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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT AND

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR12.6 MILLION
(US$17.0 MILLION EQUIVALENT)

AND A PROPOSED GLOBAL ENVIRONMENT FACILITY GRANT

IN THE AMOUNT OF US$8.05 MILLION

TO THE

REPUBLIC OF ZAMBIA

FOR AN

ZAMBIA INTEGRATED FOREST LANDSCAPE PROJECT

APRIL 13, 2017

Agriculture and Environment and Natural Resources Global Practices
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2017)

Currency Unit =	ZMW
ZMW9.73 =	US$1
US$0.74 =	SDR 1

FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

7NDP	Seventh National Development Plan
ADC	Area Development Committee
AWPB	Annual Work Plan and Budget
BioCF	BioCarbon Fund
BoZ	Bank of Zambia
BP	Bank Procedures
CA	Conservation Agriculture
CASU	Conservation Agriculture Scaling Up
CBO	Community Based Organization
CCA	Community Conservation Area
CFM	Community Forest Management
CFMG	Community Forest Management Group
CGIAR	Consultative Group for International Agriculture Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMACO	Community Markets for Conservation
COMPACI	Competative African Cotton Initiative
CPS	Country Partnership Strategy
CQS	Selection Based on the Consultant's Qualifications
CSA	Climate-smart Agriculture
CRB	Community Resource Board
CSO	Civil Society Organization
DA	Designated Account
DDP	District Development Plan
DIS	District Information System
DNPW	Department of National Parks and Wildlife
DP	Development Partner
DSA	District Situation Analysis
EFA	Economic and Financial Analysis
EP	Eastern Province
EPPA	Eastern Province Provincial Administration
ERPA	Emission Reduction Purchase Agreement
ESMF	Environmental and Social Management Framework

EX-ACT	Ex-Ante Carbon Balance Tool
FAO	Food and Agriculture Organization
FD	Forestry Department
FM	Financial Management
FMNR	Farmer-Managed Natural Tree Regeneration
FREL	Forest Reference Emission Level
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	German Agency for International Cooperation (*Deutsche Gesellschaft fur Internationale Zusammenarbeit*)
GMA	Game Management Area
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GRZ	Government of the Republic of Zambia
GWP	Global Wildlife Program
Ha	Hectare
HWC	Human Wildlife Conflict
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICCS	Interim Climate Change Secretariat
IDA	International Development Association
IDDP	Integrated District Development Plans
IDSP	Irrigation Development Support Project
IFC	International Finance Corporation
IFMIS	Integrated Financial Management Information System
IITA	International Institute of Tropical Agriculture
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
IS	Implementation Support
ISFL	Initiative for Sustainable Forest Landscapes
ISFM	Integrated Soil Fertility Management
IUCN	International Union for Conservation
JFM	Joint Forest Management
KfW	*Kreditanstalt für Wiederaufbau*
LCD	Low Carbon Development
LNP	Lukusuzi National Park
LRP	Livelihoods Restoration Plan
M&E	Monitoring and Evaluation
MAL	Ministry of Agriculture and Livestock
MDA	Ministry, Department, and Agency
METT	Management Effectiveness Tracking Tool
MAZA	Malawi/Zambia Transfrontier Conservation Area
MIS	Management Information System
MLNR	Ministry of Lands and Natural Resources
MNDP	Ministry of National Development Planning
MoF	Ministry of Finance
MoU	Memorandum of Understanding

MRV	Measurement, Reporting, and Verification
MTR	Midterm Review
NAMA	Nationally Appropriate Mitigation Action
NCB	National Competitive Bidding
NDC	Nationally Determined Contribution
NGO	Nongovernmental Organization
NPSC	National Project Steering Committee
NPU	National Project Unit
NPV	Net Present Value
NRM	Natural Resource Management
NTAC	National Technical Advisory Committee
OP	Operational Policy
PDO	Project Development Objective
PF	Process Framework
PFAP	Provincial Forestry Action Program
PIM	Project Implementation Manual
PMP	Pest Management Plan
PPCR	Pilot Program for Climate Resilience
PPIU	Provincial Project Implementation Unit
PPM	Provincial Project Manager
PPSC	Provincial Planning Subcommittee
P-RAMS	Procurement Risk Assessment
PS	Permanent Secretary
QCBS	Quality- and Cost-Based Selection
R-SNDP	Revised Sixth National Development Plan
RBP	Results-based Payment
REDD+	Reducing Emissions from Deforestation and Forest Degradation, sustainable management of forests, conservation of forest carbon stocks and enhancement of forest carbon stocks
RPF	Resettlement Policy Framework
SADC	Souther African Development Community
SCC	Social Cost of Carbon
SDR	Special Drawing Rights
SESA	Social and Environmental Safeguards Assessment
SG	Surveyor General
SIS	Safeguards Information System
SoE	Statement of Expenditure
SORT	Systematic Operations Risk Rating Tool
SSS	Single-source Selection
TA	Technical Assistance
tCO_2e	Tons of Carbon Dioxide Equivalent
TFCA	Transfrontier Conservation Area
TOR	Terms of Reference
TTL	Task Team Leader
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Programme on Reducing Emissions from

	Deforestation and Forest Degradation
WP	With-project
WOP	Without-project
USAID	U.S. Agency for International Development
ZARI	Zambia Agricultural Research Institute
ZEMA	Zambia Environmental Management Agency
ZIFLP	Zambia Integrated Forest Landscape Project
ZILMIS	Zambia Integrated Land Management Information System
ZMW	Zambian Kwacha
ZPPA	Zambia Public Procurement Authority

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Task Team Leader(s):	Ademola Braimoh, Douglas J. Graham, Neeta Hooda

BASIC INFORMATION

Is this a regionally tagged project?	Country(ies)	Lending Instrument
No		Investment Project Financing

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
04-May-2017	31-Aug-2022	B - Partial Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

To improve landscape management and increase environmental and economic benefits for targeted rural communities in the Eastern Province and to improve the Recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency.

Components

Component Name	Cost (US$, millions)
1. Enabling environment	6.35
2. Livelihood and low-carbon investments	23.30
3. Project management	3.15
4. Contingent emergency response	0.00

Organizations

Borrower :	Ministry of Finance
Implementing Agency :	Interim Climate Change Secretariat

[✓] Counterpart Funding	[ ] IBRD	[✓] IDA Credit [ ] Crisis Response Window [ ] Regional Projects Window	[ ] IDA Grant [ ] Crisis Response Window [ ] Regional Projects Window	[✓] Trust Funds	[ ] Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
32.80	32.80	0.00
	Of Which Bank Financing (IBRD/IDA): 17.00	

Financing (in US$, millions)

Financing Source	Amount
BioCarbon Technical Assistance Trust Fund	7.75
Borrower	0.00
Global Environment Facility (GEF)	8.05
International Development Association (IDA)	17.00
Total	**32.80**

Expected Disbursements (in US$, millions)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023

Annual	0.00	2.60	6.73	10.93	9.64	2.45	0.44
Cumulative	0.00	2.60	9.33	20.27	29.91	32.36	32.80

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Climate Change
Environment & Natural Resources

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial

4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Substantial
9. Other	
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Conditions

Type	Description
Effectiveness	(a) The establishment of the National Project Unit and the Provincial Project Implementation Unit - Financing Agreement Clause 4.01(b) and Grant Agreements Clauses 5.01(c)). (b) The adoption by the Recipient of a Project Implementation Manual - Financing Agreement Clause 4.01(c) and Grant Agreements Clauses 5.01(d)). (c) The execution and delivery of the co-financing agreements [IDA Credit, GEF Grant and BioCF Grant] and the fulfillment of all conditions precedent to effectiveness or to the right of the Recipient to make withdrawals under it - Financing Agreement Clause 4.01(a) and Grant Agreements Clauses 5.01(b). (d) The authorization or ratification by all necessary governmental action of the execution and delivery of the Grant Agreements on behalf of the Recipient - Grant Agreements Clauses 5.01(a)

Type	Description
Disbursement	Withdrawal Conditions (Contingent Emergency Response)(Section IV, Schedule 2 Financing Agreement) (i) The Recipient has determined that an Eligible Crisis or Emergency has occurred, has furnished to the Association a request to include said activities in the IRM Part in order to respond to said Eligible Crisis or Emergency, and the Association has agreed with such determination, accepted said request and notified the Recipient thereof; (ii) The Recipient has prepared and disclosed all Safeguards Instruments required for said activities, and the Recipient has implemented any actions which are required to be taken under said instruments; (iii) The Recipient's Coordinating Authority has adequate staff and resources for the purposes of said activities; and (iv) The Recipient has adopted an IRM Operations Manual in form, substance and manner acceptable to the Association and the provisions of the IRM Operations Manual remain - or have been updated so as to be - appropriate for the inclusion and implementation of said activities under the IRM Part.

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
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Extended Team

Name	Title	Organization	Location

ZAMBIA
ZAMBIA INTEGRATED FOREST LANDSCAPE PROJECT

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I. STRATEGIC CONTEXT

A. Country Context

1. **Zambia is a lower-middle-income country with close to 16 million inhabitants.** It had a gross domestic product (GDP) of US$27.1 billion in 2015, equating to a per capita income of about US$1,300. Zambia has made significant socioeconomic progress over the past two decades and achieved average growth of 6.3 percent between 2004 and 2014. However, since mid-2015, economic growth has slowed down considerably to 2.9 percent in 2015 and a forecasted 3.0 percent in 2016, as external headwinds and domestic pressures have intensified.

2. **In 2015, global economic conditions for growth deteriorated and the price of copper (typically 77 percent of Zambia's exports) fell further from its 2011 peak.** This has put downward pressure on revenues, widening the fiscal deficit, and reduced the value of exports, opening up a trade deficit. In addition, Zambia experienced domestic pressures in the form of (a) repeated fiscal deficits (reducing confidence in the economy); (b) reduced and delayed rainfall in 2015 (undermining agricultural incomes and lowering the water level in reservoirs); and (c) increased power outages. Further, the strengthening of the U.S. dollar in 2015 put pressure on the Zambian kwacha that combined with lower confidence resulted in the local currency losing 41 percent of its value against the U.S. dollar.

3. **Close to the end of 2015, the Government acted vigorously to contain the impact of ebbing confidence with monetary policy measures.** These measures restored the stability of the kwacha, which appreciated by 11.2 percent in the first nine months of 2016, and helped curb inflation from its peak of 22.9 percent in February 2016 to 8.8 percent in November 2016. However, fiscal policy remained loose in 2016 and monetary policy has had to remain very tight, reducing liquidity, putting pressure on the financial sector, and causing a drag on growth.

4. **The August 2016 elections went in favor of the incumbent President and political party.** After five elections in ten years, the constitutional changes[1] mean that a full five-year term is expected to be served, raising cautious optimism about the political space for reform in 2017 and over the medium term. The Government has presented its economic recovery plan, "Zambia Plus", which provides a framework for restoring fiscal sustainability, closing the twindeficits (fiscal and trade) and ensuring that structural reforms are carried out to boost the non-copper economy. The Government has requested the support of the World Bank, International Monetary Fund, and other partners to make it a success. GDP growth is forecast to rise to 4.0 percent in 2017 and 4.2 percent in 2018. The forecasts are subject to upside and downside risks, but the return of investor confidence in the fourth quarter of 2016 (evidenced by oversubscribed bond auctions), bold measures by the Government (including the removal of fuel subsidies), and a rally in copper prices (November 2016), suggest that economic circumstances are improving.

[1] The changes require that presidential hopefuls select a running mate who will be their vice president and take over in the case of a leader's death. That avoids the need for early elections that were held after the deaths of two sitting Zambian presidents in less than five years.

5. **The rapid and sustained growth achieved from the early 2000s to 2014 was insufficiently inclusive, and, despite the economy doubling in size, poverty remains widespread.** Based on the 2015 Living Conditions Monitoring Survey Report of the Government's Central Statistical Office, an estimated 54.4 percent of Zambians live in extreme poverty (below US$1.90 per day, purchasing power parity terms) and poverty is higher among women. Rural poverty (at 76.6 percent) is more than three times the 23.4 percent rate of urban poverty. The benefits of growth have accrued mainly to those already above the poverty line, inequality has remained high, and efforts are needed to not only restore the economy to faster growth, but also ensure planned pro-poor policies are implemented and growth that is more inclusive follows.

B. Sectoral and Institutional Context

6. **In Zambia's Eastern Province (EP), the majority of the province's 1.7 million people live in rural areas with livelihoods dependent on natural resources.** This means that in Eastern Province this rural population is characterized by high levels of poverty and addressing this challenge is the highest priority of the provincial administration. According to the World Bank's Mapping Subnational Poverty in Zambia report, the EP is one of three poorest provinces in Zambia.[2] In addition, according to the Living Conditions and Monitoring Survey (2015), at 70 percent, the EP had one of the highest proportion of population that was poor. The Zambian diet is mainly composed of cereals, predominantly maize, starchy roots, and, to a lesser extent, fruit and vegetables. Cereals provide almost two-thirds of the dietary energy supply. According to the 2013–14 Zambia Demographic and Health Survey, the nutrition indicators for the EP stand at 43 percent for children under five who are stunted and 20 percent of the women are overweight or obese. Women and children are the most vulnerable to the problems related to nutrition because of their socioeconomic characteristics.

7. **Compounding the challenges of rural development in the EP is a changing climate, which models suggest will continue to change dramatically over the coming decades.** The country is already experiencing climate-induced hazards. Droughts and floods have increased in frequency and intensity over the past few decades and have adversely affected food and water security, water quality, energy generation, and livelihoods of people, especially in rural communities. Recent climate trends based on records from 1960 to 2003 indicate that the mean annual temperature increased by 1.3°C, an average rate of 0.34°C per decade. Mean rainfall in Zambia has decreased by an average rate of 1.9 mm per month (2.3 percent) per decade since 1960. The future trends in the country are toward a higher average temperature, a possible decrease in total rainfall, and some indication of more intense rainfall events. Zambia's Nationally Determined Contribution (NDC) report to the United Nations Framework Convention on Climate Change (UNFCCC) has estimated national GDP loss due to climate change over a 10–20-year midterm planning horizon will be in the range of US$4,330–5,440 million with the following sector GDP losses: agriculture (US$2,200–3,130 million), energy-related (US$270–450 million), health (US$460 million), and natural resources (US$1,400 million).

8. **In addition to being subject to the impacts of climate change, Zambia contributes to global carbon emissions.** According to the Second National Communication, the latest data available from the UNFCCC, annual greenhouse gas (GHG) emissions in Zambia have increased by 6.2 percent from 51.52

[2] World Bank Group. 2015. *Mapping Subnational Poverty in Zambia.*

million tons of carbon dioxide equivalent (tCO_2e) in 1994 to 54.72 million tCO_2e in 2000. The largest contribution to GHG emissions in 2000 came from land use change and forestry, which accounted for 73.7 percent, followed by agriculture at 18.9 percent. Emissions from land use change and forestry are expected to increase to 100 million tCO_2e by 2030 largely due to increase in deforestation.

9. **The Government of the EP's vision statement is "to improve rural livelihoods in Eastern Province by reducing deforestation and forest degradation using a low emission pathway through local community participation by 2030."** To address the challenges associated with the drivers of deforestation, local communities' participation and commitments, and private sector involvement will be critical in optimizing natural resource management (NRM) at both communal and individual farmer levels. According to the vision, the targets for reducing drivers of deforestation include: reducing the total annual area burnt from 16.7 percent to 5.0 percent by 2036 through forest fire management; establishment of a minimum of 3,000 ha of plantations on deforested land by 2037; promoting ecotourism with community participation to combat poaching; and promoting soil fertility improvement, good agricultural practices, and land use planning among 40 percent of the farmers in the province. These actions will also help tackle food security and poverty at the local level. The estimated financing investment to achieve these goals is US$140 million, part of which will be leveraging private sector investments and a significant part of which will be mobilization of additional financing for institutional strengthening and implementation of activities. The Zambia Integrated Forest Landscape Project (ZIFLP) will contribute toward supporting activities for addressing the drivers of deforestation as stated in the vision.

10. **Institutionally, responsibilities for coordination of the national climate agenda falls to the Interim Climate Change Secretariat (ICCS), under the Ministry of National Development Planning (MNDP).** The ICCS ensures coordination with the many other ministries and organizations that need to be engaged in a landscape-level livelihoods/climate change initiative such as this project. Responsibility for implementing projects is often with the line ministries. The Eastern Province provincial administration (EPPA) exercises considerable control over activities in its jurisdiction, consistent with the recently adopted decentralization law of Zambia.

C. Higher Level Objectives to which the Project Contributes

11. **Revised Sixth National Development Plan (R-SNDP).** In October 2014, the Government of the Republic of Zambia (GRZ) launched the R-SNDP. The R-SNDP emphasizes sustained economic growth, economic diversification, promotion of rural investments, and accelerated poverty reduction. It promotes sustainable land management, harmonization of sector policies and legislation, strengthening the enforcement of environmental regulations, and strengthening of extension and management capacity at national, province, district, and community levels to manage natural resources sustainably. The plan also underlined the prioritization of women's empowerment and gender mainstreaming in the development process. The ZIFLP is in line with the R-SNDP as it will support the promotion of an enabling environment for NRM and major investments to move forward this agenda in the EP. The Government has begun drafting the Seventh National Development Plan (7NDP), expected to enhance what the R-SNDP has addressed. The Seventh Plan aims at reducing poverty and creating employment, and it will support implementation of projects in a holistic and integrated manner. The design of the ZIFLP considers a holistic and integrated approach for implementation, consistent with the Government's forthcoming Seventh Plan.

12. **National REDD+ Strategy.** The GRZ is currently supporting a National REDD+ Readiness process, which includes the development of a National REDD+ strategy to provide a national vision on strategic options, actions, and responses to support REDD+ in Zambia. Among other outcomes, the strategy provides overall guidance on actions to be undertaken in key sectors such as agriculture, energy, and land use more broadly, as well as guidance on thematic and core design issues such as incentive payments, financing, benefit sharing, safeguards, carbon rights, conflict management, measurement, reporting, and verification (MRV) systems, and reference emission levels/reference levels, among others. A technical assistance (TA) program funded by the Forest Investment Program and administered through the World Bank, is currently ongoing to prepare the Investment Plan for the National REDD+ Strategy, jointly with other donors such as the United Nations (UN) agencies, and is complementary to ZIFLP. The ZIFLP fully aligns with Zambia's National REDD+ Strategy.

13. **Nationally Determined Contribution (NDC).** In December 2015, Zambia made a declaration to the UNFCCC that it intends to achieve a 25 percent emissions reduction (20,000 tCO_2e) with limited international financial support by 2030, but which could be a 47 percent emissions reduction (38,000 tCO_2e) with substantial international financial support (roughly defined as US$35 billion). For both scenarios, the GRZ plans to achieve the vast majority of its emissions reductions from sustainable land use and forestry management. Zambia intends to reduce its CO_2e emissions by implementing three programs driven by the country's Climate Response Strategy and supported by national development policies including energy, forestry, agriculture, water, town and country planning, sanitation, and transport. The three programs are (a) Sustainable Forest Management, (b) Sustainable Agriculture, and (c) Renewable Energy and Energy Efficiency. The ZIFLP will help pilot each of these areas and help prepare Zambia to meet its NDC. Emissions that are not credited through the REDD+ mechanism will be considered a contribution toward Zambia's NDC. Further, the NDC programs will be fully developed based on Zambia's plans and actions and supported by various climate-related activities such as REDD+, Nationally Appropriate Mitigation Actions (NAMAs), and Technology Needs Assessments. Thus, the ZIFLP's experience with REDD+ interventions and identification of NAMAs and investment needs in technology will ultimately help Zambia develop the three fundamental programs of the NDC.

14. **Initiative for Sustainable Forest Landscapes (ISFL).** The ISFL of the BioCarbon Fund (BioCF)[3], currently collaborating with four developing countries[4], seeks to reduce emissions from the land sector through smarter land use planning, policies, and practices. These catalytic efforts can reduce millions of tons of emissions but, just as importantly, the investments and capacity built can improve livelihoods, reduce poverty, and contribute to the sustainability of national economies. The ISFL seeks to promote reduced GHG emissions from the land sector, from deforestation and forest degradation (REDD+), and from sustainable agriculture, as well as to promote smarter land use planning, policies, and practices. Operating at the scale of the jurisdictional landscape is considered one of the key design features of the ISFL. National or jurisdictional governments need to consider the trade-offs and synergies between different land uses that may compete in a jurisdiction—such as agriculture, energy, and forest protection—and successfully identify integrated solutions that serve multiple objectives. Adopting a landscape approach means implementing a development strategy that is climate-smart, equitable,

[3] The ZIFLP is partially funded from the BioCF ISFL. The legal name of the trust fund providing the support is the BioCF*plus*-ISFL but for simplicity, the funding source is referred to in this document as the BioCF ISFL.
[4] Colombia, Ethiopia, Indonesia, and Zambia

productive, and profitable at scale and strives for environmental, social, and economic impact. The ZIFLP's engagement of the private sector in landscape conservation is another key design feature that sets the ISFL apart from other climate and forest initiatives.

15. **The project also responds to the strategic objectives of the Global Environment Facility (GEF).** These are discussed in more detail in annex 4.

16. **The World Bank's Zambia Country Partnership Strategy (CPS) for FY13 to FY16 (extended to 2017) puts forward an integrated World Bank Group strategic plan--International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency—for supporting Zambia's development.** The CPS also reflects the principles agreed by the Cooperating Partners as articulated in the Second Joint Assistance Strategy for Zambia for 2011 to 2015. The project contributes to CPS Objective 1 (Reducing poverty and vulnerability of the poor) as it relates to Outcome 1.1 (Improved animal and crop productivity in selected areas) and Outcome 1.2 (Improved access to resources for strengthening household resilience and health in targeted areas). The project will also contribute to CPS Objective 2 (Improving competitiveness and infrastructure for growth and employment) as it relates to Outcome 2.2 (Selected infrastructure built and rehabilitated) and Outcome 2.3 (Improved access to finance for small enterprises through its collaboration with IFC). The CPS also seeks to increase attention to monitoring and evaluation (M&E) frameworks and improve integration of gender in analytical and advisory activities (including analytical work to inform project design). The proposed project is also in line with the Bank's Forest Action Plan and Climate Change Action Plan.

17. **The proposed project will contribute to the World Bank's corporate twin goals of ending extreme poverty and boosting shared prosperity.** Most of Zambia's rural population in the Eastern Province depends on agriculture and forests and their ecosystem services. Forests also play a key role as a safety net for vulnerable and marginalized people, an alternative source of income during low-harvest seasons, and provide non-timber forest products like charcoal and firewood. Supporting the forest sector thus targets the poorest populations in the country. Creating enabling policy, legal, and institutional conditions for community-based forest management will also have a direct impact on shared prosperity as it will give local communities concrete opportunities to manage and derive economic benefits from sustainable forest management and conservation.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

18. **The Project Development Objective (PDO) is** "to improve landscape management and increase environmental and economic benefits for targeted rural communities in the Eastern Province and to improve the Recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency". The benefits the project intends to generate are both economic and those that would result from improved capacity to manage natural resources and climate resilience.

B. Project Beneficiaries

19. **The ZIFLP's key beneficiaries are people in rural communities of the EP.** These communities are most directly dependent on agriculture and forest resources for livelihoods and the most vulnerable to

climate change. More specifically, the key beneficiaries are people in rural communities located in the province's nine districts—Chipata, Lundazi, Mambwe, Petauke, Katete, Sinda, Chidazi, Vubwi, Nyimba. Project benefits include goods, services, small works, and training that would: (a) improve forest management and empower communities to participate in such management; (b) improve agricultural productivity and resilience resulting from adoption of climate-smart agriculture (CSA) practices; (c) improve livelihoods by creating opportunities for jobs and through access to forest products; (d) improve capacities to better manage landscapes and land rights for multiple benefits; and (e) help secure ecosystem services and enhance resilience from intact biodiversity. An estimated 214,955 persons will directly benefit from the project's investments. It is intended that at least 30 percent of the beneficiaries will be female.

20. **Communities that are adjacent to protected areas, especially around Lukusuzi National Park (LNP), are targeted beneficiaries.** The globally important biodiversity of LNP and surrounding areas will benefit from accrued protection and management. The benefits of reduced carbon emissions, under this project and expected in the future as the result of enabling activities supported by ZIFLP, accrue globally and help the country meet its NDC obligations under the UNFCCC.

21. **The governments at the national, provincial, district, and local levels will benefit from a variety of capacity-strengthening activities that will emphasize multisector coordination and planning.** Finally, the project's focus on facilitating the role of the private sector as a vehicle for both rural development and emissions reductions, benefits local communities and also the private sector itself.

C. PDO-Level Results Indicators

22. **The achievement of the PDO will be measured using the following indicators.** The Results Framework presents the project outcome and intermediate indicators.

(a) Forest area under sustainable management practices (ha);

(b) Agricultural area under climate-smart agricultural practices (ha);

(c) Crop yield increase for selected crops (percentage); and

(d) People in targeted communities with increased monetary and non-monetary benefits (percentage share of which women).

III. PROJECT DESCRIPTION

A. Project Components

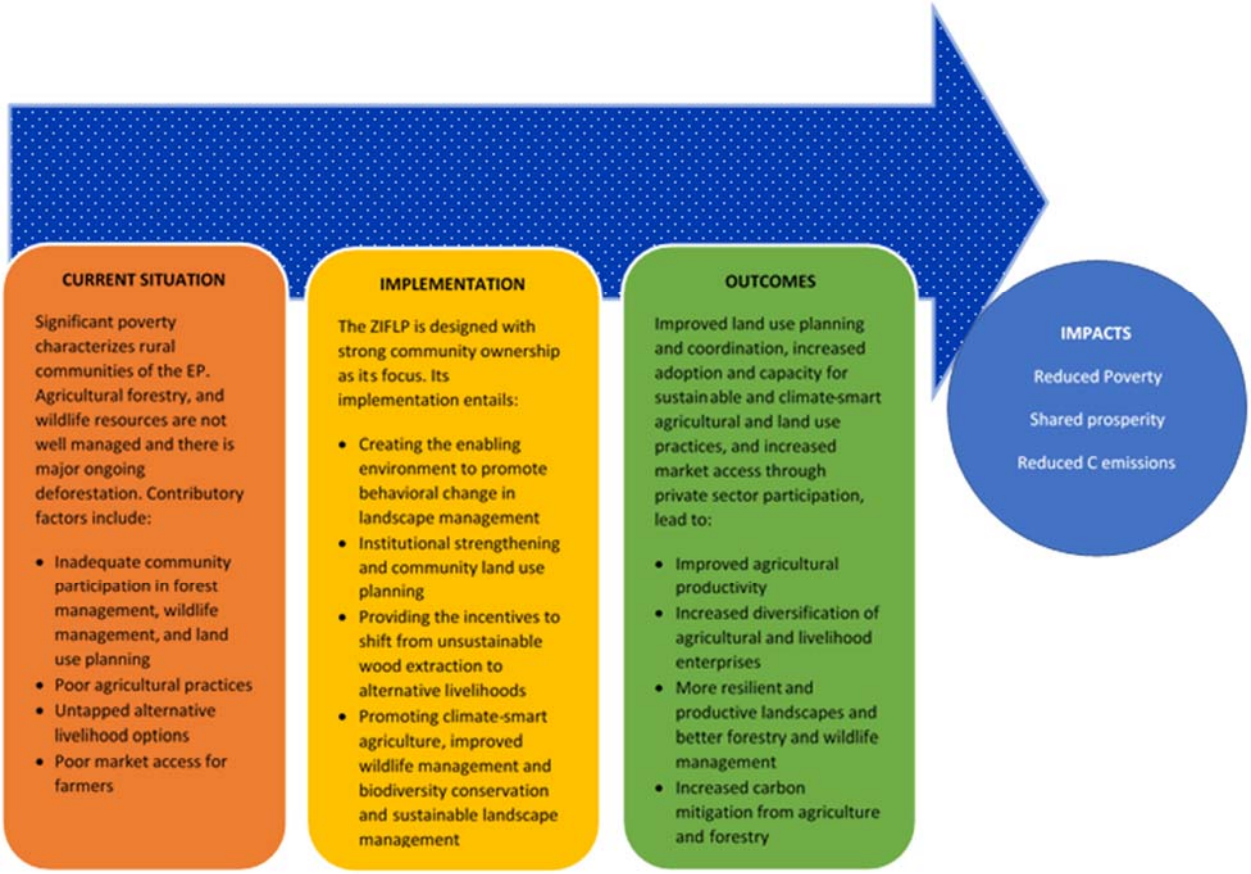
23. **The project aims to provide support to rural communities in the EP to allow them to better manage the resources of their landscapes so as to reduce deforestation and unsustainable agricultural expansion; enhance benefits they receive from forestry, agriculture, and wildlife; and reduce their vulnerability to climate change.** The project must also invest in ensuring that enabling conditions are in place for these changes to happen—conditions such as tenure security, planning at different spatial scales, and capacity development. Simultaneously the project will create the enabling environment for emission

reduction purchases, to be done through a subsequent project.

