicability. These ideas are described below.

Sustainability:

- A **consultative approach** supports the sustainability of interventions beyond the duration of the project by ensuring that the long-term needs of climate-vulnerable local communities are prioritised. Local stakeholders were consulted during the project preparation (PPG) phase and similar consultation will be ongoing as part of the LDCF project. The project design team engaged with relevant national stakeholders and experts to align activities with national priorities and development goals. This will support long-term political and financial commitment of policy- and decision-makers to the project interventions. Additionally, a decentralised approach will foster and support community ownership of project interventions, resulting in greater buy-in by the project beneficiaries. Empowerment of communities through effective CBRNM implementation will also increase the adaptive capacity of communities to address climate risks in future. Several project interventions will be implemented at a community and village level (see Section 24 in the project document). The maintenance of such interventions is relatively low cost and does not require technical skill, enabling maintenance by local communities beyond the duration of the project. Furthermore, these interventions will continuously generate economic revenues for communities in the long-term.

- To support the mainstreaming of climate change into planning and policies across multiple sectors, the project will **strengthen the capacity of relevant Government ministries and departments** to plan and implement climate-smart land use. This capacity building will be complemented by a strategy for maintaining technical capacity in the MLNREP and relevant departments. These interventions will

strengthen the institutional environment for adaptation planning both during and after the project period. Close involvement of numerous Zambian Government institutions and departments in the project's development and implementation promises potential for future incorporation of the project's approaches into on-going planning and strategies.

- **Improved generation and collation of information** on climate-smart land use planning will support technical staff within MLNREP to apply the project approach on an ongoing basis. Specifically, the LDCF project will establish a geospatial fire occurrence data set for Central Province (Output 2.1), which can be used for monitoring historical fire assessment and early warning. In addition, the LDCF project will implement a long-term strategy for monitoring and evaluating climate-smart ecosystem restoration and management interventions for MLNREP and relevant departments.

Replicability:

- The interventions implemented by the project are designed as **pilot demonstrations** that can be replicated in other districts in Zambia. The design of the project's activities include several measures that will support replicability of successful activities beyond the project implementation period.

- Pilot projects will **inform related initiatives**. All components and their technical elements are scalable and can therefore be replicated in all geographical areas of the country and beyond, where ecological conditions are similar. The benefits of the interventions piloted in the Central Province will be assessed. Lessons learned from this process will be collated and disseminated to support replication of assisted natural regeneration, agroforestry and fire management regimes in other sites around Zambia. In particular, pilot projects will generate evidence on the cost-effectiveness of ecosystem rehabilitation interventions.

- The project's interventions **will increase the availability of information and planning tools** to support future climate change adaptation initiatives in Zambia. For example, the geospatial fire data set developed under Output 2.1 will generate data that can be used by local communities.

- **Generating evidence on the cost-effectiveness** of climate change adaptation interventions will facilitate policy and budgetary adjustments. Benefits that are demonstrated from community-based, climate-resilient management of forests will support integration of these approaches into on-going planning processes. Moreover, the project will strengthen the capacity of national and local institutions to plan and implement such approaches, thereby supporting ongoing and future climate change related initiatives in Zambia.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

The table below summarises the risks to the proposed LDCF project.

Risk	Rating	Risk Mitigation Measure	Assumption
1. In Zambia, the decentralisation process is a relatively new concept. Moreover, customary land tenure law	P: 1 I: 4	• The National Decentralisation Policy (2010) supports the project's decentralised approach. The FD is supportive of such approaches. • The project will work closely with the relevant District	• VAGs are established successfully. • All Government stakeholders that are involved in the LDCF project

sometimes conflicts with forest regulations. For example, outside of state-controlled forest areas, traditional leaders may allocate forested land to community members for agricultural use. This is particularly true in areas where local communities have limited knowledge of forestry legislation. Such problems might affect the formation of the VAGs and decentralised approach.	Rating Medium	Councils, District Forestry Officers and to ensure that the VAGs are in conformity with local structures and customary law, and supported by local authorities (see Outputs 1.2–1.4). • The project will benefit from implementation of a similar approach via the GEF MFA project[18]. Moreover, the SFM projects of Finland and USAID, which are adopting similar approaches in other provinces, will be consulted. • Lessons learned from the 20 years of CBNRM will be reviewed. • The project will also build on institutional structures that have been established through similar projects and initiatives undertaken in Zambia.	support the decentralisation policy.
2. Local communities have limited capacity to implement and monitor project interventions, particularly assisted regeneration. Success of regeneration interventions will be limited.	P: 1 I: 5 Rating Medium	• Best practices from similar initiatives will be applied for the LDCF project. • Local communities will be trained on relevant topics (see Outputs 1.4, 2.3, 2.4 and 3.1). Moreover, these communities will be made aware of the benefits of miombo woodlands – including NTFPs.	• Local communities will apply trainings.
3. The approach adopted by the project is ineffective because of limited coordination between stakeholders at the local, provincial and national level.	P: 3 I: 4 Rating High	• The LDCF project will initiate and sustain dialogue between stakeholders at all levels (see Outputs 1.1 and 2.2). • The benefits of a community-based and integrated approach to CBNRM – particularly through ANR and fire management – will be demonstrated by the LDCF project (see Outputs 1.1, 1.2, 1.5, 1.6 and 2.2). • Best practices from similar	• Stakeholders that are involved in the project are willing to communicate and coordinate. • Dialogue will be sustained during and beyond project implementation.

[18] Sustainable Land Management in the Zambian Miombo Woodland Ecosystem.

		initiatives will be applied to the LDCF project.	
4. Extreme climatic events and climate variability affect success of regeneration and agro-forestry interventions.	P: 1 I: 5 Rating Medium	• Ensure that current climatic variability is taken into account in restoration processes (see Output 1.6). • Focus on resilient species (e.g. *Faidherbia albida*, *Moringa oleifera*, *Sesbania sesban*, *Cajanus cajan* and *Gliricidia sepium*) and promote techniques to assist plant growth, particularly in the seedling and sapling stages (see Output 1.6).	• Project activities are unlikely to be undermined by extreme climate events.
5. Limited acceptance of interventions by local communities in Central Province. [19]	P: 2 I: 5 Rating Medium	• Local communities will be included in participatory activities, thereby promoting buy-in (see Outputs 1.1–1.3 and 2.2). • Activities will be undertaken to enhance awareness of the benefits of interventions (see Outputs 1.1, 1.2, 1.4, 2.3 and 2.4).	• Local communities will take ownership of the project.
6. Local communities will continue to transform miombo forest to agricultural or grass lands.	P: 4 I: 5 Rating High	• Benefits of ANR will be demonstrated by the proposed LDCF project (see Output 1.6). • Activities will be undertaken to enhance awareness of the benefits of interventions (see Outputs 1.1, 1.2, 1.4, 2.3 and 2.4). • Intervention sites will be monitored by local authorities and VAGs (see Outputs 1.2, 1.3 and 2.2).	• Local communities will experience initial benefits from ANR during the project lifespan. • Local communities will take ownership of the project. • Market fluctuations for natural resources from miombo woodlands will not result in exploitation in intervention sites.
7. Tangible results will only be visible after the project finishes.	P: 3 I: 4	• The LDCF project will adopt a participatory planning approach (see Outputs 1.1–1.3 and 2.2). • Communities will be made	• Local communities will experience initial benefits from

[19] Leventon, J. *et al*. (2014), "Delivering community benefits through REDD+: lessons from Joint Forest Management in Zambia", *Forest Policy and Economics*, 44:10-17.