24. **Figure 1 presents the project's theory of change.** Under the current situation, many communities of the EP are locked into a cycle of poverty and resource degradation. Forests and ecosystem services continue to be lost; GHG emissions are significant due to deforestation, forest degradation, and encroachment of protected areas; and habitat fragmentation continues apace. Unless the value of wildlife and forests is increased and captured by local people, these resources will continue to be degraded through neglect, inefficient or illegal use, or replacement by low-value land use options. Reliance on low-value commodity production and unsustainable land use practices make people particularly vulnerable to climate change.

25. **The ZIFLP will promote the adoption of sustainable landscape management practices and CSA as an alternative.** Community empowerment, strengthening local and traditional governance, and land use planning are the key to integrating and optimizing multiple land uses within the landscape. However, collective action is unlikely in the absence of rights to use, benefit from, and protect natural resources. Opportunities for transforming the system will include village land use plans, improved governance, matching land use with land characteristics, and poverty reduction outcomes including emission reduction payments. This will require strong monitoring systems for livelihoods/economics, governance, the implementation of land use plans, and resources monitoring and protection.

Figure 1. Theory of Change



26. **The ZIFLP will finance activities under four components over a five-year period using funds from the BioCF ISFL (US$7.75 million), GEF (US$8.05 million)[5], and IDA (US$17.0 million).** The project components are (a) Enabling environment (US$6.35 million), (b) Livelihood and low-carbon investments (US$23.3 million), (c) Project management (US$3.15 million) and (d) Contingent emergency response, which has a zero budget, included in the event funds need to be reallocated for an eligible emergency.

Component 1: Enabling environment (US$6.35 million, all BioCF ISFL)

27. **This first component will create conditions that will allow the livelihood investments of Component 2 to be successfully implemented and that will prepare the country for emission reductions purchases.** The component will include support for two subcomponents (a) District and local level planning, which will support integrated district development and local planning including land use and action planning through participatory processes; and (b) Emissions reductions framework, which will help establish the instruments including the Strategic Environmental and Social Assessment, the benefit

[5] The exact amount of the GEF grant is $US8,050,048. The GRZ also confirms in-kind co-financing of US$5 million for the GEF part.

sharing plan, and the Reference Emission Level for the Eastern Province needed for a future Emission Reduction Purchase Agreement (ERPA). Enabling environment interventions will be financed through grant support from the BioCF ISFL.

Component 2: Livelihood and low-carbon investments (Total Cost: US$23.30 million: IDA SDR 10.4 million (US$14.1 million equivalent), BioCF ISFL US$1.15 million, GEF US$8.05 million)

28. **Component 2 will finance on-the-ground activities that improve rural livelihoods, conserve ecosystems and reduce GHG emissions.** It has two subcomponents: Agriculture and forestry management and Wildlife management. These activities will be financed by IDA, BioCF ISFL, and GEF resources. Although the subcomponents are sectoral in nature, the cross-sectoral and landscape approach of the planning activities that will underlie the activities will ensure a landscape approach is retained.

Subcomponent 2.1: Agriculture and forestry management (Total cost: US$18.40 million: IDA SDR 8.8 million (US$11.9 million equivalent), BioCF ISFL US$1.15 million, GEF US$5.35 million)

29. **The objective of this subcomponent is to provide financing for interventions that increase agricultural productivity, enhance agro and forest ecosystem resilience, reduce GHG emissions, and sequester carbon using a landscape approach.** This subcomponent will cover the following activities: (a) scaling up of CSA practices; (b) community forestry management; and (c) land tenure and resource rights regularization, a pre-condition for the adoption of improved agriculture and forestry management.

30. **CSA**. Interventions under CSA will apply a train-the-trainers approach to introduce (a) conservation agriculture (CA) practices and integrated soil fertility management (ISFM), (b) agroforestry, and (c) enhanced market access for smallholders and private sector engagement. In addition, the project will support community grants for livelihood interventions, including CSA and small ruminants or poultry, and for supporting market access through agro-processing. Interventions will aim at enhancing the income and livelihood of the communities and farmer families through income-generating and value-added activities in the EP. The interventions are further described in annex 1.

31. **Community forestry management**. The objective of forestry management is to assist local communities and their organizations to improve the management and conservation of their natural resources, create income opportunities, and generate carbon benefits. This will be accomplished by developing and implementing participatory land and resource use planning and management—including fire control and prevention—and providing specialized TA and training to identify viable investments from the sustainable production of timber and not-timber forest products. Activities to be supported will be consistent with the land and resource use plans developed at the village and district levels. The subcomponent will finance specialized technical and extensions services, small works and equipment, operational costs, and non-consultant services (for example, workshops and study tours).

32. **Regularization of land and resource rights.** The subcomponent will provide analytical and TA support to expand past and ongoing efforts at documenting land rights that could underpin adoption of sustainable low-carbon land management practices and private sector engagement. Activities will feed into the National Land Titling Program and will comprise (a) developing cost-effective systems to sustainably manage information on land rights and linking it to land use; (b) identifying new possibilities

of private sector engagement based on an assessment of the extent and impact of existing arrangements; (c) documenting different types of land rights in ways that are supported by local stakeholders and provide incentives for adoption of CSA, sustainable land use, and intensification; and (d) linking land rights to key parameters of land use (crop cover, soil moisture, and soil carbon) using remotely sensed imagery.

Subcomponent 2.2: Wildlife management (Total cost US$4.9 million: IDA SDR 1.62 million (US$2.2 million equivalent), GEF US$2.7 million)

33. This subcomponent will have three major focus areas:

(a) **Support for the national protected area system.** The ZIFLP will contribute resources to several specific initiatives at a national level to help ensure more sustainability for the EP protected area investments by strengthening the overall system. These investments will help strengthen the protected area system and the development of more sustainable wildlife-based national tourism.

(b) **Community management of wildlife.** Under this part of the project, the ZIFLP seeks to promote practices which will maximize opportunities for rural communities from adjacent wildlife resources and which will be positive for biodiversity conservation.

(c) **Management of protected areas, with a focus on two key protected areas of the EP.** This includes LNP and Luambe National Park.

Component 3. Project management (Total cost US$3.15 million, SDR 2.14 million (US$2.9 million equivalent) IDA, US$0.25 million BioCF ISFL)

34. **This component will finance activities related to national- and provincial-level project coordination and management,** including annual work planning and budgeting; fiduciary aspects (financial management [FM] and procurement); human resource management; safeguards compliance monitoring; M&E and impact assessment studies; and communication strategy and citizen engagement. There are two subcomponents, one for the National Project Unit (NPU) and one for the Provincial Project Implementation Unit (PPIU).

Component 4: Contingent emergency response

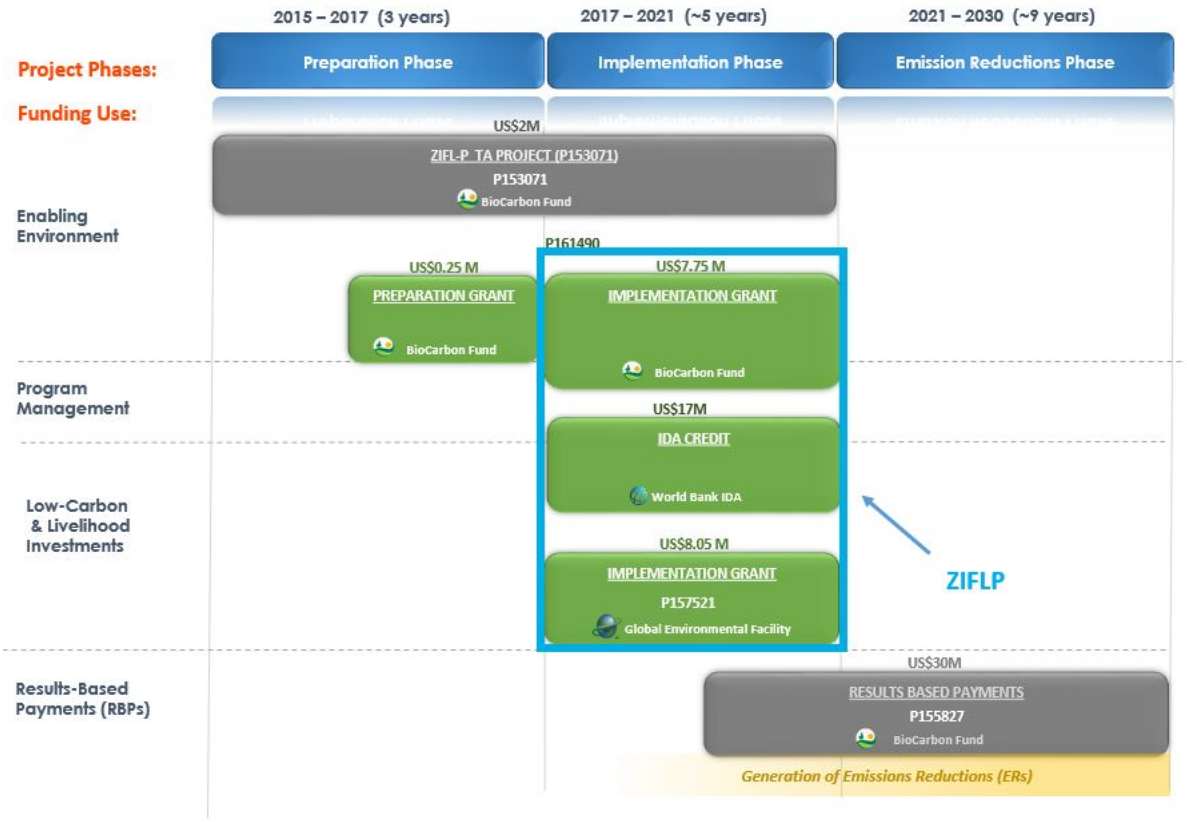
35. **This is a zero budget component which is included to facilitate the use of IDA funds in the event of a disaster** and to be able to respond quickly to a potential Government request to reallocate some funding from existing World Bank projects to provide emergency relief.

B. Project Cost and Financing

36. **The ZIFLP fits within a longer-term program and vision of the GRZ.** It can be considered as constituting three phases (see Figure 2). In the project preparation phase, the GRZ and World Bank undertook a series of activities such as studies to inform project design. These have been financed by a World Bank-executed Trust Fund, BioCF ISFL, of US$2 million (Zambia Integrated Forest Landscapes Program TA, P153071) and a recipient-executed project preparation grant from the BioCF ISFL of

US$250,000. Table 1 presents a summary of the costs by component and by funding source.

Figure 2. Program Structure and Implementation Phases



37. **The implementation phase is essentially all the activities that are included under the current ZIFLP (some studies under P153071 will also continue into the first years of implementation).** In this phase, financed by a BioCF ISFL grant, an IDA credit, and a GEF grant, the GRZ will create the necessary enabling environment and finance the livelihood investments in agriculture, forestry, and wildlife as well as the biodiversity conservation investments specific to the GEF. Although not shown on the graph, financing from the GRZ itself and a range of other donors will contribute to the project goals, in particular to financing the investments necessary to set the stage for emissions reduction purchases.

38. **Finally, under the emissions reduction phase, beginning after a few years into implementation and extending to about 2030, the BioCF ISFL would purchase carbon emission reductions under an ERPA still to be negotiated and signed, for about US$30 million.** The World Bank would process this project as an emissions reduction purchase project (BioCarbon Fund Emissions Reduction Purchase Agreement, P155827).

Table 1. Project Structure and Funding (US$, millions)

Project Components	Project Cost	IDA	BioCF ISFL	GEF
1. Enabling environment	**6.35**		**6.35**	
1.1 District and local planning	4.35		4.35	
1.2 Emissions reduction framework	2.00		2.00	
2. Livelihood and low-carbon investments	**23.30**	**14.1**	**1.15**	**8.05**
2.1 Agriculture and forestry management	18.40	11.90	1.15	5.35
2.2 Wildlife management	4.90	2.20		2.70
3. Project management	**3.15**	**2.90**	**0.25**	
3.1 National Project Unit	0.65	0.40	0.25	
3.2 Provincial Project Implementation Unit	2.50	2.50		
4. Contingent emergency response	**0.00**	**0.00**	**0.00**	**0.00**
TOTAL	**32.80**	**17.00**	**7.75**	**8.05**

Total Project Costs	**32.80**
Front End Fees	
Total Financing Required	**32.80**

C. Lessons Learned and Reflected in the Project Design

39. **Zambia's forestry sector benefited from the Provincial Forestry Action Program (PFAP) supported by the Government of Finland between 1995 and 2008.** The PFAP piloted Joint Forest Management (JFM) in parts of the country that was instrumental in shaping the National Forestry Policy and Legislation. The PFAP also highlighted the need for support to community livelihoods, integrated approaches, and benefit-sharing mechanisms for sustainable forest management, among others. These lessons are important foundations for the REDD+ Readiness process in the country.

40. **There is increasing interest in promoting REDD+ efforts at a jurisdictional scale, as proposed by the ZIFLP.** Jurisdictional efforts are designed to offer economies of scale by overcoming the shortcomings of small project-based approaches by calculating carbon losses or gains across extensive areas and across diverse land use types and with multiple stakeholders. There is, however, relatively little experience with

large-scale jurisdictional approaches. A 2015 study[6] by the World Bank Group and partners analyzed some of the most advanced REDD+/low carbon development (LCD) initiatives worldwide to understand success factors. Among its recommendations were the need to insert the jurisdictional approach into the national context, to temper expectations about impacts of REDD+ payments, and to have realistic expectations about costs, timeframes, and risks.

41. **The Community Markets for Conservation (COMACO) Landscape Management Project implemented through the support of the World Bank has the development objective of reducing GHG emissions through the adoption of sustainable management practices in the EP of Zambia.** It exemplifies the critical role of the private sector, market access, community participation, and an enabling environment in reducing deforestation, boosting crop yields, and managing land more sustainably. The project has helped to increase food security and promote agricultural value addition. COMACO promotes the adoption of legume-based agroforestry systems and other CSA practices, in addition to providing a ready market for smallholders' agricultural produce. The decisions on land use for specific management purposes rest with the chiefs in consultation with the communities. This participatory approach ensures that interventions in Community Conservation Areas—land use planning, preparation of forest management plans, and sustainable forest management—are properly aligned with project objectives. Agreements between chiefdoms and COMACO require the chiefs to submit a benefit-sharing plan that will ensure fair distribution and usage of revenue channeled through the sale of emission reductions generated from the project.

42. **A focus on wildlife management has been included in the project design because wildlife resources are an important part of the rural landscape in Zambia and must be addressed in a landscape management project.** The GRZ, the World Bank, and the project partners have good experience in this area in eastern and southern Africa, accumulated through many wildlife management projects. The World Bank alone, in Zambia, is currently helping implement the Nyika Transfrontier Conservation Area Project and projects have recently closed that supported Kasanka National Park, Lavushi Manda National Park, Kafue National Park, and community-based ecotourism. All of these projects seek to enhance incentives for local communities to protect their wildlife resources but this goal has proven to be elusive. In practice, Zambian local communities have few opportunities to derive significant benefits from wildlife; in fact, they are more likely to suffer negative impacts resulting from human-wildlife conflict. The most tangible benefit that is likely to accrue to communities will come from game hunting; when community resource boards (CRBs) are organized in game management areas (GMAs), the law allows 45 percent of hunting revenues to flow directly to communities, and these can potentially be considerable sums. The ZIFLP will focus on supporting CRBs in GMAs but will continue to explore other innovative ideas such as small ecotourism projects and forest-derived payments of environmental services for which successful small-scale pilots can be found and which could potentially be scaled up. Significant advances in protecting wildlife will however primarily result from the range of project supported investments (in agriculture and forestry), which will reduce pressure on forests, indirectly benefiting wildlife, and from the project's direct support to enhanced management of LNP (and possibly later also to Luambe National Park). Through the Nyika Project, the World Bank and Department of National Parks and Wildlife (DNPW) can draw on a range of good operational lessons learned in the areas of park management, support to patrols, and close

[6] Fishbein, Greg, and Lee, Donna. 2015. Early Lessons from Jurisdictional REDD+ and Low Emissions Development Programs. Forest Carbon Partnership Facility. Arlington, VA (https://www.forestcarbonpartnership.org/sites/fcp/files/2015/January/REDD%2B_LED_web_high_res.pdf).

coordination with local authorities such as chiefs and CRBs.

43. **The project design has benefited from experiences and best practices learnt from the Zambia Pilot Program for Climate Resilience (PPCR) as well as evaluations from other adaptation and community-driven development projects.** The specific lessons from the Zambia PPCR include: (a) the need to build subnational-level capacity and support institutional arrangements that are integrated into existing structures; (b) ensuring that climate-smart and/or adaptation projects are developed and built on strong participation of the communities themselves; (c) ensuring that interventions are not stand-alone and lessons are methodically integrated into Government plans and policies; (d) having in place strong monitoring frameworks to track adoption process; and (e) the importance of continuing to explore financial mechanisms for climate resilience to sustain and bring to scale desired results. The project should also find ways to motivate early to mid-career champions, either through professional development or through additional financial incentives to ensure their support.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

44. **The major investments of the ZIFLP will take place in the EP.** However, there are activities such as those related to REDD+ policy, Measurement, Reporting and Verification (MRV), safeguards, and so on which are national in scope. Implementation of ZIFLP will therefore be at both the national and EP levels. At the national level, the MNDP will represent the GRZ as the NPU. At the provincial level, the EPPA will be the executing agency of the project. The MNDP, through the ICCS, will host the NPU for overall project sectoral coordination. This implementation arrangement aims to (a) ensure sectoral mainstreaming of investment; (b) lessen the approval layers for faster decision making, enabling more efficient project implementation; and (c) respect the constitutionally mandated decentralization process and governance structures at the national and provincial levels, to the extent possible. Detailed implementation arrangements are described in annex 2.

B. Results Monitoring and Evaluation

45. **The ZIFLP will be underpinned by a solid learning and M&E system.** The primary objectives will be to promote the practices of results-based project M&E and provide the foundation for an evidence-based decision-making process. The M&E system will be two-pronged: (a) monitoring project implementation (activities, processes, inputs, and outputs) to track progress (targets versus actual achievement) through an M&E system and management information system (MIS); and (b) impact assessments to measure the final outcome at midterm review (MTR) and end of the project.

46. **Monitoring project implementation.** An M&E officer and M&E assistants will be responsible for collecting data, compiling, analyzing, and reporting at the national and EP levels, respectively. At the community level, the ZIFLP will adopt a participatory M&E approach in which local community members will be elected to monitor project activities. A web-based and geotagged M&E system that includes real-time monitoring images and data for each community activity across all districts will be implemented. Data collected will be disaggregated, analyzed, and reported by gender. The project's impact on closing gender gaps in productivity and access to extension services will also be monitored.

C. Sustainability

47. **During project design, the sustainability of the project investments was considered carefully.** Sustainability is considered separately for the livelihood investments, the lower carbon development, and the wildlife/biodiversity conservation investments.

48. **Sustainability of the livelihood investments in the EP.** The following will be important for the sustainability of the on-the-ground investments and therefore received corresponding attention during the project design:

(a) Improvements that will be supported in the institutional, technical, regulatory, and implementation capacity of both national and provincial organizations, and the project's emphasis on a cross-sectoral landscape approach.

(b) At the local level, it is considered that the ZIFLP investments will only be successful to the degree that capacity is built locally in planning and resolution of land tenure. The project investments in these areas will have long-term value for targeted communities.

(c) Financial incentives result from better management of natural resources. All of the project investments are intended to not only better manage resources but to generate more income for rural communities. Not all of these will be successful, but where communities can expect to receive a financial benefit they will be more likely to maintain those management practices.

(d) A strengthening of the role of the private sector in working with local communities in lower-carbon and income-generating activities will be sustainable if the interventions are mutually beneficial to the private sector actors and the communities themselves. Strengthened farmer networks with the private sector will create economies of scale through aggregation of outputs and enhance the collective bargaining power of their members. As a result, farmer members will be able to buy inputs at more reasonable prices due to volume discounts, access output markets, and access credit through microfinance institutions and commercial banks to sustain their investments.

(e) The project is supportive of the National Decentralization Policy of the GRZ which aims to empower provinces and districts to manage their own resources and investment for socioeconomic development. Indeed, the more decentralization succeeds, the more likely locally managed investments at the provincial level will be sustainable.

(f) For the CSA investments, global experience shows that once smallholder farmers are organized into groups and access markets, they take up higher value-adding activities. They capitalize on other inclusive growth opportunities in the rural economy to generate additional cash flows that enable them to seek advisory services and forge linkages to the private sector. To sustain the gains, the ZIFLP will build on existing community institutional platforms in participating districts.

49. **Sustainability of the wildlife/biodiversity conservation investments.** The sustainability of investments in park management for LNP will, to a large degree, depend on the DNPW committing to future increases in the number of staff assigned to the park and to increased support for operational costs. The DNPW has indicated they will substantially increase the number of park rangers, and that the constraint up until now has been the lack of housing in the park and the lack of basic infrastructure in the park, both of which will be addressed under the ZIFLP. At a higher and broader level, sustainability of wildlife conservation in Zambia depends on (a) empowerment of CRBs and other local entities to allow them to derive financial benefits from forests and wildlife under their authority; and (b) enhancing the linkages between national tourism development and wildlife conservation, strengthening the understanding that without the state increasing financing to the protected area system, the development of tourism in Zambia will be significantly compromised. The ZIFLP, in coordination with many other projects and initiatives, will continue to pilot innovations and investments in the first area. With regard to tourism, the ZIFLP does not specifically include investments in this area but forthcoming World Bank projects and investments are expected to focus on the tourism/wildlife nexus.

50. **Sustainability of the low-carbon development investments.** A number of features of the project design suggest good sustainability of the reduced emission investments:

(a) Climate change investments enjoy support from the highest level of Government, that is, the Office of the President, the Vice President, and the MNDP. The support results from the mainstreaming of climate investment in a multisectoral integrated approach as laid down in the 7NDP under preparation. This is further strengthened by the recently approved National Climate Change Policy which vested coordination of all climate investment-related programs and projects under the MNDP.

(b) A key feature of the ZIFLP is that it is helping create the enabling environment that will allow for the near-term negotiation of the ERPA that will unlock US$30 million of additional BioCF ISFL resources for the EP, for verified emission reductions. If successful, the road should be paved for further emissions purchases, including from the voluntary carbon market. Although this amount will on its own not be sufficiently large to influence future behaviours of rural communities across the EP, it will certainly help contribute to the sustainability of the low-carbon investments.

D. Role of Partners

51. **The project aims to create synergies and collaborations with existing interventions and projects on the ground to achieve the project objectives.** Where appropriate, the ZIFLP will aim to scale up ongoing successful interventions. A detailed summary of the ongoing or planned donor-financed projects in the EP, which have the greatest pertinence for the ZIFLP, are summarized under annex 2 on Implementation Arrangements.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

52. **The proposed project's overall risk is rated Substantial.** The risks are detailed in the Systematic

Operations Risk Rating Tool (SORT) which appears in the data sheet. The risks rated Substantial are identified below along with the proposed mitigation actions.

53. **Political and governance.** While political stability following the August 2016 elections enhances the likelihood of continuity on policy direction, sudden policy shifts could introduce volatility. While this project can do little to mitigate political risks, ongoing high-level dialogue between the Government and the Bank will help ensure institutional and policy stability.

54. **Macroeconomic.** Achieving fiscal consolidation and balancing spending from subsidies toward poverty reduction remains a major challenge for the country. Monetary policy has remained very tight, reducing liquidity, putting pressure on the financial sector, and causing a drag on growth. The World Bank has developed a series of activities to address some of these risks, including Advisory Services and Analytics to support the Government in improving economic and fiscal management.

55. **Technical design of project**. The project is supported by three different sources of funding to support a holistic project objective. This however also poses risks arising from interdependency and the need for coordination to achieve results. The project structure and components have been designed to ensure complementarities of the three funding sources and at the same time ensure implementation feasibility of each component or subcomponent by grouping related tasks by responsible agency.

56. **The project also introduces a forward-looking innovative concept of emission reduction payments which will require preparation of enabling environment instruments such as the benefit-sharing plan, forest reference emissions levels, and REDD+ safeguard instruments.** To mitigate the risk of delays in preparation of relevant instruments, the project will work closely with other initiatives in Zambia that are piloting REDD+ payment schemes and build on national processes to ensure coordination. For the development of the benefit-sharing plan, the project will ensure that consultations take place with a wide range of stakeholders at local, provincial, and national levels.

57. **Institutional capacity for implementation and sustainability.** Achieving institutional coordination across natural resource-related agencies (such as the Forestry Department, Ministry of Agriculture and Livestock (MAL), and DNPW) at the national level, and for implementation at the local and provincial levels, presents risks associated with transaction costs and delays. National and regional agencies responsible for agriculture, forest, water, and energy will need to work together to achieve mutual goals. The project proposes to support provision of additional human resources in the NPU and PPIU to support program coordination. Technical and Project Steering Committees at national and provincial levels are proposed to steer cross-sectoral coordination. The implementation risk will be further mitigated by emphasizing technical capacity building at the district level and preparation of interagency Memorandums of Understanding (MOUs).

58. **Environmental and social risks.** The project is intended to have positive effects on improving the management of forests, improved livelihoods, and benefit-sharing. The Substantial risk rating reflects the challenges associated with past and future encroachment of protected areas. For agriculture, forestry and other investment activities supported by the proposed project, an Environmental and Social Management Framework (ESMF) and Process Framework (PF) have been prepared to help manage and mitigate the environmental and social impacts from the implementation of this project. Appropriate safeguard

instruments have been prepared to ensure that environmental and social risks are identified and mitigation measures are put in place. To prepare the safeguard instruments, various stakeholders were consulted, at both the national and provincial levels. Additional environmental and/or social instruments may be prepared during project implementation as necessary.

59. **The project entails some social risks (for example, elite capture of benefits and unmet expectations on project benefits) and some environmental risks (related to the sustainability of project-supported forestry and agricultural activities).** There is also potential vulnerability of women and disadvantaged groups because of unequal gender roles in managing forest resources and land tenure disparities. Because of their special ties to land, women typically are vulnerable to activities that affect natural resources on which they depend. For the emission reduction payments, the Strategic Environmental and Social Assessment (SESA) will be conducted and will contribute to integrating key environmental and social considerations into the design of the benefit-sharing plan.

60. **Sector Strategies and Policies.** Conflicting sectoral policies can undermine the ZIFLP's efforts. Policies and incentives related to charcoal making, infrastructure development, agricultural expansion and lack of enforcement of existing policies could conflict with action plans, and incentives supported by the project. To mitigate the risk, the ZIFLP will facilitate a coordinated and transparent dialogue with partners and sectors, leading to better understanding of the trade-offs involved with sustainable forest management and REDD+ and enabling the GRZ to take more informed decisions around land use planning, especially at the provincial level.

61. **Stakeholder.** Targeted consultations have been undertaken in the course of preparation of the ZIFLP with relevant stakeholders at all levels to ensure consistency in understanding of project design. Coordination and alignment between projects and actors will be critical to ensure that the government capacity is strengthened and not overcome. Similarly, multiple approaches to community consultations and engagement in the same region may reduce the effectiveness of the individual projects and waste communities' time unless they are well coordinated. To mitigate these risks, the project will proactively engage in coordination and alignment between projects and agencies operating in the same region through coordination mechanisms such as the Chipata Round Table. A proactive communication strategy is planned as part of project implementation.

62. **Land tenure.** Weak land tenure could compromise implementation of community-level investments. The uncertainty attached to tenure and land use rights generates several unknowns related to the allocation of potential benefits from REDD+, and with regard to land management responsibilities. The proposed project includes significant resources to help assess land tenure and land use planning issues in the Eastern Province and funds as needed to support government efforts on this issue.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

63. **An economic and financial analysis (EFA) demonstrated the economic and financial viability of the project.** The analysis consists of (a) a literature overview of potential project benefits; (b) a financial analysis at the farm level for several crops to demonstrate the financial viability of CSA project interventions; and (c) an economic analysis analyzing the societal economic benefits and costs. Benefit

streams for the economic analysis include (a) incremental net benefits as identified in the financial analysis but valued at economic cost; (b) benefits from sustainable forest management—afforestation of non-native and indigenous trees in a forest reserve and planting of woodlots; and (c) benefits from reduced GHG emission and increased carbon sequestration, valued at the social cost of carbon (SCC).

64. **The financial analysis shows that the introduction of climate-smart management practices, related to improved nutrient management, mulching, no tillage, improved seeds, and precise planting dates, can increase households net benefits, with net present value (NPV) of incremental net benefits (20 years, discount rate 12 percent) between US$363 (for beekeeping) and US$941 (moringa trees).** For the economic analysis, a total project cost of US$33.07 million was considered. Benefits stem from adoption of CSA practices on 47,422 ha and sustainable forest management on 13,500 ha as well as the social value of avoided emissions of 888,603 tCO_2e (annex 7) valued at US$30 per tCO_2e. Over a period of 20 years and at a discount rate of 6 percent, this can result in an NPV of US$282 million over a period of 20 years and an internal rate of return (IRR) of 224 percent. If the social value of carbon is excluded, the NPV is US$25.8 million and there is an IRR of 17 percent. If only benefits of introducing CSA and productivity enhancing practices are included, the NPV results in US$14.8 million and an IRR of 14 percent. Sensitivity analysis of key variables confirmed the robustness of the results.

B. Technical

65. **Since July 2014, the World Bank has required all investment finance projects to calculate a net carbon balance.** The World Bank uses the Ex-Ante Carbon Balance Tool (EX-ACT), developed by the Food and Agriculture Organization (FAO) to undertake this analysis. The analysis captures project activities related to introducing CSA practices, sustainable forest management—introducing plantations and afforestation on previously abandoned land—and introducing improved cookstoves which reduce wood fuel quantities. These activities are expected to reduce deforestation, which is also captured in the analysis. Over the project duration of 20 years, the project constitutes a carbon sink of 17,772,061 tCO_2e. The project provides a sink of 183 tCO_2e per ha, equivalent to 9.2 tCO_2e per ha per year.

C. Financial Management

66. **An FM capacity assessment for the NPU and the PPIU at the EP was carried out by the World Bank in November 2016.** The assessment concluded that the FM arrangements in place meet the World Bank's minimum requirements under OP/BP 10.00 (Investment Project Financing) and therefore are adequate to provide, with reasonable assurance, accurate and timely information on the status of the project. The overall FM risk rating of the project is Moderate, because (a) the Pastel software is not connected to the Integrated Financial Management Information System (IFMIS) and therefore will not benefit from the strong accountability controls and efficiency provided by the IFMIS; and (b) more projects have been taken on by the ICCS, hence, loading the existing staff with extra workload. However, this risk rating is expected to be reduced to Low after the risk mitigation measures have been taken. The Ministry of Lands was also assessed and found to be adequately staffed and their accountants have experience in World Bank-financed projects.

67. **Therefore, it is recommended that:** (a) the GRZ (both nationally and in the EP) could assign accountants to the project to be in charge of the financial operations, although the project may recruit consultants (project accountants) on an as needed basis to help build capacity; and (b) the World Bank

should conduct training during the project launch in the World Bank's FM and disbursement guidelines to the project management units, including internal audit staff.

D. Procurement

68. **Procurement under the proposed project will be carried out in accordance** with the (a) World Bank's "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 and updated July 2014; (b) "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 and updated July 2014; (c) "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", the Anti-Corruption Guidelines, dated October 15, 2006, and revised in January 2011; and (d) the provisions stipulated in the Legal Agreements. Further details on the project's procurement procedures are included in annex 5.

E. Social (including Safeguards)

69. **The ZIFLP is intended to benefit and improve local communities of the EP which are largely dependent on natural resources.** Therefore, from a social perspective, the project is expected to have a positive impact on rural poor communities, through strengthening their capacity to manage natural resources, promoting improved benefits sharing from different types of forest- and wildlife-based activities, and supporting the development of more sustainable landscape-based livelihoods.

70. **Due to the focus on protected areas, especially around LNP in the EP, as well as GMAs and forest reserves, OP/BP 4.12 on Involuntary Resettlement is triggered, as it concerns possible restriction of access to natural resources in protected areas.** A PF was prepared and publicly disclosed.

71. **Some of the project activities might affect existing livelihoods by restricting access to natural resources by local communities, which typically engage in activities such as agriculture, hunting, artisanal mining (illegal miners are present in LNP, primarily extracting gems), and timber harvesting.** The PF for this project considers an inclusive participatory approach and follow-up actions that the project will use to minimize any adverse impacts upon local livelihoods and to provide support for the development of more sustainable or alternative livelihoods, where needed. The PF provides guidelines for community participation to determine the measures necessary to mitigate these risks and implement alternate livelihoods that use forest resources in a sustainable way. The PF sets the conditions under which OP/BP 4.12 will be applied in the project, outlines the principles and procedures to be followed if negative social impacts occur, and seeks to prevent eligible individuals, households, and communities from becoming worse off as a result of the project. The PF also identifies the roles and responsibilities and capacity-building and budget requirement to effectively implement these mitigation measures. The project will include direct funding for follow-up livelihood support activities to the affected communities through Livelihoods Restoration Plans (LRPs). Certain activities under Component 2 will provide additional support to enhance sustainable forest and agriculture-based livelihoods. The project will encourage co-management of protected areas and local forests to the extent possible.

72. **Any project-induced physical displacement of persons in the project area will follow the guidance of World Bank OP 4.12 on Involuntary Resettlement through the project's RPF.** Resettlement of encroachers was recently carried out by Zambian authorities in LNP. The Government has provided the

World Bank a review of how the resettlement was carried out and an action plan to address any gaps identified, which it will be required to implement. The review also indicates that a number of individuals who tried to re-establish farms in the Park illegally post-eviction were apprehended. The legal cases against encroachers are ongoing.

73. **The project will also support small civil works (such as the construction of office space, staff accommodations, and ranger outposts) on governmental (public) or voluntarily provided community lands, in the various chiefdoms.** Similarly, public or community lands will be used for various livelihood support activities. Under Component 2, subproject screening mechanisms will address any risks of land use conflict involving local populations, especially in the chiefdoms, and ensure that any lands used for project works were indeed acquired voluntarily and do not involve conflicting claims. In addition, all civil works will be screened for environmental and social risks, and, if needed, safeguard plans will be prepared and implemented before any works commence.

74. **The project will uphold, and respect recognized cultural norms and cultural practices, community sacred sites, and community customary decision-making structures.** It will promote good conservation practices and efforts by the community and will ensure consultation with traditional chiefs is upheld. This includes, the grievance redress mechanisms (GRMs) traditionally relied upon in the chiefdoms.

75. **Besides the World Bank-mandated GRM, the project will endorse a more local approach that will support the development of complaints management capabilities in the EP, including consultation and involvement of chiefs.** These approaches are detailed in the RPF and PF.

Consultation and Participation

76. **Citizen engagement and participation for the project's implementation will build on the achievements from various multistakeholder consultations that have taken place in the EP and will take account of existing communication structures.** During preparation of the ZIFLP, several consultations were conducted with diverse stakeholders and communities.

77. **Specifically, the program collaborates with stakeholders regularly through the following channels: project preparation missions, monthly REDD+ Working Group meetings organized by the ICCS and FD, and Chipata Roundtable meetings.** The Chipata Roundtable was established to provide a forum for Government and nongovernmental stakeholders to discuss major environmental threats to the Luangwa Valley ecosystem and is chaired by the provincial permanent secretary (PS), with active participation of chiefs and civil society. The Roundtable will likely be expanded to cover the entire EP. The project will also develop a clear consultation and participation plan and protocols to be operationalized during implementation of this project, to ensure that all relevant stakeholders are targeted by the project.

78. **The preparation of the safeguards frameworks has benefited from various stakeholder consultations.** Other studies conducted during the preparation of this project have also conducted several consultations in the EP.

Gender

79. **CSA practices have the potential to provide benefits and save time for women, and when women have access to information on CSA, they are just as likely as men to adopt the practices.** The project will pay attention to the possible negative impacts of the practices on women's workload and also promote labor saving technologies.

80. **Livelihoods in the EP are largely based on natural resources, primarily through agricultural activities.** However, in Zambia, 80 percent of female-headed households own less than 2 ha of land—48.5 percent own less than 1 ha. For male-headed households, the corresponding numbers are 61 percent and 27.1 percent.[7] Women provide more than 60 percent of the agricultural labor force, but do not have the same access to productive inputs (land, finance, and information), which makes women more vulnerable to the negative impacts of climate variability and related shocks. For example, female-headed households in the EP are less likely to access innovative practices and are less likely to adopt improved technologies in agriculture (ploughing, ripping, fertilizers, or herbicides). Furthermore, 43 percent of male-headed households engage in crop commercialization, while only 29 percent of female-headed households are able to move beyond subsistence farming.

81. **The key gender gaps relevant to the project are women's participation in community groups and access to markets and extension services.** Despite recent efforts on harmonization, for example, of customary and statutory land laws, women do not have equal voice and power on a national, local, or household level. In the EP, women are less likely to engage in landscape management, including forest meetings, forest management groups, or village forest leadership.

82. **Some ZIFLP activities could potentially worsen gender inequality if not carefully conceived and implemented.** For example, CSA practices may have undesired effects on workload, assets, crop residues, food and nutrition security, mechanization, and extension. CSA may shift labor input from plowing, which is traditionally based on male labor, to ripping and increasing land preparation, which is more traditionally seen as female work.[8] However, where ripping is enabled with oxen, it may rely on male labor input. Also CSA practices may require substantial investments of time, labor, or cash, which often are considerable constraints for women.

83. **The ZIFLP will seek to address inequities in human capital, economic empowerment, and voice through the proposed activities with regard to design and targeting.** However, existing literature and data do not provide sufficient information with regard to women and men's roles in the proposed activities. Therefore, a Rapid Social Assessment is under preparation to provide additional understanding of the disaggregated impacts. The assessment will analyze gendered roles in production, access to resources and services (including associations) and decision-making power. The objective of this assessment is to inform livelihood activities. This assessment will be completed before start-up of project

[7] USAID (U.S. Agency for International Development). 2016. Impact Evaluation of the Community-Based Forest Management Program. Report on Baseline Findings.
[8] Midgley, S., Dejene, A. and Mattick, A. 2012. Adaptation to Climate Change in Semi-Arid Environments—Experience and Lessons from Mozambique. Food and Agriculture Organization of the United Nations, Rome (http://www.fao.org/3/a-i2581e.pdf).

implementation.

84. **To adequately understand the gendered impacts of program activities, all data collected under the program will be disaggregated by gender.** For households, information should clarify the gender of the head of the household. In addition to the indicators that are included in the project's Results Framework, the project's M&E and social specialists will be encouraged be encouraged to monitor the implementation of gender aspects of the project.

F. Environment (including Safeguards)

85. **The project is assigned environmental Category B - Partial Assessment.** This means significant and/or irreversible adverse environmental impacts are not anticipated from the investments to be financed under the project. Although the project is expected overall to be environmentally positive, there is the potential for project works or activities to cause limited small-scale negative impacts. Five environmental safeguards are triggered—Environmental Assessment - OP/BP 4.01, Natural Habitats - OP/BP 4.04, Forests - OP/BP 4.36, Pest Management - OP 4.09, and Physical Cultural Resources - OP/BP 4.11.

86. **An ESMF has been prepared to assess social and environmental risks and develop the processes to manage in accordance with OP/BP 4.01 on Environmental Assessment.** Specific plans will be prepared, if needed, once the site-specific activities and location of communities to be supported by the project become available.

87. **OP/BP 4.36 on Forests is triggered because of the forestry development and community-based forestry management activities.** The purpose of this set of activities on forestry management is two-fold: (a) assist the FD to better carry out their functions and to manage select forest reserves for which they are responsible; and (b) to assist local communities to improve the management and conservation of their forest resources and create income opportunities. Investments under this category may include the cultivation or extraction of any forest or non-timber product that could be sustainably managed. The ZIFLP will support community forest management groups (CFMGs) to develop and implement forest management plans that are consistent with village land use plans and follow the guidelines and specifications established in the Forest Act and its regulations, in collaboration with the FD. These plans would typically include community forestry enterprises and fire management and prevention. The project may also include afforestation or forest restoration activities if communities choose such activities.

88. **Given the proposed project activities, the project will have impacts on the health and quality of forests; will affect the rights and welfare of people and their level of dependence upon and interaction with forests; and aims to bring about changes in the management, protection, and utilization of natural forests.** However, the project will not lead to significant conversion or degradation of critical forest areas or related critical natural habitats. The project ESMF and PF address the potential impact of the project on forests and/or the rights and welfare of local communities. Activities to be supported will be consistent with the land and resource use plans developed at the village and district levels.

89. **The project may finance harvesting activities conducted by local communities under community-based forest management or even possibly Joint Forest Management (JFM) within IUCN[9] Category VI Protected Areas (Managed Resource Protected Areas that are established and managed mainly for the sustainable use of natural ecosystems).** In these areas, project support is restricted to situations where such activities are permitted under the legislation governing the establishment of the area and where the activities form an integral part of the management plan for the area. Such communities will adhere to a time-bound phased action plan to achieve a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management including the following as outlined in paragraph 10 of OP 4.36:

- Compliance with relevant laws;
- Recognition of and respect for any legally documented or customary land tenure and use rights as well as the rights of workers;
- Measures to maintain or enhance sound and effective community relations;
- Conservation of biological diversity and ecological functions;
- Measures to maintain or enhance environmentally sound multiple benefits accruing from the forest;
- Prevention or minimization of the adverse environmental impacts from forest use;
- Effective forest management planning;
- Active monitoring and assessment of relevant forest management areas; and
- The maintenance of critical forest areas and other critical natural habitats affected by the operation.

90. **OP 4.09 on Natural Habitats is triggered because of the project's forest-related and wildlife-related activities of the project.** The forest-related activities are already discussed above. The Wildlife Management subcomponent will have two major focus areas: (a) improved management of the complex of protected areas (critical natural habitats) centered on LNP in the EP; and (b) promotion of practices which will maximize opportunities for rural communities from adjacent wildlife resources and which will be positive for biodiversity conservation. LNP covers approximately 2,700 km^2. This project will not involve the significant conversion or degradation of critical natural habitats. The ESMF contains language to be included in contractor contracts and bidding documents detailing their environmental obligations including for avoidance of harm to natural habitats such as prohibitions on hunting, lighting of fires, and

[9] The International Union for Conservation (IUCN) has established an internationally recognized classification system for protected areas (for further information see www.iucn.org).

other potentially harmful activities.

91. **The project will also support small civil works (such as the construction of office space, staff accommodations, and ranger outposts) on governmental (public) or voluntarily provided community lands, in the various chiefdoms.** All civil works will be screened for environmental and social risks, and, if needed, follow-up safeguards instruments will be prepared and implemented before any works commence. The Physical Cultural Resources Policy, OP/BP 4.11, is applicable if any archeological or other culturally relevant items are found or exist near a selected subproject during project implementation. Therefore, the ESMF contains chance-find procedures detailing the plan of action in the event of such a find. Additionally, the ESMF contains language to be included in contractor contracts and bidding documents detailing their environmental obligations, including physical cultural resources.

92. **Since this project will finance agricultural activities that will likely involve pesticide use, the Pest Management Safeguard Policy, OP 4.09, is applicable.** However, given the small-scale nature of activities, a significant increase in pesticide use is unlikely; therefore, a stand-alone Pest Management Plan (PMP) is unnecessary. However, the ESMF contains an abbreviated PMP, which details how the project will address and manage these issues. It provides for training of farmers in the safe use, management, and storage of agrochemicals. Since the project will support nurseries, it is conceivable that some of the supplies may be pesticides. Therefore, the ESMF contains guidance on the pesticides allowed in Zambia as well as those restricted according to OP 4.09.

93. **Safeguard instruments will also be needed as the EP moves toward emission reduction payments, as required by guidelines under the UNFCCC.** The ZIFLP will help prepare a Social and Environmental Safeguards Assessment (SESA) to address the key environmental and social issues associated with the analysis and preparation of REDD+ strategy options as well as REDD+ projects, activities (including investments), policies, and regulations. A SESA working group consisting of key relevant Government institutions, civil society organizations (CSOs), private sector, and so on, will be constituted before the launch of the SESA activities to provide oversight to the entire SESA process. The SESA working group will expand on the work, composition, and mandate of the existing Safeguards Information System (SIS) working group. The REDD+ safeguards frameworks will provide inputs for the finalization of the ERPA as required in the Carbon Fund Methodological Framework.

94. **In addition, project funding will help define how the World Bank REDD+ and ERPA safeguards for the EP will be integrated into the function and structure of Zambia's SIS.** The SIS will serve as the main repository and information sources for all safeguards-related information across the National REDD+ Program, including the EP. The SIS is mandated by UNFCCC requirements and will be implemented at a national level and built on existing systems, as appropriate. The work will focus on two major components: (a) defining the type of information that needs to be collected, stored, and made available in a transparent manner; and (b) determining the platform and functional requirements for establishing the SIS. The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) is the lead program for developing the SIS and the consultants are expected to have a design completed by late 2017.

95. **The NPU will monitor overall implementation of the project safeguard frameworks.** The PPIU will have responsibility for safeguards implementation at the provincial level but will need to significantly

increase their capacity to meet this obligation. Safeguards training needs have been identified at both national and provincial levels, which will be provided through the TA component of this project.

96. **Public consultations on safeguards were held and details are given in the Environmental and Social Management Framework (ESMF), Process Framework (PF), and Resettlement Policy Framework (RPF).** The ESMF, PF, and RPF were disclosed in-country on the ICCS website on January 8, 2017. They were also disclosed in the InfoShop on February 15, 2017. A stakeholder disclosure workshop was conducted in Chipata, EP, on January 25, 2017. Diverse participants attended the meeting, from all nine districts, including traditional authorities, various Government departments, CSOs, and private sector representatives.

G. Other Safeguard Policies

Project Grievances Redress Mechanism

97. **The project will set up a GRM building on both traditional conflict-resolution mechanisms as well as project-based steps to ensure community members and all stakeholders have an opportunity and means to raise their concerns or to provide suggestions regarding project-related activities.** From the community to the national level, there will be focal persons to receive, record, and address grievances, queries, and suggestions. Focus will, however, be at the provincial level, where the project will be implemented.

98. **A reporting line of received (and addressed) grievances will also be clearly defined, so that the NPU will have a full set of data.** Complaints will be categorized and recorded at each level of the structure, and consolidated periodically in both provincial- and national-level grievance databases. The database will also be an effective management tool to monitor progress and detect potential obstacles in the project implementation.

99. **During the participatory assessment process for subprojects preparation and sensitization sessions, the project's GRM ('communication steps' for beneficiaries) will be explained so that all stakeholders are aware and encouraged to use the mechanism for transparency and better project implementation.** To better inform stakeholders, the project will prepare materials (for example, posters and leaflets) in a widely spoken local language and displayed in publicly accessed areas as part of the communication activities. More detailed plans on the GRM will be explained in the Project Implementation Manual (PIM).

H. World Bank Grievance Redress

100. **Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to

submit complaints to the World Bank's corporate GRS, please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Zambia
Zambia Integrated Forest Landscape Project

Project Development Objectives

To improve landscape management and increase environmental and economic benefits for targeted rural communities in the Eastern Province and to improve the Recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Forest area under sustainable management practices		Hectare(Ha)	0.00	66000.00	Annual	Survey; annual reports from CFMG and Forestry Department	PIU
Description: This indicator measures the forest land area that, as a results of the project, incorporates and/or improves sustainable forest management practices. The indicator targets forest land which is brought under sustainable management by the Forestry Department and local Community Forest Management Groups (CFMGs). CFMGs develop and implement forest management plans to guide the sustainable forest management. Sustainable forest management can include activities such as community forestry enterprises, fire management and prevention, or afforestation or forest restoration activities if communities choose such activities, or cultivation or extraction of forest or non-timber product, such as beekeeping, sustainable charcoal, wood-lots for fire wood production, nurseries, etc.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Agricultural area under climate-smart agricultural practices		Hectare(Ha)	0.00	59000.00	Annual	Survey	PIU
Description: The indicator measures agricultural land area that, as a results of the project, incorporated and/or improved climate-smart agricultural practices. Examples of CSA practices and technologies which will be supported by the project, are broadly: Conservation agriculture and integrated soil fertility management and agro-forestry. CSA practices can include precision farming, tillage, and improved fertilization and should be promoted in combination. Technologies are new materials introduced into new or old practices, and can include new drought-tolerant varieties. The indicator is related to the corporate results indicator “Land area under sustainable landscape management practices”. Similarly, it applies if a combination of at least 2 CSA practices/technologies is applied. It is assumed that 50 percent of all farmers who receive assets and services such as extension services and training will adopt CSA practices on one hectare land.							
Name: Crop yield increase for selected crops		Percentage	0.00	30.00	Annual	Survey	PIU
Maize		Metric tons/year	1.60	2.08		Survey	
Soybeans		Metric tons/year	0.90	1.17		Survey	
Description: This indicator measures gradual yield increase of two crops – maize and soybeans - which are prominent in the Eastern Province. The average yield increase in project intervention area is expected to be 30 percent in year 5. The indicator measures crop yield increase achieved by project beneficiaries who have adopted climate-smart agriculture practices.							
Name: People in targeted communities with increased monetary and		Number	0.00	40000.00	Annual	Survey, MIS	PIU

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
non-monetary benefits							
Share of which women		Percentage	0.00	30.00	Annual	Survey, MIS	PIU

Description: The indicator monitors the number of project beneficiaries, thus farmers or community members, who have achieved a monetary or non-monetary benefit as a result of the project. Through the project, farmers and community members receive assets and services provided by the project, which can include access to matching grants, extension services and training on sustainable landscape management practices, inputs (e.g. fertilizers, seeds, labor), production related services (e.g. soil testing, animal health), agricultural marketing support services, access to farm and post-harvest machinery and storage facilities. The indicator measures those beneficiaries who have increased non-monetary or monetary benefits resulting from of having access to and using these assets and services. Benefit can include increased crop yields, increased income from sustainable forest management (e.g. beekeeping, sustainable woodlots) or from community matching grants which could lead to new benefit streams from small livestock, hatcheries or increased crop yields due to irrigation schemes.

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Direct project beneficiaries	✓	Number	0.00	214955.00	Annual	MIS	PIU
Female beneficiaries	✓	Percentage	0.00	30.00	Annual	MIS	PIU

Description: Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
(percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.							
Name: Validation of manual for identification, demarcation, recording and updating of customary rights in rural areas		Yes/No	N	Y	Annual	Workshop reports	PIU
Description: The indicator tracks whether the manual to regulate identification of use rights to customary land and issuance of certificates to these that draws on pilot experiences has been disseminated widely, discussed publicly with relevant stakeholders, and is subsequently being applied in selected contexts.							
Name: Key instruments to establish the enabling environment for emission reduction payments prepared and adopted		Number	0.00	8.00	Annual	Annual reports, Supervision mission reporting	PIU
Description: The National REDD+ strategy will provide guidance on actions to be undertaken in key sectors such as agriculture, energy and land use more broadly, as well as guidance on thematic and core design issues. Thereby four key instruments will be designed and adopted and supported by the project: 1) references emission level, 2) MRV, 3) benefit sharing plan, 4) SESA social and environmental safeguards assessment. If an instrument was prepared one point will be assigned and two points when adopted. Criteria for preparation and adoption will be detailed in the M&E manual. It is expected that in year 5 all instruments are adopted.							
Name: ERPA agreed and signed by GRZ and Trustee		Yes/No	N	Y	Annual	Supervision mission reporting	PIU

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: A Key feature of the ZIFLP is that it is helping to create the enabling environment that will allow for the near-term negotiation of the Emission Reductions Purchase Agreement (ERPA) for verified emission reductions. A signed ERPA between GRZ and Trustees implies that benefit sharing plan was agreed upon.							
Name: Net reduction in deforestation measured as effectiveness index of activities supported by project		Hectare(Ha)	0.00	24170.00	Annual	MIS, survey, secondary sources and literature	PIU
Description: This indicator presents a relative effectiveness Index to assess the relative reduction of deforestation of each intervention. It is based on best practice examples and secondary sources: For each intervention which is monitored in ha of implementation (land use planning, climate-smart agriculture practices such as agroforestry, soil and water conservation measures, sustainable land management practices, or forest management, fire management, community conservation areas, afforestation/reforestation) the relative effectiveness in terms of reducing deforestation is derived based on existing project examples from Zambia (e.g. COMACO Landscape Management Project) and other countries under similar conditions; in addition secondary sources, literature etc. will be used. The indicator targets will need to be confirmed, based on improved methodology, in case better secondary data becomes available.							
Name: Area covered by integrated land use plans which were consulted and agreed		Hectare(Ha)	0.00	52000.00	Annual	Survey, Annual reports; Consulted and agreed land use plans.	PIU
Description: The project uses participatory integrated landscape planning and management approaches to determine the optimal mix and spatial configuration of land use options at the local level. Well-designed land use plans aim to have positive impacts on agriculture, energy, forests and woodlands, wildlife conservation, and on livelihoods in selected deforestation and forest degradation hot spots in the project area. The project supports land and resource use plans developed at the village and district levels, and supports communities in developing land use plans. This indicator summarizes the land area that is considered in these land use plans. Each integrated land use plan needs to have been consulted and agreed upon with communities.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Partnerships between ZIFLP and private sector companies established		Number	0.00	2.00	Annual	Supervision mission reporting	PIU
Description: This indicator measures the number of partnerships between private sector and ZIFLP. The ZIFLP will sign a memorandum of understanding (MoU) with interested companies to commit to purchase deforestation-free crops.							
Name: Agreements signed between community forest management groups and the Forestry Department		Number	0.00	15.00	Annual	Annual Reports of Forestry Department	PIU
Description: Community forest management groups (CFMGs) will be established as based on the Forest Act of 2015. The project's support will include formal establishment and registration of CFMGs. Once established, ZIFLP will assist the CFMGs to prepare forest management plans, in collaboration with the Forestry Department, which will support sustainable forest management. The indicator measures the number of CFMG which sign an agreement with the Forestry Department.							
Name: Farmers adopting improved agricultural technologies		Number	0.00	59103.00	Annual	Survey	PIU
Share of which women		Percentage	0.00	30.00	Annual	Surveys	PIU
Description: This indicator measures the number of farmer, who receive training, extension services and production inputs and adopt the improved agricultural technologies, thus climate-smart agriculture practices and technologies as supported by the project. A list of practices and technologies which qualify to be tracked under							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
this indicator will be provided in project manual. It is assumed that 50 percent of farmers who participate in training and capacity building services provided by the project, will adopt at least two CSA practices/technologies on their agricultural land.							
Name: Enabling environment for improved wildlife conservation and community engagement diagnostic tool (index)		Percentage	48.00	65.00	Year 1 and Year 5	Survey, stakeholder consultations, progress reports from Department of National Parks and Wildlife	PIU
Description: This index measures community attitudes toward wildlife as well as government policy and other enabling or disabling conditions. The baseline and target values are preliminary and will be reconfirmed in year 1 by consulting with communities on the ground.							
Name: Management Effectiveness Tracking Tool (METT) score for Lukusuzi National Park		Number	30.00	60.00	Annual	Surveys, progress reports by Department of National Parks and Wildlife	PIU
Description: The METT is one of the most widely used globally applicable generic systems to assess protected area effectiveness. The METT is designed to track and monitor progress towards worldwide protected area management effectiveness. The methodology is a rapid assessment based on a scorecard questionnaire, which includes six elements of management identified in the IUCN-WCPA. Framework, i.e. context, planning, inputs, process, outputs and outcomes.							
Name: Grievances registered related to delivery of project benefits that are actually addressed		Percentage	0.00	100.00	Annual	Supervision missions and annual report	PIU

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: This Core Sector Indicator measures the transparency and accountability mechanisms established by the project so that the target beneficiaries have trust in the processes and are willing to participate and feel that their grievances are attended to promptly. Thus the project monitoring system should provide information on the number of complaints received against the number actually resolved.							
Name: Percent of satisfactory quarterly project interim unaudited financial and monitoring reports submitted		Percentage	0.00	100.00	Annual	Progress reports and MIS	PIU
Description: This indicator monitors the timely, i.e. submitted within 45 days of end of the previous period, submission of satisfactory management reports to GoK and the Bank.							