Therefore, local communities might not support interventions[20].	Rating High	aware of the benefits of ANR and have access to these benefits once they are generated. • Activities will be undertaken to enhance awareness of the benefits of ANR.	ANR during the project lifespan. • Market fluctuations for natural resources from miombo woodlands will not result in exploitation in intervention sites.
8. GIS tools for fire management do not match with the needs of communities on the ground.	P: 1 I: 3 Rating Medium	• Activities that are undertaken during the inception phase will include meetings between the Zambian Environmental Management Agency (ZEMA) and local stakeholders. During these meetings, GIS for practical fire management will be explained to local communities (see Outputs 2.1 and 2.2).	• Local communities support the integration of scientific information into community management frameworks. • There is sufficient capacity to apply GIS tools and translate products from the tools to local communities.
9. There is a conflict of interest between current suppliers of energy technologies in the country and the introduction of briquetting machines.	P: 1 I: 3 Rating Medium	• Local briquette producers will benefit from training and improved equipment (see Output 3.2). • Best practices from similar initiatives will be applied to the LDCF project.	• Current suppliers of energy technology will be willing to participate in project activities.
10. Particular members of local communities will be selected to receive kilns, thereby potentially marginalising other (more vulnerable) members. In this case, the most vulnerable members of local communities will not be targeted for project	P: 1 I: 4 Rating Medium	• Beneficiaries of the sustainable charcoal programme should be selected based on vulnerability and needs, to avoid the exclusion of the poorest of the poor from the programme (see Output 3.1). • These improved kilns will benefit a greater number of local community members than traditional kilns (see Output 3.1).	• Benefits from kilns will accrue at the community level.

[20] Field consultations during project preparation, 2014.

interventions.			
11. Implemented interventions are not cost-effective.	P: 1 I: 4 Medium	• Assisted regeneration provides numerous income-generating opportunities for local communities, and is a cost-effective approach to restoration of miombo woodlands. The benefits of this approach will accrue over time as ecosystems that are restored become more productive. However, miombo woodlands regenerate relatively rapidly. Therefore, benefits should be realised during the project. Training for VAGs on site-specific appropriate climate-resilient agro-forestry and natural regeneration will include information on the benefits of these approaches. • Agro-forestry interventions have been developed based on best-practice and through extensive consultation with stakeholders in the country and in Central Province.	• Sufficient national financial resources will be available to maintain the project's interventions in the long-term.

A.7. Coordination with other relevant GEF financed initiatives

The project will draw close linkages and synergies from other ongoing GEF-funded initiatives, notably the multi-focal area project, 'Strengthening Management Effectiveness and Generating Multiple Environmental Benefits within and around the Greater Kafue National Park in Zambia'[21] and the LDCF project, 'Strengthening Climate Information and Early Warning Systems in Zambia'[22]. For instance Mumbwa, one of the Districts in Central Province, will also be covered by the LDCF project. The project will therefore use the same structures and methodology as the LDCF project in implementing Component 2 on integrated climate-resilient fire management. In addition, by sharing the use of village scouts with the LDCF project to patrol and report fire occurrences, duplication of efforts will be avoided and budget efficiencies enhanced. Further, the LDCF project is developing an early warning system dissemination toolbox, which will include a trainer manual on the use of a range of national and local gender-sensitive media for disseminating weather and climate information alerts to end-users. Radio and mobile phones will also be used as a means of conveying information. In the process of developing a fire monitoring system for Central Province, some of these technologies will be adapted.

The AfDB-LDCF project on 'Promoting Climate Resilient Livestock Management'[23] plans to train artisans in manufacturing livestock-related material as a source of income diversification. This will be a good starting point for the regeneration project, and the UNDP-LDCF project will coordinate with the AfDB-LDCF

[21] PMIS 4639.
[22] PMIS 4995.
[23] PMIS 5394.

project to ensure that alternative livelihood options explored by the AfDB-LDCF project are consistent with the agro-forestry and natural forest regeneration options being promoted by the UNDP-LDCF project. Further, the 'Adaptation to the Effects of Drought and Climate Change in Agro-Ecological Regions I and II' project[24], also being implemented by UNDP, covers Central Province, which is the area of focus for the regeneration project. The Agro-Ecological LDCF project is working with COMACO (Community Markets for Conservation), which links NTFPs to local and overseas markets. Since COMACO is also one of the co-financers of the regeneration project, the regeneration project will use the market linkages that have already been put in place to ensure efficiency and sustainability.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

The management of forests and other natural resources requires the concerted effort of a range of stakeholders. Therefore, stakeholders at both national and local levels will be engaged during implementation of the UNDP-implemented, LDCF-financed project. This process commenced during the PIF and project preparation phases. Based on the regional CBNRM experience and the lessons learned from Zambian CBNRM, the project allows for the adoption of a local-level institutional arrangement framework that has recently been developed for REDD+ in Zambia[25] and is based on the following principles:

- Development of business enterprises focusing on the sustainable utilisation of forest resources;
- Capacity building through experiential learning and a participatory forest management approach within the Forestry Department;
- Development of robust institutional linkages for collaborative management; and
- Adoption of sustainability strategy elements.

The institutional structure of the project will reinforce the linkages between Government ministries and relevant departments regarding decentralised planning and facilitation of development activities at district level. This should further ensure the district-level ownership of the project. At the community level, the project should equally be facilitated by and through legally-constituted VAG structures to support the activities post-project.

An overview of the role of the different stakeholders in the project is outlined below in the table below.