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Forest area under sustainable management practices	0.00	0.00	0.00	19800.00	46200.00	66000.00	66000.00
Agricultural area under climate-smart agricultural practices	0.00	0.00	17700.00	35500.00	47300.00	59000.00	59000.00
Crop yield increase for selected crops	0.00						30.00
Maize	1.60	1.60	1.60	1.68	1.84	2.08	2.08
Soybeans	0.90	0.90	0.90	0.95	1.04	1.17	1.17
People in targeted communities with increased monetary and non-monetary benefits	0.00	0.00	0.00	11600.00	19000.00	40000.00	40000.00
Share of which women	0.00	0.00	30.00	30.00	30.00	30.00	30.00

Intermediate Results Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Direct project beneficiaries	0.00	0.00	38600.00	94380.00	154740.00	145835.00	214955.00

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Female beneficiaries	0.00	0.00	30.00	30.00	30.00	30.00	30.00
Validation of manual for identification, demarcation, recording and updating of customary rights in rural areas	N	N	N	Y	Y	Y	Y
Key instruments to establish the enabling environment for emission reduction payments prepared and adopted	0.00	0.00	0.00	4.00	8.00	8.00	8.00
ERPA agreed and signed by GRZ and Trustee	N	N	N	N	Y	Y	Y
Net reduction in deforestation measured as effectiveness index of activities supported by project	0.00	0.00	5000.00	12300.00	18600.00	24170.00	24170.00
Area covered by integrated land use plans which were consulted and agreed	0.00	0.00	0.00	15600.00	36400.00	52000.00	52000.00
Partnerships between ZIFLP and private sector companies established	0.00	1.00	2.00	2.00	2.00	2.00	2.00
Agreements signed between community forest management groups and the Forestry Department	0.00	0.00	5.00	15.00	15.00	15.00	15.00
Farmers adopting improved agricultural technologies	0.00	0.00	17700.00	35500.00	47300.00	59000.00	59103.00

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Share of which women	0.00	0.00	8.00	16.00	24.00	30.00	30.00
Enabling environment for improved wildlife conservation and community engagement diagnostic tool (index)	48.00	48.00				68.00	65.00
Management Effectiveness Tracking Tool (METT) score for Lukusuzi National Park	30.00	30.00	30.00	40.00	40.00	60.00	60.00
Grievances registered related to delivery of project benefits that are actually addressed	0.00	30.00	50.00	60.00	80.00	100.00	100.00
Percent of satisfactory quarterly project interim unaudited financial and monitoring reports submitted	0.00	50.00	60.00	75.00	100.00	100.00	100.00

ANNEX 1: DETAILED PROJECT DESCRIPTION

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Component 1. Enabling environment (Total Cost: US$6.35 million, all from BioCF ISFL)

1. **This component includes activities under two subcomponents which together will create the conditions nationally and provincially for an efficient and effective implementation of the livelihood investments under Component 2 and secondly, create the enabling environment for a future ERPA to be signed between the GRZ and the BioCF ISFL.** This component's interventions will be financed through grant support from the BioCF ISFL. The subcomponents are described in the following paragraphs.

Subcomponent 1.1 District and local planning (Total cost US$4.35 million, all from BioCF ISFL)

2. **This first subcomponent will provide resources to support the following activities:**

(a) Institutional strengthening at the subnational level;

(b) Provide targeted support to the development of integrated district plans in the province;

(c) Support for local planning instruments; and

(d) Support for engaging agribusiness.

Institutional strengthening at the subnational level

3. **The project will support the EP, provincial and district planning units, other relevant offices, and existing coordination platforms that have key roles in the implementation of the ZIFLP.** The project will also support strengthening multistakeholder platforms such as the Chipata Round Table to ensure civil society and private sector representation at local-level planning and decision making.

4. **Partnerships for TA and community-based enterprise development will be necessary for communities to undertake land use planning, register community forest management (CFM) agreements, develop and implement forest management/action plans, and build partnerships with the private sector to establish businesses and market linkages for production.** Local communities will need support in several areas such as technical inputs, trainings in use of planning tools, inputs for adoption of agricultural practices, establishment of CFMGs and forest-based enterprises, leveraging microcredit schemes, and strengthening community-level governance structures (for example, CRBs, Village Action Groups in case of GMAs, and customary mechanisms relevant to land use management) to improve land management.

5. **Service providers will be contracted to complement government efforts.** Such service providers could include nongovernmental organizations (NGOs), CSOs, community-based organizations (CBOs), vocational training institutions, small and medium enterprises, or specialized agencies who, upon demand, could provide tailored support to suit community needs. The project will support identification

and matching of service providers to the community needs to support local communities improve among others, land use planning, develop action plans as relevant for management of land in accordance with agreed local level land use planning, and implement land management activities.

6. **For efficiency reasons, such service providers could support several communities where common needs exist.** Service contracts could be established either at community level (for community-specific needs) or at the district/ward level (where common needs exist for several communities within a district/ward). A directory of service providers will be prepared.

7. **Varying and appropriate criteria for the selection of service providers will be applied by the PPIU in collaboration with the provincial administration and expressions of interest will be invited for potential partners to apply.** The PIM will further elaborate the criteria. A preliminary list of the criteria includes:

(a) Alignment of activities with ZIFLP objectives,

(b) Geographic location of service providers and specialized areas of interest,

(c) Operational presence and track record of operation including in the EP,

(d) Technical capacity to upscale activities, including capacity to transfer knowledge to province, district, and/or community organizations,

(e) Technical experience and expertise in the areas of proposed support, and

(f) Level of financial, administrative, and technical accountability systems that the potential partner has in place.

Provide targeted support to the development of integrated district plans in the province

8. **The EP is divided into nine districts and the project will support, as feasible within the available financing, activities in all districts given that collective action is required to achieve performance at jurisdictional scale.** Out of the nine districts, Katete, Mambwe, Nyimba, Petauke, Lundazi, and Chipata Districts were identified in the Drivers of Deforestation study as those with relatively high and active deforestation. In targeting activities within a district, consideration will be given to the potential for reducing deforestation, promoting reforestation, and protecting existing forests and sustainable land management practices to have a net emission reduction impact at the provincial level by 2025. In the provincial vision for the EP, the Government has identified a need of US$140 million investment financing, and the ZIFLP will support a part of the investment needs, targeted to priority actions that contribute to reducing deforestation and generating emission reductions from land use.

9. **The purpose of providing support through the ZIFLP to district development plans (DDPs) is to mainstream land use relevant climate change and development issues into district and provincial level planning for long-term sustainability.** The Urban and Regional Planning Act of 2015 mandates development of DDPs to promote and enable spatial, aesthetic, economic, and social development. The GRZ is in the process of issuing guidelines for district planners to undertake district level planning

commensurate with district capacities. The Integrated District Development Plans (IDDPs) primarily target development and planning in state lands but could include customary lands in consultation with traditional authorities. Early efforts in development of DDPs show that in practice there are constraints in including customary land in provincial and district planning efforts. The objectives of district planning are to:

- Establish a coordinated policy framework for the district, which can direct investment in development activities that result in poverty reduction and assist the population to better manage risk;
- Ensure the most efficient use of scarce resources available to the district are directed to the identified priorities;
- Attract investment to the district, including the mobilization of local resources;
- Improve the participatory process in planning to improve the coordination among all the stakeholders;
- Ensure local accountability for development decisions; and
- Provide a framework for M&E.

10. **Planning is undertaken in incremental steps commensurate with capacity, starting with a very simple District Situation Analysis (DSA) under the supervision of District Commissioner, to, when capacity is built, a District Information System (DIS), to monitor and analyze poverty in the district.** The DSA identifies key challenges and opportunities. The DIS will be based on the DSA, a comprehensive District Development and Poverty Reduction Plan, and an Annual Development Plan. In addition, the DIS will also depend on subdistrict structures for the collection of data. The DIS will further form a major input in the monitoring of poverty in the country, informing the Poverty Reduction Strategy Process.

11. **The DDPs focus on poverty reduction through holistic multidisciplinary planning and, among others, also address land use, participatory multistakeholder land use planning, and consensus building, and can also include actual and planned land use maps for the entire district.** The IDDP development in EP is in the early stages with only one draft IDDP completed so far (for Mambwe District).

12. **The project will support baseline studies and preparation of spatial development framework components of DDPs, with a view to integrating land use planning and agreed actions for land use management at local levels, in the DDPs.** During consultations on project design with stakeholders it was agreed that the EPPA would provide budgetary support for the remaining components (capital investment plan and implementation plan) of the development plan, as this work is the core mandate of district councils and the provincial planning department, for which budgets are requested from the Central Government. Accordingly, the ZIFLP will support the following:

- **DSAs.** DSAs have been completed in six of the nine districts in the EP. DSAs in Lundazi and Mambwe were completed recently while those in other districts need to be reviewed and

updated. The project will support updating of DSAs in the districts of Katete, Petauke, Chipata, Nyimba, and Chadiza; and completion of the DSA in Sinda and Vubwi.

- **Preparation of IDDPs.** The project will support preparation of Status Quo Report (baseline study) and Spatial Development Framework components of IDDPs in the districts of Lundazi, Petauke, and Chipata (2017), and Nyimba, Katete, and Chadiza (2018). The boundary demarcation in the newly created districts of Sinda and Vubwi has not been completed and hence a specific proposal for support for district planning is not included. The possibility of joint/combined spatial framework preparation in two or more districts will be explored during implementation. The IDDP process will be closely linked to the local-level land use planning efforts and investments in agriculture, forestry, and wildlife to be supported by the project in these districts.

Support for local planning instruments within districts

13. **Land use planning is an important tool to support landscape management, promoting environmentally sustainable, socially sound and economically viable land uses, and by directing economic activities to where they are most suited.** The purpose is to prepare land use plans (for both customary and state lands) starting from local levels and aggregating to the ward/chiefdom level. Land use planning at the local level will be complemented by action plans for management of land (such as forest and agriculture, as relevant) in accordance with local-level land use planning. Such action plans will identify among others specific activities that communities will undertake for improved management of local resources and will form the basis for support under Component 2, as relevant. Unsustainable land management practices and land use change (for example, forest to cropland) is one of the biggest drivers of emissions in the EP. Previous experiences from the U.S. Agency for Internatioanl Development (USAID) program on land certification and land use planning show that right incentives will be necessary for meaningful implementation of land use planning. The support under this component will therefore be synergistic with the investment support for sustainable management of agriculture, forestry, and wildlife under Component 2.

14. **In the EP, the boundaries of administrative governance units (wards) and customary governance units (chiefdoms) overlap.** Forests as land use are categorized as state owned (forest reserves, local forest, and national parks) and as customary forest. Significant areas under agriculture and forests in rural areas are under customary ownership and have no formal protection. Hence, it is important that land use planning for better management of resource includes lands irrespective of ownership.

15. **Within the decentralized structures, the village is the legally recognized administrative unit at the local level.** Villages are aggregated into wards, and there can be one or more wards within a district. The traditional chiefdom area boundaries overlap with ward boundaries. There may be one or more wards within a chiefdom and one or more chiefdoms within a ward. In consultation with stakeholders in the province, it seems that wards might be the appropriate unit for land use planning as it would allow local-level planning information to be integrated, although the planning process would rely on consultations with the communities within the chiefdom, given that land use allocation decisions of customary lands is vested with the chiefs. Land use plans at the ward or chiefdom level could be consolidated at district level

and would be used to guide action and implementation of various activities and be integrated into DDPs.

16. **The goal of the proposed planning efforts is to use participatory integrated landscape approaches to determine the optimal mix and spatial configuration of land use options at the local level.** Well-designed land use plans at the local level together with established land tenure rights could incentivize land management that has positive impacts on agriculture, energy, forests and woodlands, wildlife conservation, and on livelihoods in selected deforestation and forest degradation hot spots in the EP of Zambia. Land use planning would be an opportunity to establish measures that improve traditional land security and resource rights in accordance with the National Forestry Policy (2014) and Forests Act No. 4 of 2015.

17. **Depending on each area, which differ widely in how they are organized, the 'local level' where the project will intervene could have different definitions.** It will often mean at the village level, with the authorization of the relevant chief, and where the counterpart is the Village Action Group. In areas where communities intend to manage forest resources as allowed by the new Forestry Act, the counterpart organization would be the CFMG. In yet other areas, planning may take place at the level of farmer groups or cooperatives and aggregated communities. Finally, in GMAs, CRBs would be the local entity at which planning would be undertaken.

18. **The project will support bottom-up integrated land use, and action planning starting from the village level and with engagement of communities within the wards/chiefdoms in consultation with traditional authorities and communities and supported by provincial and district planning offices.** Other agencies that will need to engage closely in the planning process will include district agricultural, forest, national parks and wildlife departments, traditional authorities (chiefs, headmen, and so on), ward councilors, and the District Development Coordinating Committees. Some tailoring for engaging the relevant stakeholders in the land use and action planning process will be required to suit the local circumstances, including training community members in participatory mapping and considering the existence of planning instruments prepared under other initiatives and by other actors. The project will draw upon successful examples of spatial planning at local level such as the ones the Zambia Land Alliance has done with USAID support. For example, communities receiving support for establishing customary land tenure rights from the ongoing USAID project in the EP could be the first communities to develop such land use and action plans, and lessons learnt could inform land use planning in other communities. For the integrated landscape approach, it is important to include all wards in the land use planning from the NRM perspective. However, given the limited resources, the project proposes a phased approach beginning with the districts of Lundazi, Chipata, Mambwe, and Petauke, and targeting all wards within these districts. Land use planning will be piloted and tested in the first phase and lessons drawn from piloting in select areas will be used for standardizing the approach for future scale up in other areas. The potential for other partners to collaborate with the GRZ to target other districts will be explored in the first phase of the project. If necessary, wards/chiefdoms to be targeted could be identified through the selection and prioritization process included in the PIM.

19. **Actual land use mapping at the local level and reconciliation/updating of existing maps will require engaging planning experts, mapping/geographic information system experts, community mobilizers, and a facilitator to coordinate various stakeholders and different Government agencies to work together.** Potential criteria for the selection of wards/chiefdoms (and of communities within wards)

to receive support include:

- Wards/chiefdoms that have completed land use planning;
- Wards/chiefdoms in deforestation hot spots with high risk of conversion of natural forests to agriculture;
- Established CFMG/local governance structures; and
- Potential to leverage existing support.

20. **Activities to be financed will include the following:**

- Identifying and selecting wards/chiefdoms for land use planning in the first phase considering areas within a district under GMA and whether or not there is a Game Management Plan. These modalities will be included as guidelines in the PIM to ensure legitimacy and local ownership of the planning process;
- Developing rules and regulations for local implementation of planning instruments;
- Establishing or strengthening local community-level management structures; customary systems responsible for shared resource mapping, land use planning, and management of resources;
- Equipping local jurisdictions in the use of landscape planning tools;
- Undertaking participatory action planning at the local level to understand the landscape;
- Negotiating desired landscape outcomes;
- Using a participatory process, undertake land use planning and action planning for the agreed local level land uses; and
- Using the information from land use planning and spatial development planning to design appropriate participatory management of natural resources (forests and wildlife); and to identify potential entry points for private sector finance in sustainable commodity value chains.

Support for engaging agribusiness

21. **The objective of this set of activities, funded by the BioCF ISFL, is to help farmers integrate into value chains by improving their productivity and ability to respond to the requirements of the main end-markets and major buyers.** Agribusiness companies operating in large outgrower schemes with smallholder farmers are considered valuable potential partners in helping farmers to increase productivity and reduce deforestation. Such companies, including large cotton companies, have stated a business

interest in boosting their smallholder suppliers' productivity and have already invested in these suppliers through extensive outreach networks. The ZIFLP seeks to collaborate with these companies by helping them to identify and overcome strategic and economic barriers in investing in CSA practices that improve productivity, enhance adaptation, and help ensure deforestation-free supply of commodities. The ZIFLP will sign an MoU with interested companies to commit to purchase deforestation-free crops. After signing the MoU, project funds will be used to provide consultancy services to conduct company-specific business case analyses on strategic options for investments and extension services for improving smallholders' productivity. Some identified investments could be financed by the project under Subcomponent 2.1.

Subcomponent 1.2: Emissions reduction framework (Total cost US$2.0 million, all from BioCF ISFL)

22. **Substantial technical requirements must be met for Zambia to eventually sign an ERPA and receive results-based payments (RBPs) for emission reductions at the jurisdictional level in accordance with the methodological guidance and the principles of RBPs.** Under this subcomponent, the ZIFLP will provide funds in the amount of US$3.15 million for development of a number of these required instruments, enhancing Zambia's capacity to achieve and account for emissions reductions. The project will support relevant national entities in negotiations and deliberations leading to signing of the ERPA.

23. **Emissions baseline.** The support for developing an emissions baseline is aligned to the GRZ vision to pilot and test methodological approaches in the EP that could be replicated in other provinces, as the GRZ scales up REDD+ efforts nationally, and transitions to comprehensive landscape accounting as envisaged under the NDC. An emissions baseline will serve as a per ton CO_2e baseline for all land use categories including deforestation and forest degradation across the EP, against which future verified payments for emission reductions will be made, in line with the principles specified in the BioCF ISFL's Methodological Approach.[10] Establishing such an emissions baseline requires a substantial technical analysis of historical land use and land use changes and associated emission factors. A range of issues and key questions need to be considered in designing the emissions baseline. It needs to take into consideration the current situation in Zambia, where various stakeholders are pursuing mitigation activities at multiple scales (national, subnational, and project) including some that aspire to generate and sell carbon credits. In addition, Zambia has submitted its national Forest Reference Emission Level (FREL) for REDD+ and its NDC to the UNFCCC and harmonizing the different approaches will be required in consultation with relevant stakeholders.

24. **The project will provide support for further analytical work to improve data on land use and land use changes, avoiding double counting of emission reductions, and an interim roadmap for moving toward comprehensive accounting in the province.** Key outputs expected are a provincial baseline for REDD+, GHG Inventory of Agriculture, Forestry, and Other Land Use-related emissions for EP using best available data to help establish the relevant contribution of sectors toward GHG emissions; and methodology for accounting emissions from forest degradation (forest remaining forest) that meet the quality requirement of Tier 2 of Intergovernmental Panel on Climate Change (IPCC) guidance.

[10] This ISFL Methodological Approach for GHG accounting (ISFL Methodological Approach) is being developed in consultation with ISFL host countries to provide overarching guidance to the programs selected by the ISFL on how to develop and apply a comprehensive GHG estimation, reporting, and accounting approach within their jurisdiction for the purpose of monitoring and reporting results to the ISFL.

25. **Benefit-sharing mechanism.** A benefit-sharing mechanism will serve as a distribution mechanism for monetary and non-monetary benefits from emissions reduction purchases, including managing revenues received from payments for monitored emissions reductions in the province. Due consideration of options for benefit-sharing arrangements will be required. The decisions reached on incentive mechanisms will inform potential benefit sharing arrangements. The benefit-sharing arrangement that, among others, would comply with the national legal framework and World Bank policies and BioCF ISFL guidance for payment for results would be required. A benefit-sharing plan must be agreed with the World Bank before signing of an ERPA with the BioCF ISFL. Grant resources will support further analytical work and stakeholder dialogues (national and provincial) to finalize the benefit-sharing plan. Support for deliberations on the benefit-sharing plan and signing emissions reductions payment agreement between the relevant Government entity and the World Bank, as Trustee of the BioCF ISFL, will be provided.

26. **The GRZ has initiated the process with a discussion paper on the issues and options for reconciling REDD+ at multiple scales of action in the EP and stakeholder consultations are in progress.** Its recommendations will inform the design of the benefit-sharing mechanism. This includes the technical considerations for REDD+ to operate at multiple scales as well as incentive mechanisms for delivering on actions that will lead to emissions reductions. Several issues including nesting REDD+ projects using carbon or other proxy indicators as incentives is under consideration. GRZ would need to establish a methodological and programmatic approach that coordinates all ongoing and planned emission reductions projects in the land use sector in the EP with guidance and principles for the projects to operate.

27. **MRV system.** To ensure that results relating to emissions reductions are accounted for, including changes over time, an MRV system is necessary. Monitoring refers to the repeated measurements of land use and land-use change and carbon stock changes. Reporting implies the compilation of program performance data in line with the requirements of the ISFL methodological approach. Verification refers to the process of having a third-party external review of project results.

28. **Emissions reductions from agriculture are eligible for payments from the BioCF ISFL, consistent with the ISFL methodological approach under development.** The project will support the establishment of functional systems for accounting of emissions reduction from adoption of sustainable agriculture practices.

29. **FAO has provided substantial support to the GRZ to establish the National Forest Monitoring system and further support has been provided by the Department of State and USAID to improve the capacity of Zambia to report its national GHG emissions to the UNFCCC.** The project will identify and address gaps that still exist in the MRV system, and support will be provided for developing and implementing a work program to improve data collection and overall reporting/accounting capacity, both at the national and decentralized levels, to meet the accounting quality of emission reductions including the following:

- **National level**
    - Test the central national data infrastructure (already created), a data sharing policy and arrangements (draft policy has been developed), and link to utilization of common

geodata standards for GHG monitoring; and

- Support and equip staff of the Zambia Environmental Management Agency (ZEMA) to collate and report on GHG as part of national GHG reporting on land use linked with the work of the FD.

- **Provincial level**

  - Strengthen a working group to facilitate access, assess, and review available datasets identified for their usefulness for monitoring purposes;

  - Strengthen the existing working group at the provincial level where REDD+ implementation and pilot projects are actively building upon other activities and work initiated by the Government; and

  - Equip relevant technical units (provincial forestry and agriculture units) for consolidating data from districts and reporting to the national level.

- **District level**

  - Equip relevant technical units at the district level (forestry and agriculture) on how activity data collection and reporting to the provincial level will be coordinated (trainings for implementation of standard operating procedures, software, and hardware).

30. **Legal framework for REDD+.** Provide support and inputs to Government policy development and the implementation process related to the forest sector, specifically for addressing the drivers of deforestation and sustainable management of forests with a focus on regulations for implementation of CFM agreements stipulated in the Forests Act. These could cover community-based NRM; community bylaws/forest community tenure rights, forest governance support, and policy briefs; enforcement of regulations pertinent to extraction of wood; land use conversion for charcoal; and so on.

31. **Safeguards.** The common safeguards practice across the REDD+ projects moving to RBPs and the future ERPA is described in the SESA. The SESA terms of reference (TOR) have already been developed (building on lessons learned from already completed REDD+ country SESAs) and are tailored to the EP jurisdiction of this program. The SESA will address the key environmental and social issues associated with the analysis and preparation of REDD+ strategy options as well as REDD+ projects, activities (including investments), policies, and regulations. A SESA working group consisting of key relevant Government institutions, CSOs, private sector, and so on, will be constituted before the launch of the SESA activities to provide oversight to the entire SESA process. The Safeguards Frameworks, together with the SESA, Land Study, and Social Impact Assessment will provide inputs for the emissions reduction program based upon the environmental and social criterion and indicators required in the BioCF ISFL Methodological Approach. The project will support provincial-level SESA and associated consultations, and operational costs of a working group established to guide this work.

32. **Zambia is in the process of developing a national SIS.** The SIS is mandated by UNFCCC requirements and will be implemented at a national level and built on existing systems, as appropriate. The SIS will serve as the main repository and information source for all safeguards-related information across the National REDD+ Program, including the EP ZIFLP and will be compliant with World Bank safeguards. The work will focus on two major components: (a) defining the type of information that needs to be collected, stored, and made available in a transparent manner, and (b) determining the platform and functional requirements for establishing the SIS. The UN-REDD is the lead organization for assisting the GRZ with developing the SIS and the consultants are expected to have a design by late 2017. The ZIFLP is not expected to support development of the SIS, but will provide support for integration of World Bank safeguards relevant information into the SIS.

Component 2: Livelihood and low-carbon investments (Total Cost: US$23.30 million: IDA SDR 10.4 million (US$14.1 million equivalent), BioCF ISFL US$1.15 million, GEF US$8.05 million)

33. **Under this component, the ZIFLP will finance training and community-level investments in the rural space of the EP.** The project will promote the adoption of improved land and forest management practices, developed under a landscape approach. Such practices will serve two goals:

(a) Livelihood improvements for some of the poorest rural communities in Zambia; and

(b) A transition to lower-carbon practices, particularly in agriculture and forestry. This transition over the next 10 to 15 years is critical for the EP as a whole to be able to access the future emission reduction payments from the BioCF ISFL and also for Zambia to reach their NDC goals.

34. **Before any investments are made in a community, there needs to be support to planning and community strengthening and attention to land tenure.** This support will be funded through Subcomponent 1.1. Communities will be able to choose activities from a menu of possible investments that will be available to them, tailored according to their geographic location, the type of landscape they are in, and based on available funding allocated to each broad type of investments. The full details of how the selection process will take place at the local level will be outlined in the PIM.

35. **The following sections describe the types of investments available in agriculture, forestry, and wildlife.** Although presented sectorally, it should be noted that the planning for these investments will take place through a landscape lens and they will be implemented cross-sectorally.

Subcomponent 2.1: Agriculture and forestry management (Total cost: US$18.40 million: IDA SDR 8.8 million (US$11.9 million equivalent), BioCF ISFL US$1.15 million, GEF US$5.35 million)

36. **In the agriculture sector, unsustainable farming practices and limited resiliency to drought exacerbates poverty and food security problems.** The agriculture sector is the main source of food and income for rural households in the EP. Farming families typically grow food crops (primarily maize, sunflower, and sorghum) and cash crops (mainly cotton, soybeans, groundnuts, and tobacco). The average yields for all commodities is low, although commercial farms obtain significantly higher yields for some commodities such as maize. Other challenges include limited access to credit, land markets, and price and

market information; inadequate agricultural extension services systems; unsustainable agricultural practices leading to severe deforestation and environmental degradation; and underinvestment in agricultural infrastructure such as irrigation and rural roads.

37. The MAL is responsible for providing extension services throughout Zambia. At least one extension officer position is attached to each of the 346 agricultural blocks and the 1,757 agricultural camps within the blocks across the country. Of the 239 camps in the targeted districts of EP, 194 are staffed, resulting in a vacancy rate of 19 percent as shown in the table 1.1.

Table 1.1. Agricultural Extension Staffing Levels in the Districts of EP

District	Block	Camp	Manned	Vacant	Vacancy Rate (%)
Chipata	8	58	54	4	7
Katete	4	20	20	0	0
Lundazi	5	44	26	18	41
Mambwe	3	14	12	2	14
Nyimba	3	16	14	2	13
Petauke	5	37	22	15	41
Chadiza	2	16	12	4	25
Sinda	4	24	24	0	0
Vubwi	2	10	10	0	0
Total	**36**	**239**	**194**	**45**	**19**

38. **Only a small number of staff have been trained in CSA approaches leading to a CSA capacity gap in the EP.** Even though some private sector organizations like COMACO and donor-funded projects provide extension-like services, the support is still inadequate to bring about needed change in reduced deforestation, adoption of CSA practices, and the associated benefits. The resulting low agricultural output per capita leaves impoverished households with even less seasonal income and food insecurity for about three months each year.

39. **This component aims to scale up CSA practices for smallholder farmers through financing support for interventions that increase agricultural productivity, enhance agro-ecosystem resilience, and reduce GHG emissions.** The component's objective would be achieved through the introduction of tested best practices in CSA and sustainable land management. Project funds will focus on introducing a train-the-trainers approach. The project will strengthen agricultural extension by addressing the CSA skills gap of extension officers, who will train lead farmers in their agricultural block, who will then train follower farmers. Extension officers and farmers will have access to targeted trainings (for example, workshops) and field-based learning (for example, site visits, demonstration plots, and pilots) provided by competent institutions such as Zambia Agricultural Research Institute (ZARI), Consultative Group on International Agricultural Research (CGIAR), and relevant NGOs, among others. Specific interventions the component will focus on include: (a) training for CA and ISFM practices, (b) training and inputs for agroforestry, and (c) training for agriculture and marketing value chains.

40. **In addition, the project will provide funds for these activities and other livelihood activities through community grants and technical support consultancies.** Communities (on average, 25 people), such as existing cooperatives, women's groups, producer organizations, or newly established groups, will be eligible to receive matching grants to conduct livelihood interventions such as CSA, introduction of poultry or small ruminants, small-scale agro-processing, and small-scale irrigation. The groups will be supported by service providers in group formation and management, identification of suitable interventions and proposal writing, and through implementation of the selected interventions. The upper threshold of grants is US$5,000; the groups are required to match the grant with a 10 percent in-kind contribution. The procedures and eligibility requirements will be outlined in the PIM. As described under Subcomponent 1.1., the project will support the identification and matching of service providers, which could include NGOs, CSOs, CBOs, vocational training institutions, small and medium enterprises, or specialized agencies who, upon demand, could provide tailored support to suit community needs.

Climate-smart agriculture (Total Cost: US$9.80 million: IDA SDR 4.76 million (US$6.45 million equivalent), BioCF ISFL US$1.15 million, GEF US$2.20 million)

41. **CA and ISFM.** The focus of this intervention is to enhance the income and livelihoods of beneficiary communities and farmers through sustainable, climate-smart income generating and value-added activities both off-farm and on-farm. Various soil fertility management practices will be integrated as a package, promoted and implemented according to the local conditions and farmers' indigenous knowledge. These include minimum tillage, manure application, composting, mulching, cover cropping, crop rotation, intercropping, and the use of improved varieties combined with organic and chemical fertilizers, which will be made available for the farmer field schools as well as for the lead farmers.

42. **Technical and financial assistance will be provided to** stabilize soils and increase fertility; improve water retention, harvesting, and infiltration; increase biomass (especially carbon) accumulation above and below ground; and promote the adoption of climate-smart tillage and production practices in farm plots and home gardens. To ensure the attainment of these objectives, the following key activities will be supported:

- **Soil and water conservation measures.** This includes promotion and adoption of CA technologies for improved tillage, seeding, and crop protection practices. These technologies will minimize soil disturbance through conservation or zero tillage, reduce soil exposure to water erosion, promote intercropping, reduce use of pesticides and chemical fertilizers, and generate climate change mitigation benefits. Project funds will support investment in (a) strengthening capacity for CA planning and prioritization in targeted districts; (b) procurement of improved seeds; (c) promoting crop diversification; and (d) mechanization of farming using appropriate tillage implements.

- **Soil fertility management services.** Activities will focus on addressing the capacity gaps in supporting and improving soil fertility practices and services. Project funds will support investments in (a) strengthening soil testing and mapping capacities for improved fertilizer application (TA, critical equipment, information technology and software, and networks); and (b) strengthening soil testing (critical equipment [kits and supplies, technical support, and skill development).

- **Strengthening of agricultural extension and advisory services.** The activity will focus on contributing to bridge physical and skill gaps in NRM and soil fertility management. The project will support capacity-building interventions for local communities in NRM through different combinations of the following: (a) awareness creation and training; (b) provision of field and office equipment and critical supplies; (c) building technical capacity of national- and local-level technical departments staff through short- and long-term training and exposure visits; and (d) provision of extension services such as demonstrations, field days, 'hands-on' exercises, exposure visits, and study tours. Central to the project's capacity building efforts is the use of the lead-farmer extension approach in which farmers help disseminate information that their fellow farmers can use to help increase agricultural productivity. The involvement of farmers in implementing extension services will help overcome the problem of inadequate staffing levels in public extension services in the EP. Lead farmers can reach larger numbers of farmers at a lower cost; improve interaction by mobilizing farmers, leading Farmers' Field Schools, and disseminating information to them; facilitate the adoption of CSA practices; and enhance the sustainability of extension efforts. The role of extension officers under the lead farmer approach will include training and following-up on lead farmers; packaging technical messages; conducting trials with lead farmers before scaling up; and carrying out a quality inspection of the work of lead farmers. The role of lead farmers will include motivating other farmer to try new technologies; and leading by example by practicing what they are taught on their own fields.

- **Support for integrated agricultural and forest research.** Additionally, the project will support targeted capacity building in integrated landscape management.

43. **Extension workers, lead farmers, and farmers have different training needs in terms of raised awareness, sensitization to the issues, and detailed technical training:**

- Awareness-raising, in which the participants acknowledge the significance or relevance of the issues, but are not required to have technical or in-depth knowledge of the issues;

- Sensitization, in which the trainees become familiar with the issues to a sufficient extent that allows them to demand their precise requirements for further TA; and

- In-depth technical training to a level that allows trainees to go on to train others, including technical procedures, and take action.

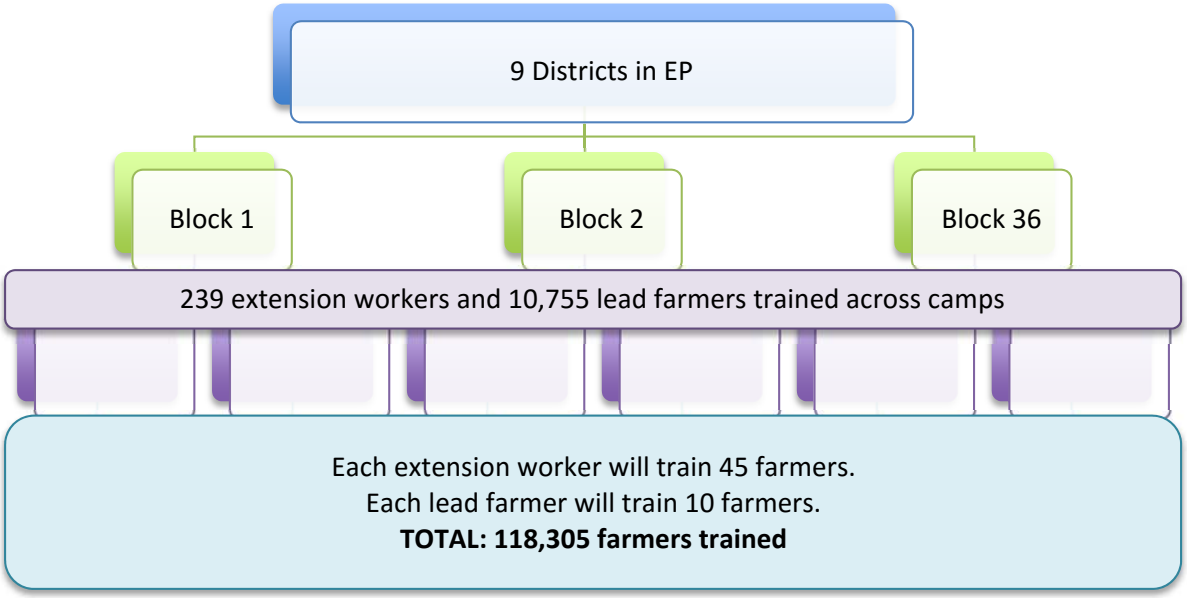
44. **The objectives of the training include:**

- Support stakeholders to prioritize their needs, and to identify, prepare, implement, and manage the environmental and social aspects of their farms; and

- Strengthen local stakeholders and extension teams to provide technical training to communities.

45. **The project will train 239 extension staff who will each in turn train 45 lead farmers across the EP.** Each lead farmer will train 10 farmers, resulting in more than 107,550 farmers trained (see Figure 1.1). Lead farmers will receive non-cash incentives for every new farmer they recruit and train, based on verification of approved CSA practices. Those who remain supportive throughout the farming season and produce the best results will be chosen to be part of a smaller group of lead farmers to serve as commodity purchasing agents that sell crops to off-takers.

Figure 1.1. Training Using the Lead Farmers Approach



46. **Agroforestry.** Trees in the farming system can help increase farm incomes and diversity production, thus mitigating production and market risk associated with one commodity. The project will support the integration of tested tree species with crop production in the targeted districts of EP. This will diminish the effects of extreme weather events such as heavy rains, droughts, and wind storms. It will also help prevent erosion, stabilize soils, raise infiltration rates, and halt land degradation. They can enrich biodiversity in the landscape and increase ecosystem stability. Greater yields and reduced variability can be expected on adjacent croplands and better rainwater management in the medium to longer terms. The following key activities will be supported:

- **Establishment of seed multiplication and tree nurseries.** This includes promoting and supporting the establishment of tree nurseries for increased planting material/seed/breed multiplication. Project funds will support investments in (a) critical equipment and supplies for the nurseries; (b) on-site demonstrations, training, and technical advice to farmers; and (c) training for business development plans for nurseries.

- **Promoting sustainable tree species.** Trees can sequester substantial amounts of carbon and store it for longer periods than annual crops in the biomass of roots, stems, and branches.

Certain tree species like *Faidherbia albida, Tephrosia vogelii*, and *Gliricidia sepium* can be used as natural nitrogen fixers and for improved fallows. Project funds will support investment in (a) procuring saplings; (b) training for plantation establishment; and (c) capacity building on combined ISFM and agroforestry.

- **Scaling up Farmer-Managed Natural Tree Regeneration (FMNR).** FMNR is the practice of managing naturally regenerated trees on crop fields. FMNR benefits include: (a) annual deposits of organic matter from yearly tree pruning, nutrient recycling, and hydrologic lifting of soil moisture;[11] and (b) provision of high-quality browse and fuel wood, as well as other bioenergy products. Project funds will support investment in further promotion of FMNR in targeted districts. Specifically, the project will support planting of woodlots with fast-growing tree species (for example, *Albizia lebbeck, Acacia polycantha*) for fuelwood.

47. **Market access and private sector engagement**. The objective of this set of activities, building on the support for engaging agribusiness (see above under Subcomponent 1.1), is to support small-scale farmers to integrate into value chains by improving their productivity and ability to respond to the requirements of the main end-markets and major buyers. These activities will be coordinated closely with the recently approved Zambia Agribusiness and Trade Project (P156492). The ZIFLP will promote market linkages for the farmers and enhance access to improved seeds and other inputs through support to community agro-dealers. The project will also support the procurement and installation of crop processing plants for grains, fruits, and vegetables and the installation of storage facilities to reduce postharvest crop losses and enable farmers to supply commodities at the quality desired by the markets.

48. **Developing community enterprises.** Private sector development at the community level will also be needed. Currently there are numerous varieties of community enterprise development models across the EP, and across all of Zambia, that are potentially applicable to the objectives of the ZIFLP. Models of interest include those that utilize community-driven production of non-timber forest products and CSA products to be sold on private sector markets. The project will identify and support the establishment of five community enterprises to demonstrate results for natural resource conservation, livelihood improvement, and financial sustainability. The ZIFLP will provide seed capital for establishing the community enterprises. Funded projects must demonstrate community enterprise scalability but will not reserve funding for future expenditures on community development. It is intended that these five community pilots will help improve the enabling environment for community enterprise development by generating a community model risk profile for other donors or private investors to replicate with future investment.

Forestry management (Total cost US$6.40 million: IDA SDR 2.40 million (US$3.25 million equivalent), GEF US$3.15 million)

49. **The forest sector is important for rural livelihoods in the EP as forest goods and services provide**

[11] Research in Senegal shows that the root systems of some trees lifts soil moisture toward the soil surface; for details see the following source. Kizito, F., Dragila, M.I., Sene, M., Brooks, J.R., Meinzer, F.C., Diedhiou, I., Diouf, M., Lufafa, A., Dick, R.P., Selker, J., Cuenca, R. 2012. Hydraulic redistribution by two semi-arid shrub species: Implications for Sahelian agro-ecosystems. Journal of Arid Environments 83: 69 – 77.
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food, medicine, shelter, fuel, and cash income for rural populations, particularly the poorest rural inhabitants. Forest-based activities such as carpentry, beekeeping, and timber and rattan sales provide more than 50 percent of the average household income in some rural areas of the province. Mushrooms, fruits, leafy vegetables, tubers, and insects collected from the province's miombo woodlands are widely consumed by rural households and enrich their starch-based diets with important vitamins and minerals. Non-timber forest products are especially important for women as a source of income and food for families. These foods are often available at the start of the rainy season and thereby serve as an important source of nutrition when food stocks are low. Most forest product harvesting and sale is seasonal, providing cash income at different times of the year.

50. **However, the province's deforestation rates pose threats to rural livelihoods.** The loss of forests is also the leading source of GHG emissions in Zambia. The deforestation rate in the EP is 0.9 percent forest cover loss per year, one of the highest of the provinces in Zambia. Deforestation is primarily driven by agricultural expansion and unregulated fuelwood harvesting and indirectly by a growing population. Areas opened up for fuelwood harvesting are not immediately deforested but tend to open the way for smallholder agricultural expansion and human settlement.

51. **There are opportunities for slowing current trends of forest loss.** This would help ensure economic returns both at the state and community level and also generate benefits for biodiversity and sequester carbon. Empowering local actors to conserve their own forests, if they have a stake in their management and use, has good potential. The 2014 Forests Act recognizes local communities' participation as key to sustainable forest management through CFM in open areas on customary lands and JFM of protected forests (local and national forest reserves). However, there have been few instances where the concept of CFM has been tested and made operational. Better state management of forest reserves, many of which are poorly managed, also can slow deforestation and forest degradation.

52. **The purpose of this set of activities on forestry management is two-fold:** (a) to assist the FD to better carry out their functions and to manage select forest reserves for which they are responsible; and (b) to assist local communities to improve the management and conservation of their forest resources and create income opportunities.

53. **As for all investments under the ZIFLP at the community level, forest management investments will be rooted in the participatory planning exercises supported under Subcomponent 1.1.** The planning at district and local level will identify which communities are interested in piloting community-led management of forests and all investments to be supported will have be broadly consistent with these participatory plans. Additionally, as secure land tenure is often a prerequisite for community members to make the long-term commitments that are inherent to forest management, investments here will be informed by work under this project on land tenure and resource rights regularization (see below, paragraphs 61 to 68). More specifically, under forestry management, the ZIFLP will support the activity clusters described in the following paragraphs.

54. **Capacity building of FD.** The FD directly manages forest reserves of Zambia, a significant portion of all the forestlands of the country, and under the new Forestry Act must also assist communities to locally manage forests under plans to be agreed between the communities and the FD. The FD in the EP is severely understaffed and underequipped to perform these functions. For example, there are, on

average, only two forest officers in each of the nine districts of the province. The project will support the EP FD through provision of training to forest officers, operating costs, and equipment. Although the National Forestry Policy has only recently been passed, Zambia is lacking regulations and guidelines in some key areas that are instrumental to the success of the ZIFLP. The project will provide the FD support in developing these regulations and guidelines (for example, these could include regulations on beekeeping and private forest management and guidelines for CFMGs and for JFM).

55. **Management of forest reserves.** The FD in the EP is responsible for the management of the forest reserves, of which two are contiguous with LNP and part of the complex of protected areas that is the focus of this project. These are the Lundazi National Forest and Chimalilo Local Forest. The ZIFLP will support the FD to improve the management of these two forest reserves. Support will include demarcation, preparation of participatory management plans, infrastructure development (ranger stations and housing), maintenance of tracks, operational costs, training, support to patrols, fire management, and equipment.

56. **Forest Management Plans.** The project will support the development and implementation of forest management plans (CFM or JFM). Based on the participatory planning exercises described under Subcomponent 1.1, CFMGs will be established as based on the Forest Act of 2015. The project's support will include formal establishment and registration of CFMGs. Once established, the ZIFLP will assist the CFMGs to prepare forest management plans, in collaboration with the FD. A maximum of about 2 CFMGs/districts could be supported by the project, with an overall maximum of 15. The plans would follow the guidelines and specifications established in the Forest Act and its regulations. Each CFMG could determine how the plan would be prepared, but in most instances a service provider would be contracted to provide assistance and technical training. The Forestry Act allows for the naming of 'Honorary Forestry Officers' at the community level, voluntary positions for potential community leaders. The project would support such persons with training to help ensure the sustainability of community-level investments. Once prepared, the project could provide limited support to the implementation of the plans, often through community matching grants. Two sets of potential investments discussed in the following paragraphs describe two groups of activities that are expected to be typically included in each forest management plan.

57. **Community forestry enterprises.** Based on the assessment and productive potential of natural resources identified in forest management plans, the project will finance small-scale investments that fulfill the dual criteria of generating monetary and non-monetary income, thus establishing a value for standing forests, and generating carbon-related benefits. Support will include TA for market studies, establishment of small community enterprises, and training in commercialization skills. Investments under this category may include the cultivation or extraction of any forest or non-timber product that could be sustainably managed in the communal forest area of reference. Some examples include beekeeping, sustainable charcoal, woodlots for fire wood production, nurseries, biodigesters to mitigate biogas demand, carpentries for furniture, medicinal herbs, ecotourism and recreational activities, commercial timber plantations, grass harvesting, grazing of animals, and so on.

58. **Dissemination of improved cookstoves.** Fuel-efficient cookstoves improve indoor air quality and save money or time that would otherwise be spent on purchasing or collecting fuelwood. However, finding an appropriate cookstove to use requires that economic, social and environmental considerations

are taken into account. Potentially, improved cook stoves can reduce fuelwood consumption, with each stove generating an estimated GHG emission reduction of about 1.9 tCO_2e per year. In order to ensure that the project responds to the needs of communities and supports the development of appropriate cookstoves, the following activities will be undertaken:

- Assess the potential use of improved stoves based on current use;
- Identify gaps that need to be addressed in the design of the stoves;
- Design and/or recommend appropriate models;
- Identify areas for implementation;
- Design incentive mechanisms for prospective users;
- Produce, distribute, and install in selected households; and
- Monitor and report on use and performance.

59. **Fire management and prevention.** Fire is an important element in rural landscapes, and, when managed properly, it can be beneficial for agriculture. However, when poorly managed, it can destroy forests and generate carbon emissions. To reduce this risk, the project will support activities to revive and enforce village level fire ordinances that were functional and effective in the past, and draw upon the lessons from other regions to prepare community bylaws on fire management. The project will also support local governments and communities on training and incentives for fire management and prevention and financing small works and equipment for fire line clearance and maintenance.

Regularization of land and resource rights (Total Cost: SDR 1.62 million (US$2.2 million equivalent), all IDA)

60. **Legally secure land rights are essential for sustainable land management and increases in productivity of land use.** Yet, under Zambia's current legal system, the scope for many groups to formally secure their land rights is limited. This undermines the scope for effective land use and good governance. Building on pilots that have already been implemented, this cluster of activities will provide analytical and TA support to carefully evaluate, and where necessary, expand past any ongoing efforts at documenting land rights in support of the National Land Titling Program and in parallel to other activities supported by the World Bank to enhance title-based revenue collection. This in turn should help develop the regulatory and institutional preconditions for a larger-scale effort of rural land rights registration that could form the basis for more substantial support to the National Land Titling Program. This will be achieved by (a) developing cost-effective systems to sustainably manage information on land rights and link it to land use; (b) identifying new ways of private sector engagement based on an assessment of the extent and impact of existing arrangements including realistic land valuation and revenue collection; (c) designing ways of documenting different types of land rights in ways that are supported by local stakeholders, by providing incentives for sustainable land use and intensification as appropriate and can be sustained; and (d) exploring ways to link land rights documentation to key parameters of land use (crop cover, soil moisture, and soil carbon) using remotely sensed imagery. The latter will include carrying out of social, legal, and institutional risk assessments, and monitoring and independent verification of the impact of different types of interventions, particularly for vulnerable people like women and youth. The activities are further elaborated in the following paragraphs.

(i) Develop systems to manage data on land rights

61. **Zambia's 1995 Land Act vests land in the President and provides legal recognition of two categories of tenure: state and customary land.** The majority of EP is administered through customary law by traditional authorities who have legally recognized authority over land administration in these areas through the Chiefs Act and Village Act. Customary authority is an accepted, legitimate, and functioning part of state processes, but is also operating largely without any documentation, rules, or legal support. In addition, the state administers leasehold titles within chiefdoms on land (farms, mining concessions, and other uses) that has gone through the process of 'conversion' under the 1995 Land Act from customary tenure to leasehold tenure. Conversion of land is based on consent from both the local traditional authority and the district council and is a one-way process; leasehold tenure does not revert to customary tenure, nor can leaseholds be canceled due to lack of follow-through with provisions of initial agreements.

62. **There has been increased interest from the Government, traditional authorities, and local stakeholders to protect the rights of stakeholders as a means to encourage development and effective land use.** Systematic documentation of customary rights could be an attractive way of achieving this goal and, since 2015, USAID has been piloting a process of identifying and documenting customary landholdings in four chiefdoms of Zambia's EP, in close collaboration with local stakeholders.

63. **Documenting and rigorously evaluating the processes developed in this context could provide invaluable inputs into the ongoing policy discussion on how to document existing customary land rights, and managing large amounts of data could be invaluable for the National Titling Program.** To make these useful, it will be necessary to develop arrangements for managing such data, in particular to record transactions, and to have clarity on the legal status of such information. Building on discussions with chiefs, local communities, and the Central Government and a review of the innovative arrangements currently piloted under different projects, this activity will identify institutional arrangements that can ensure land data maintenance and link them to the Zambia Integrated Land Management Information System (ZILMIS). It should also be possible to propose steps to be taken in terms of policy and the regulatory framework to ensure data have legal value and institutional arrangements at different levels are clearly designed.

64. Key activities will be:

(a) **Documenting current modalities to record land rights.** An assessment of current ways to document rights, their acceptance by local communities and consistency with economic (for example, on transferability) and social values (for example, on gender), potential links to ZILMIS, and maintenance arrangements would be conducted and compared to (potential) investors' demands as obtained through focus group discussions and formal surveys.

(b) **Options for recording/updating existing rights.** A study will be undertaken to identify options to record existing rights at different levels (chiefdom boundaries, key natural resources, family/individual holdings), ways to link them to fiscal obligations (for example in terms of land taxes), and make provisions that could also accommodate recording of transfers in line with the legal framework. Ideally, this would result in a data model and

specifications for relevant software to inform the Government's National Land Titling Program.

(c) **Program management, legal drafting, and stakeholder engagement.** To support a consistent and sustainable approach to land rights recording under the National Land Titling Program, the project will support program management, legal drafting, and stakeholder consultations. A series of discussions with relevant stakeholders (including actual and potential private investors) will be conducted, facilitated by a high level working group on land under the Ministry of Finance (MoF). This will help identify options to document and update rights and manage such documentation sustainably.

(d) **Development of routine monitoring mechanisms.** To monitor land governance on a routine basis and in a way that feeds into the Government's priorities as well as global goals such as the Sustainable Development Goals, the project will develop software to routinely and publicly provide information on the status of land rights, collection of associated fees and taxes, land valuation, and efficiency of land use. To do so, the scope for using freely available high frequency satellite imagery (Sentinel 1 or 2) will be determined to assess changes in land cover, soil moisture, and carbon stocks over time and to scale up as needed. Such tools could help assess the impact of existing land transfers and the utility of USAID's pilot as a basis for a low-cost, routine reporting mechanism.

(ii) Identify regulatory issues for sustainable private sector arrangements

65. **Zambia's current regulatory framework implies that formalization of any agreement between local chiefs and outside investors will result in conversion of the land to a leasehold that will remove it from the chief's authority and require that investors pay ground rent.** This reduces chiefs' as well as investors' incentives for formalization, and anecdotal evidence suggests that an enormous number of such transfers remain informal. Beyond reducing Government revenue and encouraging speculation, this may also discourage investment and productive land use as investors are subject to a threat of opportunistic behavior. Failure to design arrangements that benefit all parties may pose significant obstacles to the ability to systematically marshal private sector support to low-carbon land management. To address this, it is necessary to document the impact of existing arrangements, including the model tested by the Irrigation Development and Support Project (P102459), which entail pooling of community land, forming a trust, and leasing a portion of this land to investors, and use this to design alternative scenarios that would be an improvement for everybody and then use these to initiate a discussion with stakeholders on regulatory arrangements needed to put these into practice.

66. Main activities will be:

(a) **Characterizing formal and informal arrangements for large farms and their impact.** A complete listing and boundary recording of all formal and informal transfers will be undertaken in a select number of districts to quantify the extent of such transfers and assess their impact by linking them to other administrative, survey, or remotely sensed data. This will in particular allow to quantify: (i) the extent of speculative land holdings and the extent to which such holdings are linked to informality; (ii) associated losses of public revenue or

productive investment; and (iii) scenarios that might help to harness a higher share of these benefits.

(b) **Exploring alternative regulatory frameworks.** Based on evidence regarding actual transfers, the project will support drafting of regulations that are in line with the goals of improving efficiency of land use and revenue collection and implementation arrangements that more effectively align different stakeholders' incentives for implementation of land-based agricultural investments that maximize local benefits.

(c) **Stakeholder engagement.** Results from the analysis as well as alternative regulations will be disseminated among stakeholders at central and regional levels through seminars, policy briefs, and workshops.

(iii) Support identification of land rights in select districts of EP

67. **Different mechanisms to identify and map local land rights would be tested in the ongoing USAID pilot in the EP.** This will build on operational lessons from the USAID intervention to assess legal knowledge, perceived tenure security, demand for land rights formalization along different dimensions, and potential impact of more secure land rights**..** Both the process and impact of doing so will be carefully evaluated to provide a more robust basis for district land use planning and forest community enterprises, so as to make project communities eligible for investment support under the project.

(a) **Assessment of demand for different types of formalization.** To get a nationally representative assessment of demand (including willingness to pay) for formalization of land rights by different groups, relevant questions would be included in national household and farm surveys and USAID's impact evaluation of their interventions in EP.

(b) **Development of a rural regularization manual.** Existing experience with documenting local rights will be codified in a manual, with reference to global best practice as needed. Based on a mapping of work flows and approvals, ways to optimize the process and give it greater formal legitimacy will be explored.

(c) **Land rights mapping in select districts/traditional areas.** Once a promising and scalable process has been identified and validated with input from various stakeholders (including the scope to anchor it in regulation and a rigorous social assessment), it will be used to complete the USAID intervention by also mapping land rights of the control group and test mechanisms for updating the land information in selected districts of EP. The appropriate implementation design would allow analysis of the economic and social impact of doing so.

(d) **Stakeholder engagement.** Feedback from stakeholders at national and local levels would be sought throughout the process.

Subcomponent 2.2: Wildlife management (Total cost US$4.9 million: IDA SDR 1.62 million (US$2.2 million equivalent), GEF US$2.7 million)

68. **The EP contains large parts of the globally significant biodiverse Luangwa Valley, and supports one of Zambia's highest revenue-generating parks (South Luangwa National Park).** The wildlife sector in EP provides substantial income to the EP mainly from tourism and hunting activities. A recent study conducted by The Nature Conservancy valued the South Luangwa Park's tourism activity at US$20 million per year. However, tourism revenues accrue disproportionately to private lodge owners and to the travel and hotel sectors and thus does little to alleviate the poverty in nearby communities. Increases in food insecurity and high poverty levels have driven increased poaching of wildlife for bush meat consumption and illegal wildlife trade. Deforestation from fuelwood harvesting and smallholder agriculture expansion have also reduced the suitable habitat area for effective wildlife management. Human encroachment is extending toward national parks from major roads as fast as 2 km per year. This is threatening protected area buffer zones, decreasing wildlife connectivity, affecting the viability of transfrontier conservation areas (TFCAs), and driving accelerated deforestation and associated GHG emissions.