Key Stakeholder	Role in Project
Forestry Department (FD) – Ministry of Lands, Natural Resources and Environmental Protection (MLNREP)	Overall lead agency, chair of the Project Steering Committee and key implementing partner. The FD and MLNREP will be responsible for the mapping and zoning under Output 1 and training of district forestry officers under Output 1.4. In addition, the FD and MLNREP will assist with the development of fire monitoring and management plans under Outcome 2.
Ministry of Agriculture and Livestock (MAL)	Key Implementation Partner for Component 1. MAL will assist with the identification and implementation of agro-forestry techniques.
Ministry of Community Development, Mother and Child Health (Community Development Department)	Community Development Department District Officers will play a key role in assisting with training and awareness-raising campaigns at the District level under Outcomes 1.4 and 2.4, as well as for Component 3.

[24] **PIMS No. 3942**

[25] Zambian Forestry Department and UN REDD (2012), *Forest Management Practices With Potential For REDD+ In Zambia, Final Report*.

Ministry of Local Government and Housing (MLGH) – District Councils (DCs)	The mandate of DCs includes district governance and administration, including establishment of by-laws, maintenance of law and order, imposition of levies, planning, infrastructure development, protection of local forests and woodlands, road maintenance, establishment of social and recreational amenities, maintaining postal services, sanitation and drainage, and community development. The DCs will play a key role in regards to activities to be undertaken by VAGs.
Ministry of Mines, Energy and Water Development (MMEWD)	Key Implementing Partner for Component 3. The MMEWD will provide technical support for the development of renewable energy technologies.
Ministry of Chiefs and Traditional Affairs (MCTA) – House of Chiefs	The MCTA will play a key role in community involvement and participation, assisting with the establishment of VAGs and delineation of boundaries (Outputs 1.2 and 1.3), allocation of lands for wood fuel collection zones (Output 1.5) and the establishment of charcoal producer groups (Output 3.1).
Village Action Groups (VAGs) /	Key units of BENEFIT, ACTION and ACCOUNTABILITY for all site-specific activities under both components. VAGs will establish, monitor and manage land use plans and protected forests, and act as the main entry-point for all site-level activities. VAGs will be established to implement members' directives with annual elections, maintain membership records, and conduct quarterly general meetings for submission of reports and finances. VAGs will be responsible for undertaking activities under Outcomes 1, 2 and 3.
UN-REDD Programme, Zambia	In-depth cooperation on implementation, particularly with regard to project design, institutional arrangements and monitoring under Outcome 1. The activities will be in alignment with the Sustainable Forest Management analytical framework, which prioritises practices perceived as having the highest potential for REDD+ implementation in Zambia.
Zambia Climate Change Network (ZCCN)	Cooperation on design and implementation; ZCCN may also be sub-contracted by MLNREP to implement specific activities. ZNNC will sit on the PSC as a representative of civil society.
Local NGOs	Cooperation on design and implementation and possible sub-contracting for various activities. Several NGOs – including Pioneer and COMACO – will be key stakeholders in the design of the ANR and agro-forestry schemes.
Copperbelt University / Zambia Forestry College	Key monitoring and capacity building partner for: provision of support services (research, monitoring and training), development of training manuals and support services to resource monitoring, and dissemination of scientific information.
Centre for Environmental Research, Education and Development (CERED)	Cooperation on agro-forestry research, technology dissemination, education (curriculum design and development), agroforestry scaling up including provision of agroforestry germplasm, SFM and Climate Smart Agricultural practices (adaptation and mitigation)
Zambia Women's Alliance	Will be involved in all gender-related activities.
Zambia Land Alliance	Will be involved in all land-rights related activities.

The execution modality for this project will follow UNDP's National Implementation Modality (NIM). The Implementing Partner (IP) for this project will be the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP). This Ministry will have project ownership and will appoint a Project

Manager (PM) – paid by the project – to coordinate operations. Stakeholders that will be involved in the project will benefit through technical support and training on relevant topics. Such ministries will include: i) MLNREP; ii) MAL; ii) the Ministry of Chiefs and Traditional Affairs (MCTA); iii) the Ministry of Mines, Energy and Water Development (MMEWD) iv) regional government stakeholders; and v) Community-Based Organisations (CBOs). However, the main beneficiaries of the LDCF project will be local communities in Central Province, Zambia.

The **Project Steering Committee** (PSC) will be chaired by MLNREP and will be responsible for approving project activities. Based on the activities approved by the PSC, the Project Management Unit (PMU) will ensure the provision of funds to all institutions/organisations to undertake relevant activities. All executing agencies will be responsible for managing tasks allocated to their institution/organisation. To clearly define the responsibility of each executing agency during project implementation, Memorandums of Understanding (MoUs) and Terms of Reference (TORs) will be developed under the guidance of the PMU. Moreover, a Letter of Agreement (LoA) has been developed to detail all additional services required of UNDP beyond its role of overseeing the IP. For example, the IP has requested UNDP to provide services such as recruitment, procurement, assistance for training and payments services. The direct project costs requested of UNDP are also detailed in the Total Budget Work Plan.

The **Project Steering Committee** (PSC) will be established by MLNREP and will be responsible for approving reports and activities. This Committee will also provide guidance for proper implementation of the project. Members of the Project Steering Committee will include UNDP, representatives of District Councils, MAL, MMEWD, Ministry of Chiefs and Traditional Affairs (MOCTA), ZEMA, Zambia Climate Network and others. The PSC will play a critical role in project monitoring and evaluation by quality-assuring processes and products and using evaluations for performance improvement, accountability and learning. Moreover, the Committee will: i) ensure that required resources are committed, ii) arbitrate on any conflicts within the project and iii) negotiate a solution to any problems with external bodies. In addition, the PSC will approve the appointment and responsibilities of the Project Implementation Unit (PIU) and any delegation of its project assurance responsibilities. The Committee will also be responsible for approving any deviations from the original project document in the approved Annual Work Plan (AWP). The Committee will convene twice annually. Members of the PSC will be validated during the Project Appraisal Committee (PAC) meeting. In addition, representatives from other institutions/organisations can be included in PSC meetings as appropriate.