69. **Hunting revenue, though intended to be shared with communities through CRBs, has historically largely been used to fund budget shortfalls within the Zambia Wildlife Authority, now the DNPW.** As a result, communities have had insufficient incentives to protect wildlife resources. The Wildlife Act of 2015 redefines the roles of CRBs and opens up new opportunities, which have not been tested to a large extent in Zambia.

70. **The ZIFLP includes funding for three broad areas in support of biodiversity conservation and wildlife management:**

(a) Support for the national protected area system;

(b) Community management of wildlife; and

(c) Management of protected areas.

71. **Support for the national protected area system.** The ZIFLP does not have the resources to broadly support the Zambian national protected area system but is contributing resources to several specific initiatives at a national level to help ensure more sustainability for the EP protected area investments by strengthening the overall system. The investments in the protected area system and in development of national tourism could be preparatory to the development of a future World Bank-supported investment program and are complementary to studies previously supported by the African Development Bank. Specifically, the project will:

- Undertake a thorough review of options for long-term financing of the park system,
- Implement suggested high-priority options, such as design of a national conservation trust fund,
- Develop a joint national parks/ecotourism strategy,

- Fine-tune existing assessments of the biodiversity conservation priorities for the country to better-target scarce resources for the protected area system,
- Improve the biological information network for the country, and
- Dedicate resources for preparation or projects in the wildlife/nature tourism sector, on request of the GRZ.

72. **Community management of wildlife.** Under this part of the project, the ZIFLP seeks to promote practices which will maximize opportunities for rural communities from adjacent wildlife resources and which will be positive for biodiversity conservation. Three sets of activities are included.

73. **Support to CRBs.** CRBs can be created under the authority of the Wildlife Act to represent communities in activities related to the management of wildlife resources. They are intended to act in partnership with the DNPW. Established in GMAs, they have historically derived income only from hunting but other activities could also generate economic returns for communities.

74. **The project would support the creation of CRBs or the strengthening of existing boards and would support them for a limited number of activities, in part through community matching grants.** It should be noted that in some areas, there could be a potential overlap between the membership and function of CRBs and CFMGs, described above under the forest management component. During implementation of the planning at the community level, only the most appropriate community-level organization would be supported. GMAs surrounding the western border of LNP would be prioritized and the project is expected to support three CRBs.

75. **The ZIFLP support would include training, consultations, and support to community forest guards, equipment, and development of wildlife-based enterprises.** These could include commercialization of hunting, ecotourism, and photo safaris; support to subsistence hunting; and access to non-timber forest products (mushrooms and honey).

76. **This part of the subcomponent investments will focus on rural communities of the EP near LNP.** It should be noted that the activities to be supported will, in most cases, take place in the same communities targeted for agriculture and forestry investments and the various activities will be planned and implemented in coordination and to enhance synergies. If the communities desired, support could be extended through service providers.

77. **Management of Human Wildlife Conflict (HWC).** In all areas currently contiguous to LNP, there are low levels of HWC, notably damage to crops from elephants, buffalo, and other species. As wildlife numbers start to increase in the park, the potential for HWC and for negative interactions with surrounding communities will increase. A vast amount of experience in managing HWC has been accumulated in Zambia and in surrounding countries, in use of appropriate and effective technologies, which however need to be tailored to the exact situation in each area. The project will support efforts to diminish the impacts of HWC on human communities by supporting consultations, implementation of effective techniques, study tours to visit areas that have implemented effective HWC measures, and awareness raising.

78. **Support to Community Conservation Areas (CCAs).** Communities on the eastern side of LNP, with support of their chiefs, have created four CCAs, east-west strips that connect LNP to Kasungu National Park in Malawi. These areas of enhanced forest cover would serve both a conservation purpose and would generate benefits for the communities that have created them. They happen to constitute potential biological corridors between the two parks and are thus immensely important to the long-term ecological survival of the ecosystems of the two parks. Each of the four CCAs have lower densities of human occupation than surrounding areas and each are inhabited by about 125 households.

79. **The effort to create and support the CCAs has in part been supported by COMACO.** The project would extend support to this initiative with the following elements of support:

- Consultations
- Support to voluntary resettlement of some households out of the CCAs
- Development of financial incentives for the communities (payments for movement of animals, limited access to resources)
- Support to communities outside of the CCAs
- Demarcation of CCAs
- Arranging (through the DNPW) economic incentives for communities to be derived from LNP

80. **Under management of protected areas, the project will focus investments on two key protected areas of the EP: LNP and Luambe National Park.** Both fall within the Malawi/Zambia Transfrontier Conservation Area (MAZA) adopted by the Governments of Zambia and Malawi. The MAZA is currently being supported by a World Bank GEF-funded project (the Malawi/Zambia Nyika Transfrontier Conservation Area Project, P108879) and major additional funding is coming from *Kreditanstalt für Wiederaufbau* (KfW). However, the current and proposed funding for the MAZA does not include LNP, Luambe National Park, and surrounding conservation areas. It should be noted that a sister GEF-funded project in Malawi, also implemented through the World Bank, is now in preparation and will similarly support that country's Kasungu National Park, also a part of the MAZA. This complex of protected areas is biologically connected to Zambia's globally important protected areas of the Luangwa Valley. The project will support three clusters of activities as described in the following paragraphs.

81. **Support for LNP.** Although one of the larger national parks in Zambia, with excellent long-term potential for biodiversity conservation and ecotourism, LNP receives little support through Government funding and is in urgent need of investments to establish even the most basic management of the park. The project will provide funding through the DNPW to provide support to the park. It should be noted that an 18-month project, funded by the German Agency for International Cooperation (*Deutsche Gesellschaft fur Internationale Zusammenarbeit*, GIZ), is currently under implementation, which is helping to prepare the park management plan and make other basic investments in the park. The ZIFLP will work closely with this project to complement its efforts and build on its achievements. The ZIFLP will support:

- Preparation of park management plans (building on plans financed by the GIZ project),
- Investments in infrastructure such as guard houses or other park buildings, upgrading of existing roads and tracks to facilitate park management and ecotourism, provision of water holes, and fencing (only in limited areas where judged necessary to minimize HWC),
- Purchase of equipment such as radios for communication, park guard equipment, patrol equipment, and so on,
- Support to park patrols, with a particular focus on management of poaching, and
- Support to binational initiatives with Malawi for joint management measures within the existing framework of the Nyika Transfrontier Conservation Area and the long-term creation of biological connectivity between Kasungu National Park in Malawi and the Luangwa valley complex of protected areas in Zambia.

82. **Support for Luambe National Park.** On the edge of the globally important South Luangwa National Park, Luambe National Park is both an important extension of Luangwa and a major part of the biological corridor that connects the Luangwa Valley to LNP. The project will support the DNPW with the management of Luambe National Park, with the same range of investments, as noted above for LNP.

83. **Livelihood restoration.** The project's PF outlines the process for providing livelihoods-related support during project implementation to people affected by project-induced restrictions of access to natural resources within protected areas. As part of this process, project implementation will include the preparation and subsequent implementation of LRPs, which will provide tailored livelihood support and benefit sharing for nearby communities. In cases where well-organized communities have produced their own investment plans (for example, CRBs), this livelihood support will be channeled through the appropriate funding streams under other parts of the project. The LRPs prepared under this project will consider any ongoing livelihoods-related support from other sources.

Component 3. Project management (Total cost US$3.15 million, SDR 2.14 million (US$2.9 million equivalent) IDA, US$0.25 million BioCF ISFL)

84. **This component will finance activities related to national and provincial-level project coordination and management,** including Annual Work Plan and Budget (AWPB); fiduciary aspects (FM and procurement); human resource management; safeguards compliance monitoring; M&E and impact evaluation studies; knowledge management; and implementation of strategies for communication and citizen engagement.

85. **Funds will cover the cost of the management unit's contractual staff, and operations and maintenance costs, such as office space rental charges, fuel and spare parts of vehicles, office equipment, furniture, and tools, among others.** It will also finance the costs of project supervision and oversight provided by the National Project Steering Committee (NPSC) and National Technical Committee (or the Provincial Project Steering Committee), and other project administration expenses.

Subcomponent 3.1: National Project Unit (Total cost US$0.65 million, SDR 0.29 million (US$0.4 million equivalent) IDA, US$0.25 million BioCF ISFL)

86. **This subcomponent will finance the costs and activities specific to the National Project Unit (NPU).** Funding is also reserved for the NPU to support the preparation of possible follow-up investments or projects, including the preparation of background studies, project documents, and necessary consultation processes.

87. **The NPU will also have primary responsibility for a web-based and smartphone-based M&E system for collecting and processing information to verify the inputs, output, outcomes, and eventually the impacts of project activities over time.** In addition to the routine M&E functions such as data collection, analysis, and reporting, this subcomponent will also finance the baseline, midpoint, and end-of-project impact evaluations; and on-demand thematic (quantitative, qualitative, and quality of implementation processes) studies.

Subcomponent 3.2: Provincial Project Implementation Unit (Total cost SDR 1.85 million (US$2.5 million equivalent), all IDA)

88. The activities to be included in this subcomponent are the same as those enumerated above but specific to those for the PPIU.

Component 4. Contingent emergency response (Total cost US$0.0 million)

89. **This is a zero budget component which is included to facilitate the use of IDA funds in the event of a disaster** and the Government's request to reallocate some funding from existing World Bank projects to provide emergency relief.

ANNEX 2: IMPLEMENTATION ARRANGEMENTS

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Project Institutional and Implementation Arrangements

1. **The major investments of the ZIFLP will be decentralized, to the lowest level possible, to have funds managed and controlled by beneficiaries.** However, there are some project investments that are national in scope such as those related to the REDD+ policy, MRV, policies, national-level institutional strengthening, and so on. Implementation of the ZIFLP will therefore require implementing agencies at both the national and EP levels.

2. **At the national level, the MNDP will represent the GRZ and will coordinate project activities through the ICCS where the NPU will be hosted.** At the provincial level, the EPPA will host the PPIU. This arrangement aims to (a) ensure sectoral mainstreaming of investment; (b) lessen the approval layers for faster decision-making, enabling more efficient project implementation; and (c) respect the constitutionally mandated decentralization process. The ICCS will facilitate coordination among all the project implementing entities, that is, the Ministry of Lands and Natural Resources (MLNR), EP PPIU, and all relevant line ministries, departments, and agencies (MDAs) through the MNDP. This is in fulfillment of their coordination mandate under the climate change policy. This will help to ensure the programmatic objective of the Government under the 7NDP. Table 2.1 summarizes the institutions that will have a role in the implementation of the ZIFLP.

Table 2.1. List of Institutions and Distribution of Responsibilities under ZIFLP

Organization	Responsibility
MNDP through ICCS	Overall project coordination as befits MNDP's mandate.
National Steering Committee	Policy guidance and high level inter sectoral coordination
MLNR, Department of Forestry	House the NPU NPU management through full project staffing Submission of consolidated project AWPB, progress reports, and audit reports Technical guidance Subcomponent 1.2, leadership Subcomponent 2.1, land tenure and resource right regularization Oversight of design and supervision of consultants (Baseline, MRV at all levels in consultation with provincial authority, and provincial forestry and agriculture departments)
ZEMA	Lead national GHG accounting framework (part of Subcomponent 1.2)
Provincial administration Office of Assistant Director	Overall responsibility for Subcomponent 1.1, part of Subcomponent 1.2; Component 2

Organization	Responsibility
Planning, EP	PPIU management, staffing of PPIU Submission of reports to NPU Oversight of project implementation through the PPIU Drafting TORs, procuring service providers, supervision of service providers and consultants Coordination with traditional authorities (all components) with neutral facilitation Safeguards implementation, oversight
Provincial administration	Implementation of benefit sharing, SESA (safeguards) in coordination with MLNR
Provincial Physical Planning Department	Implementation of district and local planning (Subcomponent 1.1) Technical guidance to districts/decentralized arrangements, and oversight for district development planning and land use planning
Agriculture Department (Province)	Lead implementation of Component 2 activities: CSA, agroforestry, market access, and private sector engagement
Agriculture Department (Province)	Market access and private sector engagement
Agriculture Department (Province)	Developing community enterprises
Agriculture Department (Province)	Community enterprises
FD (Provincial)	Forestry management activity of Subcomponent 2.1 in close consultation with traditional authorities
DNPW (National Level)	Lead implementation of Subcomponent 2.2 on wildlife management
Provincial administration	Lead agribusiness engagement with agribusiness companies operating in large out grower schemes with smallholder farmers
Community enterprise development	Provincial administration
DNPW	Construction works for wildlife component

3. **Project implementation will be guided by a Project Implementation Manual (PIM).** The PIM will cover implementation of the project at both national and provincial levels and will address issues related to procurement, financial management, subproject grants, selection of beneficiary organizations, and so on. A draft has been prepared and a final version acceptable to the Bank is a condition of effectiveness.

National Level

4. **Overall project oversight and policy guidance will be provided by the ZIFLP National Project Steering Committee (NPSC), which will be chaired by the PS of the MNDP.** The members of the NPSC will include PSs from the relevant MDAs, that is, MoF, MNLR, MAL, DNPW, Local Government, and representatives of the private sector, CSOs, and NGOs. In addition, the NPSC will be responsible for review of the AWPB and of annual progress reports.

5. **There will additionally be a National Technical Advisory Committee (NTAC) (using the existing platform) with representation from key MDAs such as the Directors of Forestry, Land, DNPW, Chairpersons of intergovernmental technical working groups, civil society, and the private sector.** The

NTAC will be responsible for providing technical support and guidance to the project. The members of the NTAC attending each meeting will depend on the agenda or technical advice sought by the NPU.

6. **The MNDP, through the ICCS, in line with their climate change agenda mandate, will be responsible for coordination.** Specifically, the MDNP will ensure the NPSC and NTAC is functional in relation to the national climate change agenda, reporting for M&E purpose, and fulfillment of the 7NDP.

7. **The ZIFLP NPU in ICCS will be responsible for the procurement of major studies and services related to the national component.** In addition, the NPU will manage overall project reporting. It will be headed by a national project manager supported by an M&E officer, finance officer/project accountant, procurement officer, internal auditor, communication officer, and the environmental and social safeguards compliance officer.

8. **The MoF has already established an informal working group on land, chaired by the Surveyor General (SG) and the Director of the MoF.** This group, which also includes the Ministry of Local Government, House of Chiefs, and so on, will provide policy oversight to activities related to regularization of land and resource rights under Subcomponent 2.1. The SG will represent this group and regularly report on the status of the subcomponent to the ZIFLP NPU.

9. **The NPU will be responsible for preparing the AWPB for the national component of the investment and consolidating an AWPB for the project.** The project AWPB will be submitted through the NPU for the World Bank's approval after clearance by (a) the PS of the MNDP; and (b) the PS of the EP for the provincial level activities.

Eastern Province (EP) Level

10. **The Provincial Planning Subcommittee (PPSC), to be chaired by the EP PS, will be responsible for providing technical support, guidance, and advice to the project in relation to sectoral issues at the provincial level.** The PPSC will comprise chief officers of the relevant provincial line ministries: Agriculture, Land, DNPW, Forest, Local Government, and representatives from the private sector and civil society. The PPSC will be responsible for advising on activities at the provincial level, as well as on district and community proposals. The PPSC will also ensure that project activities are incorporated in the Provincial Integrated Development Plan. The inclusion of representatives from traditional authorities, CSOs, and the private sector will reinforce the PPSC.

11. **Districts**. At the district level, the structure will be similar, with overall coordinating responsibilities falling under the district planners, under the guidance of the District Planning Advisory Subcommittee consisting of technical staff, traditional representatives, and civil society partners. This will ensure that the project is integrated in existing institutional structures and mandates. Districts will be responsible for implementing interventions that fall under their authority and will provide coordination responsibility over community-level microprojects that cut across several communities. In such cases, DDPs will be prepared.

12. **The DNPW does not have a technical structure at the district level.** Therefore, for all DNPW-related activities at the district level, the implementation of project activities or backstopping support will

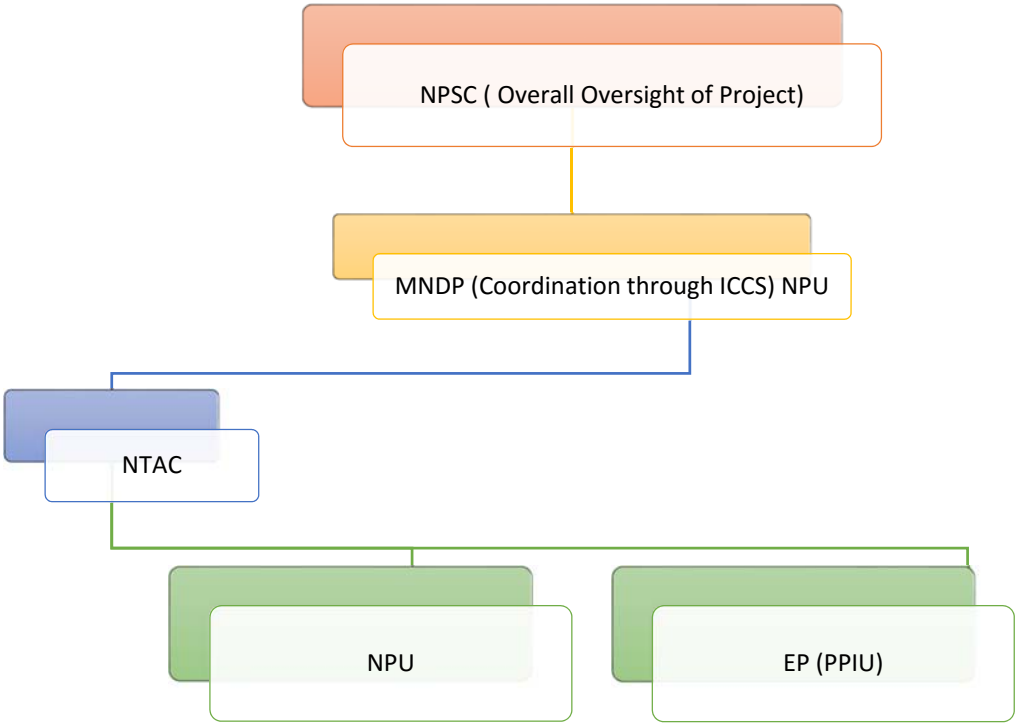
be provided from the provincial DNPW office in collaboration with the national head office.

13. **Communities.** At the community level, the structure will be similar, with overall coordinating responsibilities falling under the Area Development Committees (ADCs) or any existing Government-recognized authority. The ADCs will consist of community representatives, leaders, traditional representatives, and civil society partners. These are existing institutional structures. Communities will be responsible for implementing and managing interventions at the community level with managerial oversight from the districts and the PPIU. If not already existing, community development plans will be prepared.

14. **The PPIU.** This unit will be embedded into the provincial administration. The PPIU will be headed by a provincial project manager (PPM) and report directly to the chief planner (at the provincial level). For project progress reporting, the PPM will collaborate with the national project manager. The PPIU will be responsible for the day-to-day implementation and operations of the project's investments, and will be supported by the relevant provincial structure. The PPIU will oversee the planning, provide specialized technical support, and carry out fiduciary, safeguards, and monitoring oversight of the project and will be responsible for preparing the AWPB for the EP-level project investments, seeking advice from the EP PS before submitting to the NPU for consolidation, submission, and approval by the World Bank. The PPIU will be supported by the following officers: provincial M&E officer, finance officer/project accountant, procurement officer, internal auditor, communication officer, and the environmental and social safeguards compliance officer. The PPIU will work in collaboration with the PPSC and the EP line ministry technical experts to provide management oversight and will be responsible for selection of the subgrants for activities related to agriculture, forestry, and wildlife. The EP administration will be responsible for implementing small parts of Component 1 and virtually all of Component 2 and their management costs will be covered through Component 3.

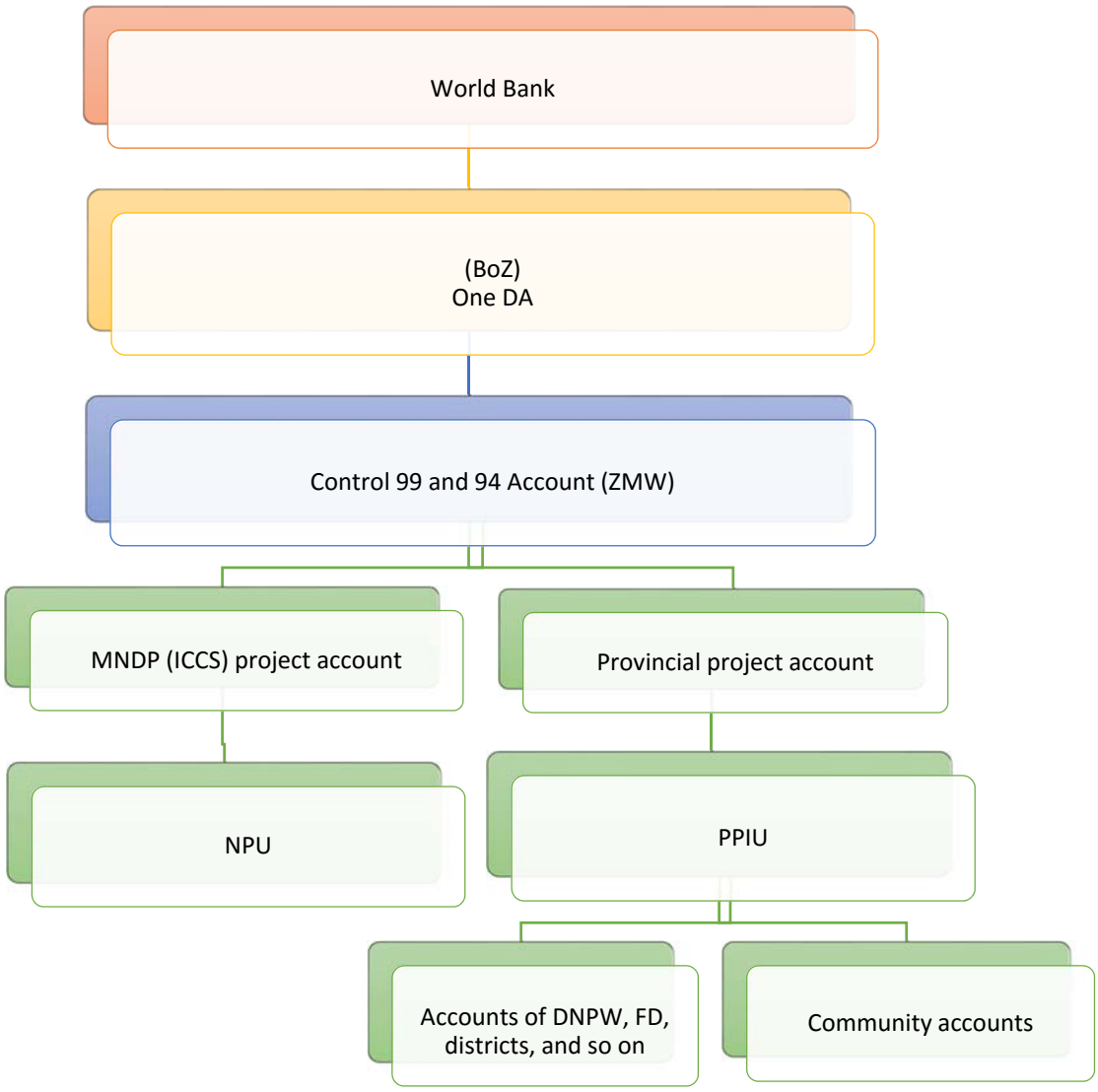
15. **The MDAs.** The MDAs, that is, Agriculture, Forest, Lands, DNPW, Local Government, and so on will play a critical technical role at the subnational levels and ensure synergy with their respective national line ministries. They will be responsible for regular technical backstopping and ensuring linkages of project investments with development plans and policy. When required, they will provide TA and support, based on agreed annual work plans with the NPU and PPIU, against which regular advances will be made and accounted.

Figure 2.1. Implementation Arrangements



16. **Flow of funds arrangements.** The flow of funds arrangement will require one designated account (DA) (see Figure 2.2) opened by the National Treasury in the Bank of Zambia (BoZ), denominated in U.S. dollars, and to be managed by the NPU. Two project accounts in Zambian kwacha opened by the NPU and PPIU respectively in the BoZ or a financial institution acceptable to World Bank/IDA, from which the project's payments will be made through a drawdown from the DA. The EP will mirror the same approach for resources draw down from the DA-2 to the provincial project account. Other recipients of project funds such as the MLNR (for its component-related activities), FD, ZEMA, districts/communities, and beneficiaries will open project bank accounts in commercial banks acceptable to World Bank/IDA. Funds will be disbursed directly to these accounts once they have met the eligibility criteria.

Figure 2.2. Funds Flow Diagram



Financial Management

17. **Introduction.** The World Bank's FM management team conducted an FM assessment of the ICCS and the EP PPIU. The two implementing agencies satisfy the minimum FM requirements as stated in the World Bank's OP/BP 10.0 (Investment Project Financing). The risk rating for the project's FM arrangements has therefore been assessed as Moderate.

18. **Strengths and weaknesses.** The main strength identified is that ICCS will use existing financial management arrangements including staff, financial regulations, and procedures. An ICCS financial management specialist will assist in providing capacity building to the accounting staff to be recruited. The accounting software used is the Pastel ERP Revolution Accounting software.

19. **The weaknesses identified are that** (a) the Pastel software is not connected to the national IFMIS and therefore will not benefit from the strong accountability controls and efficiency provided by the IFMIS; (b) ICCS is responsible for a number of projects, including four of the World Bank, resulting in major work loads for the existing staff and (c) at the district level, internal controls are inadequate and neither the accounting nor internal audit staff have experience in the World Bank's financial management and disbursement procedures.

20. **Recommendations.** Therefore, it is recommended that appropriate Government agencies assign staff to the project to be in charge of the financial operations. The project may also recruit consultants (project accountants) on an as-needed basis to help build capacity. The World Bank will conduct training in the World Bank's FM and disbursement guidelines for the project staff, including internal audit staff, during project launch.

21. **Budgeting.** Budget preparation and monitoring will follow Government procedures.

22. **Accounting system.** The NPU of MLNR and the PPIU will use IFMIS, the Government system.

23. **Internal controls and internal audit.** Both the NPU and the PPIU will use Government regulations and audit functions.

24. **Accounting basis.** The project will use cash basis accounting, in line with International Public Sector Accounting Standards.

25. **Financial reporting.** The NPU will produce unaudited interim financial reports on a quarterly basis to manage and monitor the use of their funds. The quarterly reports should be submitted to the World Bank 45 days after the end of the quarter.

26. **External audit.** The project audits will be audited by the Office of the Auditor General, who may contract auditing firms acceptable to the World Bank to conduct the project audits on their behalf. All audits should be carried out in accordance with international standards on auditing. All terms of reference for audits of the implementing entities should be found acceptable to the World Bank before the auditors are engaged. The audit report together with the management letter should be submitted to the World Bank within six months after the end of each fiscal year. The audit report will be publicly disclosed by the World Bank in accordance with the World Bank's disclosure policy.

27. **Financial Management Action Plan.** The actions described in table 2.2 should be taken by the due dates to strengthen the control environment and to mitigate the project FM risks identified in the table.

Table 2.2. Financial Management Action Plan

	Action	Responsible
1	Assign project accountants	NPU/PPIU
2	Train the project accountants in World Bank FM and disbursement guidelines	IDA

28. **Supervision Plan.** FM supervision will be carried by the World Bank as part of the overall supervision for the project. At least two supervision missions are expected a year.