The PSC will include four distinct divisions/roles, which are described below:

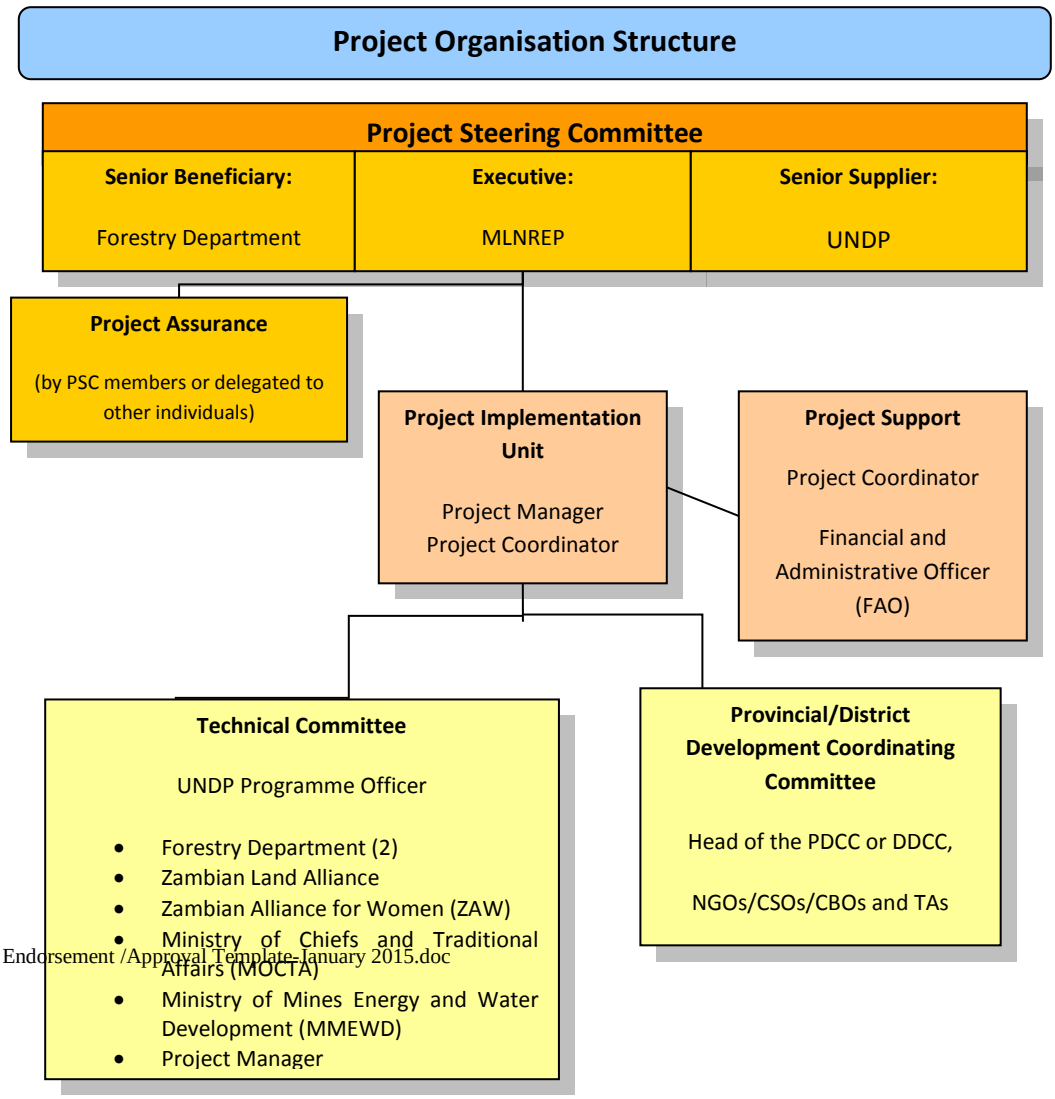
- An Executive (from MLNREP) will be an individual who will chair the PSC.
- The Senior Supplier (SS) (from UNDP) will be a group representing the interests of the parties concerned. This group will provide funding for specific cost-sharing projects and/or technical expertise to the project. The primary function of this supplier will be to guide the technical feasibility of the project and align the outcomes/outputs with LDCF policies.
- The Senior Beneficiary (SB) (from FD) will be a group representing the interests of those who will ultimately benefit from the project. The primary function of the SB will be to ensure the realisation of project results from the perspective of project beneficiaries.
- The Project Assurance (PA) (from UNDP Zambia Programme Officer and UNDP-GEF) will support the PSC Executive by undertaking: i) objective and independent project oversight; and ii) monitoring functions in line with UNDP and GEF/LDCF policies and procedures.

A representative from MLNREP will be assigned as the **Project Coordinator** (PC) to support the PM with: i) overall administration; and ii) maintaining liaison with UNDP. This coordinator will be appointed by MLNREP and act as a permanent staff of MLNREP (i.e. he/she will not supported by the LDCF-financed project). Travel indemnities will be paid for the PC and have been accounted for in the TBWP (Section 4).

The **Technical Committee** (TC) will include the following permanent members: Forest Department (2 representatives), the UNDP Programme Officer, the PM, a representative from MAL, a representative of the Zambian Climate Network (ZCN), a representative of the Zambian Land Alliance (ZLA), a representative of the Zambian Alliance of Women (ZAW), a representative of MOCTA and a representative of MEMWD. The role of the TC is to provide technical advice and guidance to the PIU, namely financial and technical support as required by the needs of this unit. The Technical Committee is required to meet once per month to ensure timely project implementation.

The **Project Implementation Unit's** (PIU's) overall role will be to ensure that comprehensive technical and management support is provided to project implementers and local beneficiaries, such as overseeing knowledge management and Monitoring and Evaluation (M&E). Importantly, the PIU should have adequate capacity to provide support for technical and financial activities. Moreover, the team of PM, PC and the TC must be able to work collaboratively in the fields of natural resource management, economics, political science and organisational issues. Moreover, this unit must be able to ensure that activities are designed and implemented in line with national and international best practices.

Regional Committees (RCs) will provide a supporting role to the PIU to avoid duplication and promote complementarity of similar initiatives. The RC in Serenje District will include: i) the head of Central Province; ii) two members of Serenje Regional Council (RC); and iii) heads of locally-based NGOs/CSOs. The District head will be responsible for two-way communication with all communities in the RC's jurisdiction. The responsibility of the RCs will be to ensure close cooperation with the national and local governments/organisations for the purposes of implementing local activities, discussing technical issues, setting priorities, resolving conflicts and supervising site-level activities. The RCs will be accountable to the PIU.



To ensure UNDP's ultimate accountability for the project results, decisions made by the Project Steering Committee will be in accordance with standards that promote: i) management for development results; ii) best value for money; iii) fairness; iv) integrity; v) transparency; and vi) effective international competition. If consensus cannot be reached by the PSC on a particular topic, the PM will make the final decision. Potential members of the PSC will be reviewed and recommended for approval during the PAC meeting. In addition, representatives of other groups can be included in the PSC as appropriate. At the national level, the PSC will collaborate closely with MNLREP, ZEMA, MMEWD, MCTA and key actors in civil society.

B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

The UNDP-implemented, LDCF-financed project will address the problems of deforestation, poverty and vulnerability of communities to climate change in Central Province. The adaptation interventions will directly contribute to MDG 7 – ensuring environmental sustainability. Because local communities depend on natural resources for their livelihoods, improved environmental management will reduce poverty and increase food security, thereby contributing to attaining MDG 1 – eradicate extreme poverty and hunger – as well as other MDGs that are closely linked to the natural resource base. Additionally, training communities in assisted natural regeneration techniques and the sustainable use of resources will increase their resilience to climate shocks. In addition, such activities will improve their livelihoods by diversifying their income-generating opportunities. The project will therefore contribute to reducing poverty in Central Province.

Without the LDCF project, local communities and the ecosystems upon which they depend will be increasingly at risk from the effects of climate change. As a result, progress towards reforestation and socio-economic development is likely to be hampered. The LDCF project will provide practical tools, technologies and capacities for an adaptation programme that promotes natural resources management by communities. Foresters and communities will be trained to implement: i) assisted natural regeneration techniques; ii) agroforestry practices that are climate-resilient; and iii) appropriate fire management regimes. This will be done through practical demonstrations over 15,000 ha to improve the maintenance and enhancement of ecosystem functioning, integrity and resilience. The following benefits will accrue as a result of the adaptation interventions.

Assisted Natural Regeneration (ANR) accelerates growth and influences the succession of degraded forest plant communities. This process supports conservation of ecosystems that provide livelihoods and services. Improved agro-forestry systems comprise a range of technologies that support cost-effective permanent agriculture and microclimate management. A higher degree of permanence in cultivation results in reduced demand for conversion of natural forests into agricultural land compared with shifting agriculture practices. In addition, agro-forestry has a positive effect on the socio-economic context in terms of financial profitability, satisfaction of multiple user needs and carbon sequestration. Furthermore, agro-forestry systems provide various products which otherwise would be taken from forests. A reduced number of fires and early burning will have a beneficial effect on woody biomass accumulation in miombo woodlands.

At a local level, the LDCF project will directly contribute to reducing the socio-economic vulnerability of local communities to the adverse effects of climate change and variability at a sub-national level. A variety of site-specific activities and adaptation technologies will be implemented to reduce the vulnerability of forest ecosystems and simultaneously restore forest resources within the project area, which is particularly prone to degradation.

The immediate benefits of the project will be that Government institutions, NGOs and vulnerable communities have increased adaptive capacity as they: i) are more aware of the linkages between climate resilience and ecosystem management; and ii) acquire the necessary skills to apply adaptive approaches. This increased capacity will also support long-term benefits by promoting adaptation planning beyond the life-span of the project.

Gender equality and the use of a community-based approach are focus areas of the LDCF project. Consequently, project interventions will promote social equity and equality by targeting vulnerable groups, including women. The role of women will be strengthened through knowledge transfer on resilience-building activities and adaptation responses. Women will be included as both actors and managers, as well as beneficiaries. The role of women will also be strengthened through the collaboration and integration of women's groups, including the Zambia Women's Alliance, which will be consulted throughout the project implementation period. Women will also be incorporated into the decision-making process and implementation of the UNDP-implemented, LDCF-financed project through representation on the VAGs. Under Component 1, the participatory resource mapping will focus in particular on the priorities of women, the youth and the elderly with regard to resource use. The establishment of VAGs will be undertaken in a manner to ensure equitable decision-making and benefit sharing for all users, again with a focus on the priorities of women and other vulnerable groups. This will ensure a gender-sensitive basis to the activities undertaken under the project components. For example, training and awareness-raising activities – across all three components – will specifically include women to ensure that they have improved capacity and awareness to support the adoption of climate-resilient agro-forestry and other livelihood practices. Furthermore, the project includes gender-disaggregated indicators. For example, under Outcome 3, 20% of the recipients of energy efficient charcoal or sawdust briquetting machines are expected to be women.

B.3. Explain how cost-effectiveness is reflected in the project design:

The activities of the UNDP-implemented, LDCF-financed project have been designed to be cost-effective. Should the LDCF project not be implemented, the business-as-usual activities will increase future costs of forest degradation and lead to further marginalisation of local communities.

In order to reduce costs and to avoid duplication, the LDCF project will pursue an active partnership strategy with other ongoing initiatives and collaborative synergy with NGOs on the ground. Through this collaboration, the LDCF project will build on the lessons learned and best practices from past and current projects and ensure that cost-effectiveness is included as a selection criteria for identification of appropriate adaptation practices and implementation protocols.

Interventions under Component 1 form a package of forest and land-use management techniques that restore degraded and deforested lands to more productive forests. These ANR activities are more cost-effective than plantations and result in higher biodiversity, which enhances the value of the ecosystems[26]. Consequently, a higher diversity of timber and non-timber forest products is generated, which satisfies the multiple needs of communities.

[26] Food and Agriculture Organisation of the United Nations Regional Office for Asia and the Pacific. (2011). Forests beneath the grass. Proceedings of the Regional Workshop on Advancing the Application of Assisted Natural Regeneration for Effective Low-Cost Restoration. Available online at: http://www.fao.org/docrep/014/i1734e/i1743e00.pdf. Accessed on 17 February 2015.

Interventions under Component 2 will build upon existing GIS-based fire monitoring. In doing so, the LDCF project will create synergies with existing fire management strategies in Central Province by improving the capacity of forestry officers to plan for and manage fires. Theses synergies will be further enhanced through capacity building. The enhancement of synergies is proven to be a cost-effective measure.

Component 3 acknowledges worldwide experiences that economic sustainability cannot be achieved as an output from environmental benefits. Rather, economic welfare has to be created at the outset. This will provide for ecological sustainability and resilience. Project financing therefore provides substantial economic and other benefits for communities from the start through CBNRM and other support to grant the highest cost-effectiveness for all components. Therefore, this approach will avoid project failures caused by leakages or higher initial economic returns from more destructive forest use systems.

Demonstration of cost-effectiveness for each proposed Output, indicating the project barrier addressed by each Output.