Disbursements

29. **The project will use the transaction-based method of disbursements (Statements of Expenditure [SOEs]).** Other methods of disbursing to the project will include reimbursements, direct payments, and use of special commitments (for example, letters of credit). Further disbursement details are provided in the Disbursement Letter. The disbursement categories that have been defined for the project are detailed in table 2.3.

Table 2.3. Project Disbursement Categories (US$, millions)

Category	Relationship to Components	Expenditure types and Financing Agreement parts	Allocation	IDA	BioCF ISFL	GEF	Responsible agency
1	1.1 District and local planning	Goods, consultants, non-consulting services, training, and operating costs under part 1 (a)	4.35		4.35		PPIU
2	1.2 Emissions reduction framework	Goods, consultants, non-consulting services, training, and operating costs under part 1 (b)	2.00		2.00		NPU
3	2.1/2.2 (partial) Community grants	Community grants under parts 2 (a) and 2 (b)	5.2	2.7		2.5	PPIU
4	2.1 (partial) Agriculture and forestry management	Goods, works, consultants, non-consulting services, training, and operating costs under part 2 (a) (i) to (iv)	11.7	7.2	1.15	3.35	PPIU
5	2.1 (partial) Land and resource rights	As above under part 2 (a) (v)	2.2	2.2			NPU (MLNR)
6	2.2 Wildlife management	As above under part 2 (b)	4.20	2. 0		2.2	NPU (DNPW)
7	3.1 National Project Unit	As above under part 3 (a)	0.65	0.40	0.25		NPU
8	3.2 Provincial Project Implementation Unit	As above under part 3 (b)	2.50	2.50			PPIU
9	4. Contingent emergency response	As above under part 4	0.0	0.0	0.0	0.0	NPU
	TOTAL		**32.80**	**17.00**	**7.75**	**8.05**	

Procurement

30. **A Procurement Risk Assessment (P-RAMS) was undertaken in December 2016 in accordance with the World Bank's Procurement Risk Management System.** The implementation agency procurement risk was assessed as Moderate. Implementation of the risk mitigations actions would, over time, reduce it to Low.

31. **Procurement Manual and Procurement Plan.** The procurement arrangements to be used under the project, including packaging of procurement, maintaining clarity of accountability over procurement, record keeping, and frequency and scope of prior and post review will be elaborated in the procurement module of the PIM and in the Procurement Plans. The PIM will address the needs of the various implementation agencies who may have procurement implementation responsibilities, including the needs and procedures for procurement at community level. The manual will outline the identified risks and provide risk mitigation actions. From a procurement perspective, the manual will cover the legal and regulatory framework, roles and responsibilities of the institutions and staff involved in procurement, internal and external controls and quality assurance checks or systems, approval systems and accountability, and contracts register. It will also spell out the roles and responsibilities of various players in contract management, based on both Government regulations and as required for prior review of IDA contracts. For further information on procurement see annex 5.

Environmental and Social (including safeguards)

32. **The NPU will monitor overall implementation of the project safeguard frameworks.** The ICCS is currently implementing the Pilot Program for Climate Resilience (PPCR) in the Western Province of Zambia. The NPU could draw on this knowledge of safeguards and of implementation requirements. The PPIU will have responsibility for safeguards implementation at the provincial level but will need to significantly increase their capacity to meet this obligation. Safeguards training needs have been identified at both national and provincial levels, which will be provided through the TA component of this project.

Monitoring and Evaluation

33. **The ZIFLP will be underpinned by a solid monitoring, learning, and evaluation system.** The primary objectives will be to enforce the culture of results-based project M&E; and provide the foundation for an evidence-based decision-making process. The M&E system will be two-pronged: (a) monitoring project implementation (activities, processes, inputs, and outputs) to track progress (targets versus actual achievement) through a web-based M&E and MIS system; and (b) impact evaluations to measure the final outcome (transformational impacts) at MTR and end of the project.

Role of Partners (if applicable)

34. **The project aims to create synergies and collaboration with ongoing interventions and projects to achieve the project objectives.** Where appropriate, the ZIFLP will aim to scale up successful interventions. The Government intends to attract development partners (DPs) to help with financing for implementation of this project at the jurisdictional level of the EP to increase the impact on the ground and also to improve livelihoods. Furthermore, collaboration with other key stakeholders such as

community organizations, private sector, and academic/research institutions is also very important. The Government has also recognized that private sector actors will be critical in achieving the ZIFLP objectives, particularly in addressing the problem of access to markets for both inputs and outputs. An IDA credit of US$17.0 million has been committed to the project, but the Government also recognizes that to successfully implement the project, it is necessary to leverage funds from other donors and strengthen the support of private and public partners.

35. **The project is expected to encourage and catalyze various partners to participate in reducing deforestation and forest degradation.** Local communities will also be key to ensuring that there are partnerships with the private sector that result in improved rural livelihoods and improve their agricultural practices to reduce deforestation. Based on the Forests Act No. 4 of 2015, local communities will be encouraged to enter into partnerships with the private sector.

36. **During the preparation of the ZIFLP, broader participation, consultation, and collaboration among all key stakeholders at national and provincial levels was carried out which enriched the design of the project.** Therefore, a collaborative approach within the World Bank and with external partners will be adopted and strengthened to achieve efficient and effective implementation of the ZIFLP.

37. **Table 2.4 presents a summary of the ongoing or planned donor-financed projects in the EP** that have the greatest pertinence for the ZIFLP and with which it will be critical to work closely.

Table 2.4. Summary of the Ongoing or Planned Donor-financed Projects in the EP

Name of Partner/Donor	Project Name	Area of Collaboration	Project Size (millions)
World Bank	Zambia Agribusiness and Trade Project	Private sector engagement	US$40
World Bank	Regional Agricultural Productivity Program for Southern Africa	Soil testing/fertility management, seed multiplication, agroforestry	US$30
World Bank	COMACO Landscape Management Project	CSA, REDD+	US$1.3
World Bank (GEF)	Nyika Transfrontier Conservation Area Project	Wildlife management and support to protected areas	US$2.4
Norway	COMACO III	Opportunities for ecosystem conservation through improved extension services to smallholders	US$11
FAO	Conservation Agriculture Scaling up (CASU)	CASU is currently in the phase of scaling up some of its activities; hence they are open to create synergies by identifying the interventions under the ZIFLP that fits into their development objectives. The new	EUR 11

Name of Partner/Donor	Project Name	Area of Collaboration	Project Size (millions)
	Project funded by EU	interventions are expected to start by August–September 2017 and it will be for a period of 4 years. In the new phase, they will be looking at including an emission reduction component to CA.	
USAID	BioCarbon Partners Limited	Area for collaboration is on resolving the inconsistences with the National FREL and developing an acceptable Forest Reference Emission Level (FREL) that can be used by all projects working in the province.	US$14
Sweden	Sustainable Integrated Land Management Solutions (implemented by consortium comprising *Stichting Nederlandse Vrijwilligers (SNV),* ZARI, ICRAF, Nutri-Aid, and Stockholm Environment Institute	ISFM, agroforestry, deforestation-free agricultural value chains, soil testing, seed multiplication, inclusive business	EUR 4.18
Germany	Strengthening Joint Management and Promoting Community Alternative Livelihoods (GIZ) Malawi-Zambia TFCA (KfW)	Support to Malawi and Zambia for management of Kasungu National Park and LNP Regional support of Germany to the Southern African Development Community (SADC) TFCA working program (in Zambia in Muchinga and EP).	EUR 0.7 EUR 18.0
U.K. Department for International Development	Conservation Farming Unit (CSA Zambia Program]	CSA adoption productivity boosting techniques	GBP 25

ANNEX 3: IMPLEMENTATION SUPPORT PLAN

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Implementation Support Plan and Resource Requirements

1. **The strategy for successful implementation support (IS) of the ZIFLP will focus on mitigating the risks identified at various levels and supporting risk management plans as proposed in the SORT.** The IS plan will comprise a number of critical review instruments to assess progress toward achieving the PDO and overall implementation progress and to effectively respond to issues and challenges as they arise. Such reviews will include, among others, (a) IS missions conducted semiannually to include other DPs as appropriate; (b) an MTR that will include a comprehensive assessment of the progress achieved at the midpoint of project implementation and will serve as a platform for revisiting project design issues and identifying where adjustments may be needed; (c) a project impact assessment; and (d) implementation completion, where an independent assessment of the project will be undertaken and lessons will be drawn to inform future or similar operations. The IS strategy, as articulated above, will include a concerted plan of technical, fiduciary, and safeguards support needed to ensure due diligence over the course of project implementation. The task team will have access to supervision budget from the IDA and BioCF-ISFL trust fund in order to monitor the progress of the recipient executed activities.

2. **Technical support.** At the technical level, the World Bank team will assemble the appropriate technical skills mix and experience needed to support implementation of this operation.

3. **Fiduciary support.** The World Bank's FM and procurement specialists will carry out periodic reviews to ensure that fiduciary systems and capacities remain adequate during the course of project implementation in accordance with the World Bank's fiduciary requirements.

4. **FM support.** The World Bank will require that quarterly interim financial reports be submitted to the World Bank as well as the annual external audit report for review. The World Bank will review other project-related information as well, such as the internal control and oversight and reporting systems. Annual and unannounced project site visits will be carried out by the World Bank to review the FM systems, including internal controls. Monitoring of actions taken on issues highlighted in the audit review of the ZIFLP, external audit reports, auditors' management letters, internal audits, and other reports will be reviewed by the World Bank, including statement of expenditure transaction reviews. FM capacity training for project implementation units will be carried out once the PIM is approved. Additional FM training will be conducted during project implementation as needed.

5. **Procurement support.** The World Bank will undertake IS missions every six months. An independent agency will be established to conduct regular procurement audits for activities at the community level.

6. **Safeguards support.** The World Bank's safeguards team will consist of social and environmental specialists who will guide the project team in applying the agreed safeguard instruments as well as reviewing compliance during IS missions.

Implementation Support Plan

Time	Focus	Skills Needed	Resource Estimates (US$)
First 12 months	• Project effectiveness and implementation start-up • Safeguards instruments application/compliance • MRV system in place • M&E system (methodology, and so on) in place • Fiduciary training provided	• Senior NRM Specialist/CSA Expert (TTL) • Senior Environmental Specialist (co-TTL) • Senior Carbon Finance Specialist (co-TTL) • Senior MRV Specialist • Private Sector Specialist • Economist • Senior Operations Officer/M&E Specialist • Safeguards Specialists (Social and Environmental) • Fiduciary Specialists (FM and Procurement) • Legal Counsel • Finance/Disbursement Officer • International Agricultural Research on Climate Change Experts (CGIAR centers in Zambia)	150,000–200,000
13–48 months	• Implementation of planned activities/review of AWPBs • Monitoring and reporting against targets • IS missions conducted • MTR undertaken (during year 3) • First impact assessment conducted	• Senior NRM Specialist/CSA Expert (TTL) • Senior Environmental Specialist (co-TTL) • Senior Carbon Finance Specialist (co-TTL) • Senior MRV Specialist • Private Sector Specialist • Economist • Senior Operations Officer/M&E Specialist • Safeguards Specialists (Social and Environmental) • Fiduciary Specialists (FM and Procurement) • Legal Counsel • Finance/Disbursement Officer • International Agricultural Research on Climate Change Experts (CGIAR centers in Zambia)	150,000–200,000 per year

Time	Focus	Skills Needed	Resource Estimates (US$)
49–60 months	• Implementation of planned activities/review of AWPBs • Monitoring and reporting against targets • IS missions conducted • Impact assessment conducted • Project completion and ICR preparation	Same as above	150,000–200,000 per year

Note: TTL = Task Team Leader.

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
• CSA Expert • Environmental Specialist • MRV Specialist • Private Sector Specialist • Carbon Finance Specialist • Economist • M&E Specialist • Social Safeguard Specialist • Environmental Safeguards Specialist • Finance • Procurement • Legal	2 staff weeks	1–2 trips per year	

ANNEX 4: GEF-SPECIFIC INFORMATION

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

GEF Strategic Objectives

1. **The GEF funding for this project, as allocated by Zambia's GEF Focal Point, includes funds designated from a number of different operational programs, including Biodiversity, Climate Change, Land Degradation, and Sustainable Forest Management.** In the case of each operational program, the project design responds to specific program areas and expected outcomes and outputs. The GEF data sheet and the Tracking Tool detail these (see section below on M&E). Briefly, the main outcomes the project seeks to contribute to are

- Under Biodiversity, Outcome 1.2: Improved management effectiveness of protected areas and Outcome 3.1: Reduction in rates of poaching of elephants and other threatened species and increase in arrests and convictions;

- Under Climate Change, Outcome A: Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration;

- Under Land Degradation, Outcome 1.1: Improved agricultural, rangeland, and pastoral management; and

- Under Sustainable Forest Management, Outcome 5: Integrated landscape restoration plans to maintain forest ecosystem services are implemented at appropriate scales by government, private sector, and local community actors, both women and men.

2. **Specifically, for the biodiversity funding from the GEF, the project is expected to contribute to the Aichi Targets[12] of the Convention on Biological Diversity.** The targets are constituted by five strategic goals, to all of which the ZIFLP will contribute. They are noted below along with a brief explanation of the project's contribution to each target:

- **Strategic Goal A.** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society. In the EP, the most critical underlying cause of biodiversity loss is deforestation driven by the expansion of smallholder agriculture; the project seeks to mainstream and prioritize concerns about forest and biodiversity loss not only at policy and regulatory levels but also through institutional strengthening.

- **Strategic Goal B.** Reduce the direct pressures on biodiversity and promote sustainable use. A principal objective of the ZIFLP is to reduce pressure on forests and on biodiversity by increasing the value of standing forests, intensifying agriculture, and promoting sustainable forestry management.

[12] See https://www.cbd.int/sp/targets/.

- **Strategic Goal C.** To improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity. A major part of the biodiversity funding of the ZIFLP will be dedicated to improving the management of LNP, an underfunded park but potentially of great strategic biological importance both for the Luangwa Valley ecosystems and for adjacent protected areas in Malawi.

- **Strategic Goal D.** Enhance the benefits to all from biodiversity and ecosystem services. The ZIFLP has funding (both GEF and IDA) to increase the flow of benefits to communities from wildlife management and from forestry management (see under Component 2).

- **Strategic Goal E.** Enhance implementation through participatory planning, knowledge management, and capacity building. Component 1 of the ZIFLP includes a major emphasis on enabling communities and districts to have the necessary planning tools and capacity to implement the livelihood investments of Component 2.

3. **The project is also supportive of Zambia's obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).** As concerns priority species, the project is focusing on elephants and lions, attempting to increase their protection while protecting their habitat. Aspects of trophy management (especially) for ivory could also be considered. The Elephant is in CITES Database Appendix I while the Lion is in CITES Appendix II.

Global Wildlife Program

4. **To respond to the growing wildlife crisis and an international call for action, the GEF in June 2015 launched the Global Wildlife Program (GWP).** Led by the World Bank, the GWP is a US$131 million grant program designed to address wildlife crime across 19 countries in Africa and Asia. The GWP serves as a platform for international coordination and knowledge exchange and for delivering action on the ground. The GWP builds and strengthens partnerships by supporting collaboration among national projects, captures and disseminates lessons learned, and coordinates with implementing agencies and international donors to combat the illegal international wildlife trade.

5. **National projects within the GWP form an integral part of a community of practice that promotes the sharing of best practices and technical resources.** Zambia has a national project under the GWP and during the first year of implementation of the global program, Zambia already benefited from participation in two knowledge exchange events that were held in Kenya and Vietnam. These events brought the GWP countries together to exchange experiences on various antipoaching, antitrafficking, and demand reduction issues. During project execution, Zambia will also have access to the documentation and materials produced during other virtual and in-person meetings of relevance to the activities to be carried out in-country, especially those of HWC and emerging technologies in the fight against wildlife crime.

Global Biodiversity Importance

6. **The biodiversity component of the ZIFLP will support LNP, and possibly other nearby protected areas, such as Luambe National Park, could be added during project implementation, pending a fuller**

evaluation of funding needs. The park currently receives almost no funding, either from the DNPW or from donor financing, and has only eight park guards and a much deteriorated infrastructure. Biologically, however, the park is of considerable global biological importance. It constitutes a biological link to Kasungu National Park in Malawi and, through adjacent GMAs, greatly expands the effective size of the globally significant protected areas of the Luangwa Valley in Zambia.

7. **The vegetation type of the Kasungu-Lukusuzi complex is predominantly miombo woodland, dominated by *Brachystegia julbernardia* and *B. isoberlinia*.** Information recently compiled[13] indicates that the area is home to at least 112 mammal species, over 415 birds, 50 reptiles, 34 amphibians, and 31 fish species. The common mammals include elephants; buffalos; kudu, eland, roan, and sable antelopes; hartebeest; warthog; bushbuck; bush pig; waterbuck; impala; leopard; lion; hyena; and baboon. Rhinos previously were common but have been extirpated due to poaching pressure (Lukusuzi is an area of excellent habitat for rhinos and could be a future site for reintroductions).

Project Baseline and Project Alternative

8. **Project baseline.** In Zambia's EP, the project area, the majority of the province's 1.7 million people live in rural areas with livelihoods dependent on natural resources. As in Zambia as a whole, this rural population is characterized by high levels of poverty and addressing this challenge is the highest priority of the provincial administration. According to the World Bank's Mapping Subnational Poverty in Zambia report, the EP is one of the three poorest provinces in Zambia.[14] In addition, according to the Living Conditions and Monitoring Survey (2015), at 70 percent, the EP had one of the highest proportion of population that was poor. Many communities in the EP are locked into a cycle of poverty and resource degradation. Forests and ecosystem services continue to be lost; GHG emissions are significant; and encroachment of protected areas, habitat fragmentation, and land degradation continue apace. Under business as usual, wildlife and forests will continue to be degraded and poached for local and global consumption and replaced by low-value land use options. Reliance on low-value commodity production and unsustainable land use practices in a degraded landscape also make people particularly vulnerable to climate change. In a bid to reverse these tendencies, government, donor, and private sector efforts have largely focused on (a) strengthening agricultural productivity and (b) ecotourism development in the renowned South Luangwa National Park of the EP.

9. **Project alternative.** The project aims to provide support to rural communities in the EP to allow them to better manage their landscape resources to reduce deforestation; enhance benefits they receive from forestry, agriculture, and wildlife; and reduce their vulnerability to climate change. The project will also invest in ensuring that enabling conditions are in place for these changes to happen—conditions such as tenure security, planning at different spatial scales, and capacity development. Simultaneously, the project will create the enabling environment for carbon emission reduction purchases to be made in a subsequent World Bank operation.

[13] "Project Proposal for Strengthening Joint Management and Promoting Community Alternative Livelihoods in the Kasungu-Lukusuzi Component of the Malawi-Zambia TFCA", DNPW-Zambia and DNPW-Malawi, submitted to GIZ in July 2016.
[14] World Bank Group. 2015. *Mapping Subnational Poverty in Zambia*.

10. **Incremental GEF resources will support these objectives by strengthening the basic planning and management of LNP to keep open opportunities for conservation and potential reintroduction of key species such as rhino.** By strengthening the corridor aspects of the landscape approach, the project will help to keep open animal migration and ecosystem linkages between Zambia and Malawi, which is important for the longer-term survival of these critical African ecosystems. Incremental GEF resources adding to IDA and BioCF ISFL funding will also enhance the climate change, sustainable forest management, and land degradation goals of the project.

Incremental Reasoning

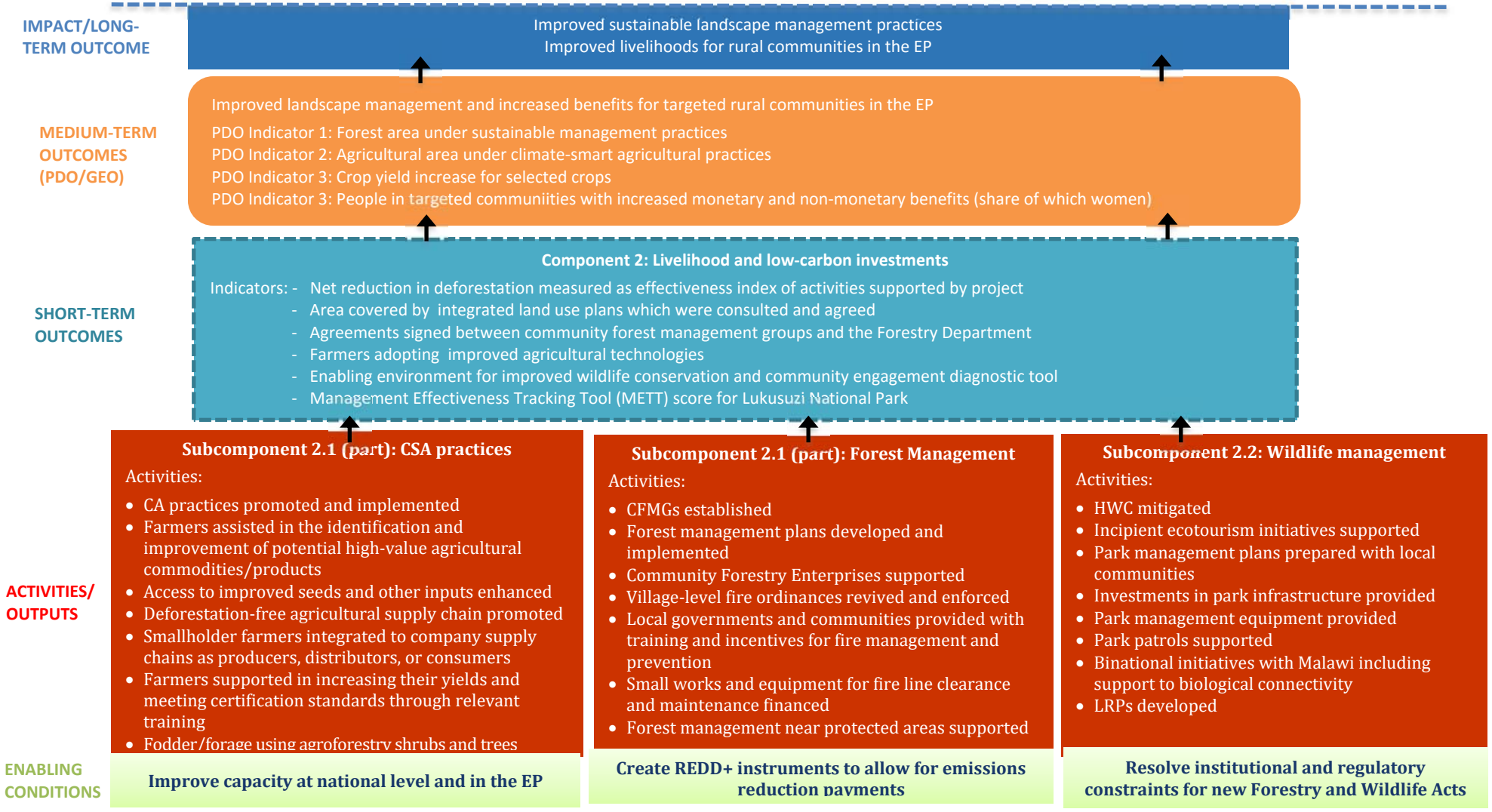
11. **The main text of this document includes a high-level theory of change diagram for the ZIFLP.** The theory of change diagram, figure 4.1, delves in detail into the assumptions and expected outcomes of the GEF funding only.

12. **In the absence of the GEF funding, the ZIFLP investments with resources from the BioCF*plus*-ISFL and IDA would have been focused only on creating the enabling environment for future emission reduction payments and on financing livelihood investments in agriculture and forestry.** The addition of GEF funds substantially changed the nature of the ZIFLP. A focus on wildlife and biodiversity conservation was introduced, leading to the strengthening of the project's landscape approach. The GEF funds are also contributing in an important way to the agriculture and forestry livelihood investments. GEF funds exceed the amount of IDA funds for forestry and contribute significantly to the agriculture goals of the project (in the co-financing tables of the GEF data sheet, the importance of the GEF funding is somewhat obscured because the co-financing for these outcomes includes the future US$30 million of emission reduction payments). The incremental value of the GEF funds is in the contribution to the conservation of the globally important biodiversity of LNP and in substantially increasing the impact of the ZIFLP in livelihoods improvement and in creating the enabling conditions for the future emission reduction purchases.

Monitoring and Evaluation

13. **A specific tracking tool has been developed for the GWP projects to measure their performance and contributions; this tool will be used by the GRZ during project implementation.** The indicators will be tracked and measured in parallel to the M&E Results Framework of the overall project; these indicators cover, in part, the use of the GEF funds but are not focused on the GEF-funded components.

Figure 4.1. Theory of Change Specific to GEF-funded Activities of the ZIFLP



ANNEX 5: Procurement

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

1. **Project Implementation Manual and Procurement Plan.** The procurement arrangements to be used under the project, including packaging of procurement, maintaining clarity of accountability over procurement, record keeping, and frequency and scope of prior and post review, will be elaborated in the procurement module of the PIM and in the Procurement Plans. The PIM will address the needs of the various implementation agencies beyond the NPU and the PPIU, which may have procurement implementation responsibilities, including the needs and procedures for procurement at the community level. The manual will outline the identified risks and provide risk mitigation actions. The procurement section of the manual will cover the legal and regulatory framework, roles and responsibilities of the institutions and staff involved in procurement, internal and external controls and quality assurance checks or systems, approval systems and accountability, and contracts register. It will also spell out the roles and responsibilities of various players in contract management, based on both Government regulations and as required for prior review of IDA contracts.

2. **The NPU has developed a Procurement Plan for the first 18 months of project implementation.** The World Bank reviewed and approved this plan before negotiations. The Procurement Plan includes all the procurement packages identified for the first 18 months of project implementation. The Procurement Plan will be updated as required at least once a year throughout the life of the project.

3. **Procurement decentralization.** Procurement decentralization affects, since January 1, 2013, all procuring entities. This means that the Zambia Public Procurement Authority (ZPPA) has not been involved in reviewing bidding documents and bid evaluation and review and approval or non-approval of contract award recommendations. All procurement activities will be carried out internally by the NPU and PPIU using their own institutional arrangements, controls, and quality checks. Since January 2013, the ZPPA has been transformed into a regulatory and oversight body for public procurement in Zambia. All procurement activities to be carried out under the project by the various implementing agencies for the project will be carried out based on the specific agencies' institutional arrangements and controls. These will be elaborated in the Procurement section of the PIM that will be approved by the Bank.

4. **The procurement capacity assessment of the PPIU was carried as part of project preparation on December 1, 2016.** The assessment concluded that procurement management arrangements in place are adequate and compliant with the Procurement Guidelines. The NPU will continue to assist the PPIU during implementation. Nevertheless, risks for successful procurement management and the need for mitigation measures were identified as follows:

Table 5.1. Procurement Risks and Mitigation Measures

Agencies Assessed	Risk	Required Mitigation Measures
PPIU of the EP	Moderate	(a) The PPIU along with the Project Management Consultant should carry out training and sensitization of all staff to ensure procurement decision making is fully covered in the PIM and is available/known to staff. (b) The PPIU is to prepare a plan to ensure that the staff under the unit acquire the necessary skills in competitive bidding and particularly selection of consultants in general. Internal quality assurance needs to be enhanced. Staff numbers are adequate but activities will need to be assigned in a manner that holds individual staff accountable with performance evaluation being built in for individual staff. As with other implementing agencies in Zambia, the PPIU as the implementing agency needs to enhance its contract management expertise for quality and on time delivery of services, works, and goods. A contract manager will be assigned for each contract. (c) With regard to evaluation and award of contracts, staff need to be trained in good evaluation practices, based on predisclosed criteria.

5. **A review was also carried out of the procurement capacity and institutional arrangements for procurement within the NPU.** The assessment concluded that the NPU has adequate procurement capacity and arrangements in place to carry out procurement under the project. The ICCS, which will host the NPU, is currently implementing a number of projects funded by the World Bank and so is quite familiar with procurement under World Bank-funded projects. To enhance the procurement capacity of the ICCS, the World Bank will arrange training for selected staff, once these are identified.