Output	Barriers Addressed	Alternatives Considered
1.1. Participatory resource mapping and zoning (identification of suitable areas for agro-forestry and assisted natural regeneration measures) taking alternative climate change scenarios into account completed in all six districts of Central Province. 1.2. Between 30-40 Village Action Groups (VAGs) formally recognised and constituted in Serenje District by Year 2, with clear resource rights and delineation of legally recognised VAG boundaries and use zones. 1.3. All VAG boundaries and use zones registered under the national Land Information Management System (LIMS). 1.4. Training delivered for at least 20 district forestry officers and 2,000 VAG	Low productivity of the ecosystem, low motivation of communities to conserve forests, unclear forest use rights and collection zones	Alternative 1: BAU: Forests will not be regenerated and therefore not add value to communities' livelihoods or to GDP. Vulnerability to climate change of the socio-ecological system will be enhanced, leading to further climate resilience loss with increasing costs in a positive feedback loop. The absence of VAGs will lead to continued conflicts among forest stakeholders. Alternative 2: ANR: ANR is a low-cost, community-based regeneration alternative that is tailored to a forest regeneration system which addresses the multiple needs of communities and re-establishes climate resilience of the socio-ecological system. Alternative 3: Plantations generate slightly higher biomass than ANR but, however, incur higher costs, planting materials are more difficult to access and – as they are mainly monocultures[27] – are also vulnerable and are more difficult to implement through CBNRM. Alternative 4: Creation of VAGs: will be most effective, as costs of user conflicts will be avoided. Alternative 5: Agro-foresty: Most cost-effective alternative to high-input sedentary agriculture, as

[27] The productivity of plantations in Zambia is threatened by several factors, including fungal pathogens that reduce timber quality and cause tree mortality. Chungu, D., Muimba-Kankolongo, A., Wingfield, M., & Roux, J. (2010), "Plantation forestry diseases in Zambia: contributing factors and management options". *Annals of Forest Science* 67: 802.

community members on site-specific appropriate climate-resilient agro-forestry and natural regeneration practices and value chain development for alternative livelihoods. 1.5. Wood fuel collection zones established in all VAGs and coppicing practices promoted. 1.6. Climate-resilient agro-forestry and ANR practices are piloted over 15,000 hectares under management in selected districts across the Province.		per discussion in Chapter 2.3.3.
2.1. Geospatial fire occurrence dataset developed for Central Province based on satellite data and GIS mapping to ascertain burn severity classifications and climate change vulnerability of Miombo woodlands. 2.2. Fire management plans developed and operational (based on independent verification) for all targeted districts based on fire occurrence dataset and local inputs. 2.3. District forestry staff, relevant VAG members and local authorities trained on appropriate climate-resilient fire protection practices (boundary and firebreak management, early burning, etc.). 2.4. Awareness-raising campaigns undertaken across all districts about the benefits of adopting fire management.	Lack of awareness and sensitivities to the increasingly negative impacts of late burning under climate change, lack of equipment by local communities and Forestry Department to control proliferating fires, previous lack of GIS technologies to monitor forest fires.	Alternative 1 BAU: Continued late burning will further enhance the vulnerability of forest ecosystems to climate-induced fires and, in the long-run, double the frequency of fires, leading to a climax vegetation of crippled trees with corked leaves, which are unable to maintain important ecosystem services necessary to sustain livelihoods for forest communities or to contribute substantially to GDP. Alternative 2: Integrated fire management by making use of GIS-based services of ZEMA, in combination with piloting local fire management will allow use of fires in an optimum way to maximise forest regeneration according to specific management targets even under conditions of climate change.

3.1. Deployment of technologies and development of sustainable charcoal schemes in 20 VAGs with: (i) charcoal producer groups formed and trained to operate kilns; (ii) charcoal retort kiln pilots introduced (120 improved kilns to replace earth kilns); (iii) monitoring, tracking and licensing system established for all improved kilns. 3.2. 50 charcoal or sawdust briquetting machines or presses piloted across 20 VAGs.	Relatively low biomass productivity, non-defined use rights, lack of access to sustainable charcoal technologies, absence of monitoring and tracking system, low motivation of communities to conserve forests.	Alternative 1: BAU: Charcoal producers with relatively low incomes from charcoal production will continue with deforestation activities and enhance losses of GDP from deforestation. Alternative 2: Sustainable rotational coppicing and improved kilns will halt deforestation on 15,000 ha project area. The system will limit the amount of charcoal produced per year within a rotational cycle of 18 years to 830,000 sacks of charcoal per year (assuming a rotational cycle of 18 years for 1 ha charcoal production on an area of 15,000 ha and the need for 0.01 ha forest for one sack of charcoal). As the number of charcoal producers will be limited under the sustainable charcoal production system, some charcoal producers will have to look for alternative incomes. On the other hand, through the new kiln technology, incomes per wood unit produced and per labour input will double under *ceteris paribus* conditions, which can be shared accordingly. Alternative incomes will be provided through transfer of briquetting technologies to communities and various types of benefit-sharing.

Costs were determined for small-scale, on-the-ground adaptation measures identified through consultations undertaken with community members as well as other national and sub-national stakeholders. Using a community-based approach to adaptation – while ensuring that development plans are informed by science and local knowledge – empowers vulnerable communities to plan for, and adapt to, the impacts of climate change. Interventions proposed in the project have been selected based on available knowledge of proven or promising adaptation technologies. Furthermore, project activities will be informed by the expertise of relevant GoZ institutions – such as MLNREP – to ensure their suitability to the local context.

In addition, the effectiveness of these activities in reducing vulnerability to climate change will be tested and measured – through socio-economic and cost-benefit analyses – during the course of the project. The most successful activities will be prioritised for up-scaling to neighbouring communities. Furthermore, details regarding their implementation will be widely disseminated at workshops and training events undertaken by the project.

C. DESCRIBE THE BUDGETED M &E PLAN:

The project will be monitored through the following M& E activities.

Project inception

Within the first 2 months of the UNDP-implemented, LDCF-financed project, a project inception workshop will be conducted. Attendees of this workshop will include *inter alia*: i) stakeholders that have assigned roles in the project organization structure; ii) UNDP Country Office (CO); and iii) where appropriate/feasible, UNDP regional technical policy and programme advisors. Importantly, the inception workshop will: i) promote country ownership of the project; and ii) enable planning for the first year (AWP). In addition, this workshop will:

- Promote understanding and ownership among all stakeholders involved in the project;
- Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis-à-vis the project team;
- Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms;
- Validate the TORs for project staff;
- Discuss the AMAT Tracking Tool;
- Finalise the first annual work plan;
- Review and agree on the indicators, targets and their Means of Verification (MoV), and recheck assumptions and risks;
- Provide a detailed overview of reporting and M&E requirements; the M&E work plan and budget should be agreed and scheduled;
- Discuss financial reporting procedures and obligations, and arrangements for annual audit; and
- Plan and schedule PSC meetings.

An inception workshop report will be prepared within the first 12 months and shared with participants to formalise agreements and plans decided during the meeting.

Daily monitoring

Day-to-day monitoring of general project implementation progress will be the responsibility of the Project Manager, based on the project's AWP and its indicators, with overall guidance from the Project Director. The project team will inform the UNDP CO of any delays or difficulties faced during implementation of the proposed LDCF project. In so doing, appropriate support will be provided by UNDP, or corrective measures implemented in a timely and remedial fashion.

Day-to-day monitoring of ANR will be the responsibility of field officers. These officers will coordinate implementation of activities at the selected sites.

Quarterly monitoring

Project Progress Reports (PPRs) will be produced and submitted on a quarter-annual basis based on M&E data in the UNDP Enhanced Results Based Management Platform (ERBMP). Importantly, risk analyses will be logged and regularly updated in ATLAS. In addition, impacts and probabilities of high technical risks that are identified during PPG will be meticulously followed up. Based on the information recorded in Atlas, Project Progress Reports (PPR) will be generated in the Executive Snapshot. Other ATLAS logs will be used to monitor issues and record lessons learned, etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annual monitoring

The Annual Project Review/Project Implementation Report (APR/PIR) will be prepared to monitor progress. This report combines both UNDP and GEF/LDCF reporting requirements. Moreover, it includes – but is not limited to – reporting on the following: i) progress made toward objective and outcome indicators; ii) baseline data and end-of-project targets (cumulative); iii) project outputs delivered per project outcome (annual); iv) lessons learned/good practice; v) AWP and other expenditure reports; vi) risk and adaptive management; and vii) ATLAS QPR. Portfolio-level indicators (i.e. the LDCF AMAT tracking tool) are used on an annual basis as well.

Periodic Monitoring through Site Visits
Representatives from the Forestry Department, the UNDP CO and the UNDP Regional Service Centre (RSC) will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan. These visits will be undertaken to assess project progress, with particular focus on: i) ANR implementation at the field sites; ii) fire management implementation at the community level; iii) designation of fuel wood collection sites; and iv) rotation cycles. Members of the PSC may join these visits. No less than one month after each visit, a Field Visit Report/BTOR will be prepared by the Forestry Department and UNDP RCU and circulated to the project team and PSC members.

Mid-Term of Project Cycle
The Mid-Term Review (MTR) will measure progress made towards outcome targets, and identify a course of correction if required. Importantly, this study will: i) focus on the effectiveness, efficiency and timeliness of project implementation; ii) identify problems requiring decisions and actions; and iii) present initial lessons learned on project design, implementation and management. Findings of this review will be incorporated as recommendations for improved implementation during the final half of the project's term. The organisation, ToR and timing of the mid-term review will be decided after consultation between the organisations involved in implementing the LDCF project. The TOR for this MTE will be prepared by the UNDP CO based on guidance from the Regional Service Centre and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Centre (ERC). The relevant SOF (LDCF) Focal Area Tracking Tool will also be completed during the mid-term review cycle.

End of Project
Terminal Evaluation (TE) will take place three months prior to the final Project Steering Committee meeting in accordance with UNDP and GEF/LDCF guidance. This evaluation will focus on the delivery of the projects results as initially planned, and after the mid-term review. In addition, the TE will measure impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. Moreover, the TE should provide recommendations for follow-up activities.

The Project Terminal Report (PTR) will summarise the results achieved (objectives, outcomes, outputs), lessons learned and problems encountered during implementation of the LDCF project. In addition, this report will include recommendations for further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing
Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyse and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Communications and visibility requirements
Full compliance is required with UNDP's Branding Guidelines. These can be accessed at http://intra.undp.org/coa/branding.shtml, and specific guidelines on UNDP logo use can be accessed at: http://intra.undp.org/branding/useOfLogo.html. Amongst other things, these guidelines describe when and

how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo.

Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

The table below summarises the budgeted M&E plan.

Type of M&E activity	Responsible Parties	Budget US$ Excluding project team staff time	Time frame
ARR/PIR	Project manager and team UNDP CO	None	Annually / Quarterly
Periodic status/ progress reports	Project manager and team	None	Quarterly
Mid-term Report	Project manager and team UNDP CO External Consultants (i.e. evaluation team)	Indicative cost: 40,000	At the mid-point of project implementation.
Final Evaluation	Project manager and team, UNDP CO External Consultants (i.e. evaluation team)	Indicative cost : 40,000	At least three months before the end of project implementation
Project Terminal Report	Project manager and team PC FD UNDP CO local consultant	0	At least three months before the end of the project
Audit	UNDP CO	Indicative cost per	Yearly

	Project manager and team	year: 3,000	
Visits to field sites	UNDP CO PC FD Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US$ 93,000 (+/- 5% of total budget)	

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):): (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Mr. Godwin Fishani GONDWE	Director, Environment and Natural Resources	Ministry of Lands, Natural Resources and Environmental Protection	05/06/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	**Signature**	**Date (MM/dd/yyyy)**	**Project Contact Person**	**Telephone**	**Email Address**
Adriana Dinu, Executive Coordinator, UNDP-GEF		05/14/2015	Robert Kelly, Regional Technical Advisor, UNDP-GEF	+251 91250 3306	Robert.kelly@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: CPAP Focus Area 2: Sustainable Environment and Climate Change					
Country Programme Outcome Indicators: Output 2: Vulnerable communities better equipped when faced with climate change. Output 3: More effective reservation interventions for the environment and ecosystem.					
Primary applicable Key Environment and Sustainable Development Key Result Area: Promote climate change adaptation.					
Applicable SOF (e..g GEF) Strategic Objective and Programme: CCA-1: Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change. CCA-2: Strengthen institutional and technical capacities for effective climate change adaptation.					
Applicable SOF (LDCF) Expected Outcomes: Outcomes 1.1, 1.3 and 2.4					
Applicable SOF (LDCF) Outcome Indicators: Indicators 1, 2, 4 and 10					
	Indicators	**Baseline**	**Targets End of Project**	**Source of verification**	**Assumptions**
Project Objective[28] To promote climate-resilient, community-based regeneration of indigenous forests in Zambia's Central Province, thereby securing ecosystems goods and services and enhancing the adaptive capacity of local communities.	Number of foresters and members of local groups in Central Province participating in climate-resilient, community-based regeneration of indigenous forests. Number of households benefiting from climate-resilient, community-based regeneration of indigenous forests.	0 0	At least 20 foresters and 1,200 members of local groups. At least 3,000 households.	Training reports, capacity scorecards (see source of verification for Outcomes 1 and 2), consultations with forest officers and local communities at project intervention sites in Serenje District. Household surveys at intervention sites at project inception and termination.	*Assumption* District forestry officers and VAGs will apply information disseminated, maps and trainings. Regeneration activities occur in timely fashion; and intervention sites are effectively managed and conserved. *Risk* Encroachment threatens miombo woodlands, thereby undermining project interventions.

[28] *Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR*

Outcome 1[29] Strengthened technical and institutional capacity of foresters and communities in Central Province to implement appropriate climate-resilient agro-forestry and natural regeneration practices in designated zones.	1.1 Change in capacity score of district forestry officers and Village Action Group (VAG) members for planning and implementing Assisted Natural Regeneration (ANR) and agro-forestry interventions (CCA Indicator 10).	**0**	1.1 VAGs and district forestry officers score at least 2.	Verified through scoring scorecard methodologies adapted from AMAT (2014). The indicator is based on five criteria of the capacity assessment framework: • Are the stakeholders able to identify climate change risks and appropriate ANR interventions? • Are the stakeholders specifying targets for these interventions? • Have the institutions clearly defined roles and responsibilities for the coordination and implementation of these interventions? • Is there evidence of effective implementation of these interventions by these stakeholders? • Is there evidence of institutional capacities for the continuous assessment, learning and review of ANR?	*Assumptions* District forestry officers and VAGs will apply information disseminated, maps and trainings. *Risk* Trainings are not prepared/delivered effectively.
	1.2 Climate-resilient agro-forestry and ANR practices implemented across 15,000 hectares (CCA Indicator 2).	**0**	1.2 At least 15,000 hectares of climate-resilient agro-forestry established.	Ongoing monitoring at project intervention sites to record: • Area of climate-resilient agro-forestry practices (using GPS and mapping software); and • Survivorship of agro-forestry species.	*Assumption* Regeneration activities occur in timely fashion; and intervention sites are effectively managed and conserved. *Risk* Encroachment threatens miombo woodlands, thereby undermining project interventions.
Outcome 2 Robust fire monitoring and management protection plans and measures in place in all districts in Central Province to maintain desired	2.1 Change in capacity score of district forestry officers, VAG members and local authorities for planning and implementing fire management	**0**	2.1 VAG members and local authorities score at least 2.	Verified through scoring scorecard methodologies adapted from AMAT (2014). The indicator is based on five criteria of the capacity assessment framework: • Are the stakeholders able to identify climate change risks and appropriate fire management interventions? • Are the stakeholders specifying targets for these interventions? • Have the institutions clearly defined roles and	*Assumption* District forestry officers and VAGs will apply information disseminated, maps and trainings.

[29] *All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.*

regeneration targets and reduce fire frequency by 25-30% annually across the province, within a four-year burning cycle.	interventions (CCA Indicator 10).			responsibilities for the coordination and implementation of these interventions? • Is there evidence of effective implementation of fire management interventions by these stakeholders? • Is there evidence of institutional capacities for the continuous assessment, learning and review of adaptation strategies?	*Risk* Trainings are not prepared/delivered effectively.
	2.2 Change in frequency of fire across all districts in Central Province.	**0**	2.2 Frequency of fires reduced by 25%.	Records of fires across Central Province.	*Assumption* GIS software is applied effectively; information from GIS software is effectively packaged and disseminated to local communities; and updated fire management plans will be applied. *Risks* Non-climate related threats undermine project activities.
Outcome 3 Energy efficient charcoal production and wood-saving technologies have successfully replaced inefficient systems in targeted areas of Central Province, helping offset pressure on the forests as the climate changes.	3.1 Change in number of users of improved charcoal kilns and briquetting machines (CCA Indicator 4).	**0**	3.1 At least: 120 community members using charcoal retort kilns; and 50 community members using charcoal or sawdust briquetting machines. (20% of whom should be women) To be validated during project inception.	Household surveys at intervention sites at project inception and termination; and records of charcoal producer groups established and kilns/briquetting machines distributed.	*Assumptions* Local communities at intervention sites will accept and take ownership of improved kilns and briquetting machines. *Risks* Local communities will not adopt new technologies.

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

The table below summarises the: i) comments made by the GEF Secretariat at PIF stage; and ii) responses to these comments.

Comment	Response
8. By CEO endorsement, however, the adaptation benefits should be described in further detail, and quantified as appropriate. In particular, the final project document and request for CEO Endorsement should demonstrate that the 15,000 hectares benefiting from agro-forestry and ANR investments under Component 1 is selected with a view towards attaining the greatest adaptation benefits for people, livelihoods and natural assets that are most vulnerable in the face of climate change.	The benefits – at a national and local scale – have been described in Section 2.3.3. The project interventions will take place within Central Province. Forests in this area experience high rates of deforestation and degradation. This is a result of increased conversion of forest for agricultural expansion and the production of charcoal. In addition, late forest fires affect the regeneration of forests and often result in tree mortality. The rate of deforestation and forest degradation places communities at risk of the predicted effects of climate change. Communities are dependent on forest resources for their livelihoods. In particular, wood products as well as non-timber forest products provide a range of ecosystem goods and services that underpin rural livelihoods. Charcoal production constitutes a large proportion of the income of community members. Climate change is expected to result in increased frequency of climate-induced disasters such as drought, floods and forest fires. Such climate hazards will reduce the sustainability and profitability of community livelihoods. At the same time, these climate hazards will negatively affect ecosystem integrity and functioning in miombo woodland, thereby exacerbating current rates of deforestation and forest degradation. Under future climate scenarios, communities will rely even more heavily on ecosystem goods and services from miombo woodlands. This is a maladaptive response, as the forest resources will not be able to regenerate at a rate sufficient to maintain current levels of income in the face of future climate change. A positive adaptive response will necessitate a reduction in rates of deforestation and forest degradation to secure continued provision of ecosystem goods and services. (See Sections 2.1 and 2.4 of the Project Document for a more complete diagnosis of the problem and alternative scenario proposed under this project.) Within Central Province, Local Forest Reserves (~594,000 ha) and National Forest Reserves (~371,000 ha) are negatively affected by the encroachment of local communities for settlement and agricultural activities, as well as charcoal production. Serenje District in Central Province has been selected as the area in which these interventions will be implemented (see Section 2.3.4 in the Project Document for a description of the site selection process). Approximately 86% of the Serenje District's protected areas – including National and Local Forest Reserves – are encroached and there are no forest management plans at the district level. In addition, the district forest office is constrained by inadequate: i) staff to effectively manage the forest estate; and ii) operational budget to execute its functions effectively. Furthermore, there have been no previous interventions within Serenje District aimed at promoting sustainable charcoal production and utilisation techniques or alternative energy sources. Without improved planning and implementation of climate-resilient interventions aimed at protecting and managing miombo woodlands for more sustainable extraction of forest resources, climate change will increase current levels of poverty and hardship amongst local communities in Serenje District. This is likely to prevent the achievement of national development objectives in Zambia.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[30]

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: US$ 100,000			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF/NPIF Amount ($)***		
	Budgeted Amount	***Amount Spent To Date***	***Amount Committed***
Baseline Assessment	48,000	48,000	
Stakeholder Consultations	14,500	14,500	
Drafting FSP Document	37,500	17,300	20,200
Approval of FSP Document			
Total	100,000	79,800	20,200

[30] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue 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.

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