6. **Procurement risk mitigation measures.** Based on the Procurement Risk Assessment, the main risks and proposed risk mitigation measures are shown in table 5.2.

Table 5.2. Summary of Procurement Assessment of Capacity, Risk, and Mitigation - Action Plan for the NPU

Risks	Mitigation Measures	Action by	By When
Procurement section of the PIM: The NPU and PPIU will need to develop and/or adopt a PIM. The manual will need to be regularly updated.	Ensure the procurement decision making is fully covered in the manual of the agency and is widely disseminated	PPIU/NPU	Before project effectiveness
Evaluations and awards of contracts: Reports do not always contain all essential information necessary for approvals, including adequate justification for decisions taken during evaluation such as rejection of bids. Wrong award decision may be made because of inadequate information, and due diligence is not routinely carried out.	Quality of evaluations and awards of contracts requires enhancement. Staff are to be trained in good evaluation practices, which base decisions on predisclosed criteria and include due diligence verifications of bidders recommended for award of contract.	PPIU/NPU	Starting from project effectiveness

Risks	Mitigation Measures	Action by	By When
Inadequate participation by technical experts in bid preparation and evaluation leading to potential/inadequate bidding process and contract awards	Improve procurement implementation capacity by acquiring the necessary procurement expertise. Involve technical staff and users in the preparation of specifications or agree to hire competent consultants to draft technical specifications and TOR and during evaluation of bids and proposals.	PPIU / NPU	Starting from project effectiveness
Procurement staff capacity may be inadequate due to increased work load that will result from the implementation of the project.	Improve procurement implementation capacity by acquiring the necessary procurement expertise (recruit procurement officer in the Lusaka office specifically for the upcoming project).	PPIU / NPU	Immediately after approval of the Procurement Manual

Procurement methods to be used for the project

7. Particular methods of procurement of goods and works are as follows:

(a) **International Competitive Bidding (ICB).** Except as otherwise provided, goods and works shall be procured under contracts awarded on the basis of ICB.

(b) **Other methods of procurement of goods and works.** The following list specifies the methods of procurement, other than ICB, which may be used for goods and works. The Procurement Plan shall specify the circumstances under which such methods may be used:

(i) National Competitive Bidding (NCB) (subject to modifications to make it acceptable for use under IDA-financed procurement and ensuing contracts)

(ii) Procurement from UN agencies

(iii) Force Account[15]

[15] "Force Account" as a method will be used in cases where established private sector firms/contractors may not be used on the basis of other procurement methods such as Shopping for minor works and NCB. The target area includes Department of National Parks and Wildlife (DNPW) managed game parks which are in remote and isolated areas. The DNPW has some internal capacity to carry out minor repairs and maintenance of the park infrastructure such as offices, gates, camping sites, loop roads (game viewing track roads within the park) and staff housing; installation of equipment and some specialized non-consulting services which other Government agencies may be able to carry out. The DNPW possess some skills for equipment installation, equipment/machinery for the purpose of carrying out such repairs to keep the park roads open to visitors and for the park infrastructure to be maintained in good state of repairs. Given the remoteness of the work sites, relatively small value of the works and non-complex nature of the works, the works may not be attractive enough to attract private sector participation at an economic price hence the consideration for the use of Force Account in line with provisions of Section III Other Procurement Methods Clause 3.9 "Force Account" The use of Force Account will in all cases be subject of prior review by the Bank.

(iv) Shopping

(v) Direct Contracting

(vi) Community Participation in Procurement

8. Particular methods of procurement for consulting services are

(a) **Quality- and Cost-Based Selection (QCBS).** Except as otherwise provided in the paragraph below, consultants services shall be procured under contracts awarded on the basis of QCBS.

(b) **Other methods of procurement of consultants' services.** The following list specifies selection methods, other than QCBS, which may be used for consultants' services. The Procurement Plan shall specify the circumstances under which such methods may be used:

(i) Quality-based Selection

(ii) Selection based on the Consultant's Qualifications (CQS)

(iii) Least-cost Selection

(iv) Single-source Selection (SSS) for firms

(v) Selection of Individual Consultants

(vi) SSS for Individual Consultants

9. **The procurement procedure to be followed for NCB** shall be the open bidding procedure set forth in the Public Procurement Act, 2008, Act. No. 12 of 2008, as amended by the Public Procurement (Amendment) Act, 2011, Act No. 15 of 2011, and the Public Procurement Regulations, 2011, Statutory Instrument No. 63 of 2011, provided, however, that such procedure shall be subject to the provisions of section I and paragraphs 3.3 and 3.4 of section III and appendix 1 of the Procurement Guidelines and the additional provisions as will be provided in the procurement section of the PIM.

Table 5.3. Prior Review and Procurement Method Thresholds

Expenditure Category	Procurement Method	Contract Value Threshold for Use of Method (US$)	Contracts Subject to Prior Review
Works	ICB (Works/supply and installation)	≥15,000,000	All contracts
	NCB	≥300,000 and <15,000,000	As in Procurement Plan
	Force Account	All values	All contracts
	Shopping	<300,000	None
	Community Participation in Procurement	All values	None
	Direct Contracting	All values	All contracts
Goods	ICB	≥2,000,000	All contracts

Expenditure Category	Procurement Method	Contract Value Threshold for Use of Method (US$)	Contracts Subject to Prior Review
	NCB	≥100,000 and <2,000,000	As in procurement plan
	Shopping	<300,000 (motor vehicles only)	None
	Shopping	<100,000 (other than motor vehicles)	None
	Community Participation in Procurement	All values	None
	Direct Contracting	All values	All contracts
	Procurement from UN agencies	All values	None

Notes:

1. Contracts with a cost estimate below US$300,000 for motor vehicles only may be procured on the basis of shopping procurement method.
2. Prequalification. None expected.
3. Proposed procedures for community-drivern development components (as per paragraph 3.17 of the Guidelines). The procedures for community participaption in procurement (also referred to as community-driven development (CDD), will be based on procedures as will be specified in the procurement section of the ZIFLP PIM.
4. Reference to (if any) Project Operational/Procurement Manual and other requirements: Project implementation with respect to procurement of works, goods and non sconsulting services and selection of consultants will be based on the use of the provisions conained in the World Banks - Guidelines Procurement of Goods, works, and Non-Consulting Services under IDRD Loans and IDA Credits & Grants by World bank Borrowers, dated January 2011, revised July 2014 and the World Banks Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011, revised July 2014. Given the nature of the project, additional provisions to guide procurement of works, goods and non consultant services and slection of consultants will be Procurement Section of the PIM. The “Manual – Guide for the Procurement of Small Contracts; World Bank Africa Region Procurement dated February 2011, revised March 2014” will also be used for procurement of small contracts. In all cases of NCB based on the use of the Zambia Public procurement Act and the use of the National Standard Bidding Documents, additional provisions for the use of NCB will be provided in the Financing Agreement for the NCB to be acceptable for use under World Bank financed contracts. Similarly, the Bank’s attachments and standard clauses of the Bank’s Policy – Corrupt and Fraudulent Practices, whose text may not be modified will be used in both the bidding documents and the ensuing contracts.
5. Any Other Special Procurement Arrangements: (including advance procurement and retroactive financing, if applicable). In addition to procedures set forth in Section III “Other Procurement Methods” Clause 3.9 “Force Account”, procurement of Emergency Expenditures under the Immediate Response Mechanism (IRM) part of the project shall be procured in accordance with the provisions and procedures set forth in the IRM Operations manual.

Table 5.4. Thresholds for Consultants Selection Methods and Prior Review

Expenditure Catrgory	Selection Method	Contract Value Threshold for Use of Method (US$)	Contracts Subject to Prior Review
Consulting Firms	QCBS, QBS	>=300,000	All contracts
	CQS, LCS, QBS, FBS	<300,000	None

	SSS	All values	All Contracts
Individual Consultants (IC)	IC Competitive selection	>=100,000	All contracts
		<100,000	None
	IC Single Source Selection	All values	All contracts

Notes:

1. Contracts selected on basis of CQS should not exceed US$200,000 equivalent.
2. Short list comprising entirely of national consultants. A short list of consultants for services, estimated to cost less than US$300,000 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. The procurement plan will indicate those contracts using CQS whose short lists will actually comprise entirely national firms. This will be based on a market analysis, the type of assignment, its complexity, and availability of sufficient consultants in the local market to allow for sufficient competition and quality.
3. Terms of Reference (TORs) for all consultancy contracts as well as all single source selections, irrespective of the contract value, will be subject to prior review by the Bank.

10. Other provisions relating to procurement are as follows:

(a) **Selection of consulting services.** Selection of consulting services under the project will be carried out based on the provisions of the 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011 and revised July 2014 (Consultant Guidelines). The consulting services that are likely to be needed under the project include those for design; supervision; dispute resolution; the environmental assessments and safeguard study; and the financial, procurement, and technical audits. These contracting needs will be identified and included in the Procurement Plan, and contractors will be selected on the basis of methods that have been included in the approved Procurement Plan. These methods and their corresponding prior review limits are provided above.

(b) **Consultant procurement packages.** The procurement packages for consulting services that will be subject to World Bank prior and post review are indicated in the project Procurement Plan, and approved during negotiations.

(c) **Training.** This category will cover all costs related to the carrying out of study tours, training courses and workshops, that is, hiring of venues and related expenses, stationery, and resources required to deliver the workshops as well as costs associated with financing the participation of community organization in short courses, seminars, and conferences, including associated per diem and travel costs. Training projects will be part of the AWPB and will be included in the Procurement Plan. Prior review of training plans, including proposed budget, agenda, participants, location of training, and other relevant details, will be required only on an annual basis.

(d) **Operating costs.** Operating costs relate to the project implementation services to be provided to the project. These will be procured using the borrower's administrative procedures, acceptable to the World Bank. Lists of eligible expenditures applicable are spelt out in the Financing Agreement and the PIM. The PIM will elaborate the applicable administrative procedures that will be followed and that will have been reviewed and found to be acceptable to the World Bank.

11. **Procurement Post Reviews and Independent Post Reviews by the World Bank.** Based on the assessed agency implementation risk for procurement, which is Moderate, the World Bank will carry out Procurement Post Reviews or Independent Post Reviews for all contracts that will, based on the Procurement Plan, not have been the subject of prior review by the World Bank using a sample of 10 percent. Based on continuing assessment of risk and the success of risk mitigation measures implemented, the sample size will be reduced as risk mitigation measures are successfully implemented.[16] The review thresholds are shown in the tables above.

[16] High-risk projects focus on a sample size of 20 percent; Substantial risk, 15 percent; Moderate risk, 10 percent; and Low risk, 5 percent. Changes in risk levels will be communicated to the project implementation units as outcomes of ex-post procurement reviews.

ANNEX 6: Economic and Financial Analysis

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Introduction

1. **The EFA demonstrates the economic and financial viability of the project and whether the project will generate significant and positive benefits that outweigh its costs.** The analysis consists of (a) a literature overview of benefits that could accrue from the project; (b) a financial analysis on farm level for several relevant crops in the EP to show the financial viability of project interventions on household level; and (c) an economic analysis that demonstrates the economic benefits and cost to the economy and society overall. The benefits include (a) net incremental benefits from improved crop production as identified in the financial analysis, valued at economic cost; (b) forest-related benefits from selected enterprises—afforestation in a forest reserve and planting of woodlots on communal land; (c) and environmental benefits from reduced GHG emission and increased carbon sequestration valued at the SCC to capture the avoided losses and damages due to reducing GHG emissions. The economic analysis provides the project's economic NPV and IRR.

2. **The EFA aims at answering the following questions:** (a) Is public sector financing the appropriate vehicle? (b) What is the project's development impact? and (c) What is the World Bank's value-added?

3. **Rationale for public sector financing.** The ZIFLP aims to improve livelihoods and living conditions by improving agricultural, water, land, and forest management and thus reduce GHG emissions from land use change and deforestation. Reducing GHG emissions and providing other ecosystem services are global public goods and public on-site benefits and are typically underprovided because no institutional or economic mechanism exists that incentivizes rural populations to take socially optimal, sustainable land use decisions. Public sector financing is justified, because one of the core functions of a government is to supply public goods and handle externalities that markets fail to or cannot provide efficiently.

4. **The project's development impact will be demonstrated by results of this analysis that presents potential monetary and non-monetary benefits at household, community, and societal level.** The investment will (a) improve livelihoods and income of direct and indirect project beneficiaries involved in agriculture, land restoration, sustainable forest management, and conservation. Households' potential net benefits of participating in the project are outlined in the financial analysis below; (b) reduce deforestation, generate ecosystem-related goods and services; and (c) increase value-added and tax revenue for Government.

5. **World Bank's comparative advantage and value added.** The World Bank has considerable experience working with the GRZ and has long involvement in the agriculture and natural resources sectors. The World Bank is currently supporting a range of related agriculture and landscape management projects such as the COMACO Landscape Management Project, PPCR, and Irrigation Development Support Project (IDSP). These collaborations allow to build on lessons learned and synergies and enable effective and efficient implementation of the ZIFLP. The World Bank adds value by assisting the GRZ in accessing sources of global climate finance and in the coordination and application of that financing toward key development challenges.

Overview of Expected Benefits and Cost

6. **The ZIFLP's interventions are expected to yield multiple types of benefits; some are readily quantifiable, and others may be less tangible, such as strengthened institutions, habitat connectivity, or community empowerment.** Some of these benefits will be quantified using the SCC to assess the value of avoided damage, which would have been caused by additional tCO_2e emissions. The quantifiable benefits can be measured on three levels:

(a) **Household level.** Potential increases in incomes are expected due to increased crop yields, improved market access, or reduced postharvest losses.

(b) **Community level.** To protect natural resources and provide community benefits, community-based NRM schemes may be supported, which generate benefits through woodlots, ecotourism, or commercial hunting.

(c) **Environmental benefits to the economy and society.** Improved landscape management and agricultural practices are expected to reduce forest loss and degradation, enhance watershed protection functions, and encourage the economic uses of trees and establishment of plantations, contributing to reducing emissions.

Household-level Benefits

7. **Rational for CSA.** Crop productivity has decreased in recent years, due to inadequate inputs and maintaining soil fertility and structure remains a challenge for smallholders. Climate change poses a considerable challenge to Zambia's rain-fed agriculture. The temporal variation and late onset of rainfall, which negatively affect the growing season, are most critical in Zambia. CSA practices such as agroforestry, CA, and ISFM practices can strengthen farmers' capacity to adapt to climate change and risks and mitigate yield loss and variability. Several studies assess the benefits of CSA practices.

8. **Yield improvements and increased net benefits of agroforestry.** In Malawi and Zambia, planting agroforestry shrubs in fallow for two years and rotating with maize has improved maize yields compared with planting continuous unfertilized maize. Nitrogen-producing trees can add more than 60 kg of nitrogen per hectare per year, which can replace 75 percent of the nitrogen otherwise required from mineral fertilizer inputs. A meta-analysis finds that improved fallow, that is, planting trees or shrubs in sequence to annual food crops, can increase yields between 55 percent and 255 percent and can translate into increased net benefits for households: Ajayi et al. (2009)[17] found the net profit of intercropping agroforestry in the EP to be between US$269 and US$309 per hectare compared to US$130 per hectare for underfertilized maize. However, maize fertilized with organic manure seemed to be more profitable than the agroforestry approach, in particular when complemented with synthetic fertilizer. However, considering potential increases of fertilizer prices, the profitability of agroforestry has the potential to increase considerably. In addition, agroforestry has the potential to provide additional outputs, for example, fruits and firewood.

[17] Ajayi, O., Akinnifesi, F., Sileshi, G., and Kanjipite, W. 2009. Labour inputs and financial profitability of conventional and agroforestry-based soil fertility management practices in Zambia. Agrekon 48 (3): 276-292.

9. **Depending on the agroforestry system, benefits are often only realized after several years, which makes agroforestry uptake a complex undertaking.** Initially, high labor requirements and lack of access to seeds are the main constraints to adoption. While female farmers emphasized the nutritional benefits from legume rotations, women also face several adoption constraints and their level of participation in agroforestry projects is often low. One reason could be the lack of information, due to the bias of extension workers toward women.

10. **Yield improvements and increased net benefits of CA.** A meta-analysis conducted by Branca et al. (2011)[18] showed that improved agronomic practices such as cover crops, crop rotations (especially with legumes), and improved varieties can increase cereal productivity by 116 percent on average; reduced tillage and crop residue management lead to an increase of 106 percent and 25 percent, respectively. This can translate into enhanced financial returns: Haggblade et al. (2011)[19] reported gross margins of US$139 per hectare for unfertilized, conventional maize while unfertilized maize grown using CA techniques generated a gross margin of US$200 per hectare. Adding fertilizer to CA maize improved yields by 233 percent but only led to slight improvement in profitability, US$205 per hectare.

11. **There is an ongoing debate about the benefits of CA.** Mulching and no-tillage practices can improve yields and profits, because these systems require little inputs. Other studies report an increase in labor time due to weeding, which could shift a larger burden of work toward women. As crop residue is usually used for livestock feed, the question arises whether CA is worth the trade-off of reduced livestock numbers.

12. **Benefits of groundnut production.** Groundnuts play an integral role in the livelihoods of the Zambian population and are grown by more than 50 percent households. Groundnuts have a potential for improving income, reducing poverty, and improving nutritional status and are widely produced by women. Despite significant national demand, groundnuts remain a poorly commercialized crop and only about 45 percent of the producers are selling groundnuts. Challenges to commercialization are aflatoxin contamination caused by poor drying and storage conditions. There are significant variations in yields. In the EP, approximately 48 percent of farmers use first-generation, hybrid seed; still, average yields have remained low, ranging between 0.5 tons and 0.7 tons per hectare, while yield from ZARI research station shows a yield potential of about 2 t per hectare. Besides the type of seed, labor is very important for groundnut production, particularly during weeding, harvesting, and shelling. Typically, no fertilizer is applied and less than 1 percent of farmers used no-tillage practices for groundnuts. The national average gross margin for groundnuts was US$371 per hectare in 2012.

13. **Benefits of soybeans production.** Soybean production remains low despite its clear benefits for smallholders such as improving incomes and diets. This is due to limited availability of high-yielding soybean seed—65 percent of farmers use local seed—and limited incentive for investment in smallholder soybean seed multiplication. Low production quantities are also related to agronomic practices, such as late planting and poor disease management as well as low usage of inputs such as inoculum. Soya

[18] Branca, G., McCarthy, N., Lipper, L., and Jolejole, M. 2011. Climate-smart agriculture: A synthesis of empirical evidence of food security and mitigation benefits of from improved cropland management. Food and Agriculture Organization of the United Nations (FAO), Rome.

[19] Haggblade, S., Kabwe, S., and Plerhoples, C. 2011. Productivity impact of conservation farming on smallholder cotton farmers in Zambia. Working Paper No. 47, Food Security Research Project, Lusaka, Zambia.

production improves soil fertility and is frequently intercropped with maize, sunflowers, and groundnuts. Soybeans in Zambia are mostly used as an industrial crop and by-product for animal feed and offer significant opportunities for smallholder farmers to improve their income.[20] Soybeans yields were at 0.8 tons per hectare in 2012 and national average gross margins were US$384.

14. **Sustainable forest management - private benefits.** Forests provide a range of services that lead to private benefits such as timber production and tourism or the provision of natural resources such as fuel, raw materials, food, and medicine that contribute to the livelihoods and income of rural communities. Of rural Zambian households, 60 percent are heavily dependent upon the use of natural resources to supplement or sustain their livelihoods. Evidence from ongoing projects in Zambia showed that promotion of beekeeping as an alternative livelihood intervention has had a positive impact on household revenue. A recent project emphasizes beekeeping's high-income potential, referring to households that had an annual revenue of US$475.

15. **Forest resources - private benefits.** Forest resources contribute to approximately 20 percent of household incomes, including the market value of subsistence production. This includes wood products (timber, construction poles, and charcoal). Thatching grass and reed mats are the most commonly sold forest-based commodities, and relatively little income is derived from wild foods (for example, mushrooms, caterpillars, and fruits) or medicinal products. Thereby, income to rural households from non-wood forest products was estimated at US$138.8 million per year. Forests are an integral part of tourism in Zambia, with a direct value of US$110 million to US$179 million per year and can have a notable impact on national economy, as ecotourism was found to have a multiplier effect of 1.49.[21]

16. **Value of sustainably managed forests.** A recent analysis by the United Nations Environment Programme (UNEP) estimated the direct and indirect values of forests in Zambia, which may be lost if deforestation cannot be halted. Forests are estimated to contribute an equivalent to about 4.7 percent of GDP or US$957.5 million (using 2010 figures), excluding the market value of carbon. In addition, there are a range of forest ecosystems that are currently not accounted for in the GDP such as sedimentation retention, pollination, or carbon storage, which could contribute another 2.5 percent of the GDP or US$515 annually, implying that there is an undervaluation of forest of at least 40–60 percent. Thus, sustainably managed forests yield benefits worth on average US$25 per hectare per year, but can vary up to US$700 per hectare per year. This implies the large value-generating potential of the ZIFLP.

Environmental Benefits

17. **Forest protection - On-site public benefits.** The importance of the ecological functions of forests is widely recognized, but often difficult to monetize. While the economic values of watershed protection per hectare are often relatively small, it needs to be considered that watersheds spread across a large area, with the potential to accrue to an even larger number of beneficiaries. Forest and watershed protection is a key determinant of

[20] Lubungu, M., Burke, W.J., and Sitko, N. 2013. Analysis of the soya bean value chain in Zambia's Eastern Province. IAPRI Working Paper 74 Lusaka, Zambia.
[21] United Nations Environment Program (UNEP). 2015. Benefits of forest ecosystems in Zambia and the role of REDD+ in a green economy transformation.

(a) **Soil conservations, resulting in decreased on-site and off-site sedimentation.** An example of the above-cited 2015 report from UNEP showed that well-maintained forests affect water volume in dams and can generate a cost saving of US$247 million per year.

(b) **Water flow regulation including flood and storm protection.** For instance, studies in Cameroon and Colombia find a watershed's value for flood protection to be between US$3 and US$24 per hectare.[22]

(c) **Microclimate regulation**, in particular provided by humid rainforests, which is a natural protection against fire.

18. **Forest protection - global environmental benefits.** GHG emission mitigation and carbon sequestration are one of the most important public good externalities of forest and watershed conservation. At the global scale, soils store more than double the carbon of the total of atmosphere and biomass combined, making sustainable land and soil conservation ever more important. To assess the value of emission avoided, the shadow price of carbon or SCC is used. It presents the marginal damage cost of carbon emission, estimated as the present value of the stream of future economic damages of increased GHG emissions. An SCC of US$30 is proposed.[23] The net carbon balance will be assessed with EX-ACT and included in the economic analysis. In evaluating the potential for REDD projects, carbon can also be valued in terms of its market value, which was estimated at US$6 per ton in 2015. Depending on location, carbon stocks in Zambian forests are potentially worth about US$150 per hectare on average (once off), but range up to US$745 per hectare for intact forests. Annual values of sequestration in degraded area are about US$16–30 per hectare per year (UNEP, 2015).

Financial Analysis

19. **The financial analysis uses several crop budgets for 'without project' (WOP) and 'with project' (WP) scenarios to assess the incremental net benefits of a household cultivating the respective crops on 1 ha land.** The WP scenario models account for the introduction of CSA practices, improved fertilizer application, improved seeds, and access to extension services and are compared to the WOP scenario of conventional farming practices for maize, soybeans, groundnuts, and horticulture. An exchange rate of 9.73 ZMK to US$1 is assumed. Family labor is valued in all models at a rural wage rate of ZMW 20. Unless otherwise indicated, it is assumed that yield increases are phased resulting in full development in the second or third year. The models target 1 ha. Market prices and WOP yields remain constant. Markets are assumed to be competitive, and home consumption is valued at market price. Information for the crop budgets was received from COMACO, ICRAF, the Competitive African Cotton Initiative (COMPACI) and the International Institute of Tropical Agriculture (IITA)—as well as discussion with experts and the literature.

[22] Sources are the two following publications: (a) Pearce, D.W. 2003. The Economic Value of Forest Ecosystems. Commentary. CSERGE-Economics, University College London, London, UK. (b) Cavatassi, R. 2004. Valuation methods of environmental benefits in forestry and watershed investment projects. ESA Working Paper No. 04-01. FAO Agricultural and Development Economics Division, Rome.

[23] World Bank. 2014. Technical guidance note on the social value of carbon. Available at http://www.worldbank.org/en/topic/climatechange/brief/integrating-climate-change-world-bank (accessed January 2016).

The model assumptions are rather conservative, reflecting an average crop yield increase of 40 percent in the WP compared to the WOP. The model assumptions are further described in the paragraphs below.

20. **The financial analysis presents the models' NPV of incremental net benefits, calculated over a period of 20 years.** A discount rate of 12 percent is applied to reflect the rural rate of borrowing. In addition, benefit-cost analysis of discounted benefits and cost is presented as well as switching values for benefits and cost, which indicate by how much percentage the cost/benefits can increase/decrease before the NPV becomes zero. The exchange rate is ZMW 9.82 to the U.S. dollar. The results are presented in table 6.1.

21. **Maize.** Maize is the most common crop in the EP, and many farmers benefit from the Farm Input Subsidy program, which provides fertilizer to farmers. It is assumed that fertilizer is applied inefficiently in the WOP scenario leading to an average yield of 2.2 tons per hectare. Improved nutrient use, increased manure, and improved seeds plus CA practices could increase yield by 60 percent and annual net benefits by about 155 percent, leading to an NPV of incremental net benefits of US$871.

22. **Soybeans.** Compared to the WOP scenario, farmers apply ISFM practices and apply inoculant, lime, and basal fertilizer, which is recommended for the start of the growing season. This leads to increased input and labor cost. Yields increase from 0.9 tons per hectare to 1.3 tons per hectare is assumed, leading to NPV of incremental net benefits over 20 years of US$449.

23. **Groundnuts.** It is assumed farmers have access to improved seeds and apply CA practices including mulching, without fertilizer application. Labor time, except for harvesting, remains nearly constant, leading to a yield increase of 30 percent to 1.04 tons per hectare, resulting in an NPV over 20 years of US$768.

24. **Cassava.** Cassava is not a traditional crop in the EP but has notable climate-smart, food security, and nutritional benefits and could thus be considered for the intervention. Cassava roots can be stored in the soil and harvested as needed, thus contributing to households' food availability during extended periods.[24] The WP scenario assumes the introduction of diseases-resistant, virus-free planting material; mulching with crop residues; and the use of fertilizer. This results in increased labor requirements. Yield can increase from 8 tons per hectare to 12 tons per hectare and leads to an NPV of incremental bet benefits of US$631.

25. **Horticulture.** There is scope for improving horticulture production such as pumpkin leaves or moringa trees. Apart from providing additional income, moringa are nutritious and due to being perennial can restore degraded land. They require little inputs, except seeds, manure for planting, and labor time for pruning and harvesting. Dried moringa leaves sell at ZMW 25 per kg, and a farmer could produce about 200 kg/ha. This can result in an NPV over a period of 20 years of US$953.

26. **Beekeeping.** This is a livelihood intervention that can become relevant for members of CFMGs under Component 2. The WP scenario assumes the adoption of on average five modern beehives, instead

[24] FAO. 2013. Cassava Farmer Field Schools. Resource material for facilitators in sub-Saharan Africa. FAO Plant production and protection paper 218.

of three traditional log hives that are used currently. Modern beehives can be harvested twice per year and allow for a doubling in yields. It is assumed that equipment, such as protection suit or gloves, are shared among community members. The variable cost includes maintenance and inspection of the hives, clearing the production area to decrease risk of fires, and honey extraction. The model shows that farmers could increase their annual net benefits to on average US$106 and achieve an NPV of US$363.

Table 6.1. Results of the Financial Analysis

	Yield (kg/ha)			Annual Net Benefits (US$)			NPV Incremental Net Benefits (US$)	Benefit-cost Ratio	Switching Values (Percent)	
	WOP	WP	Increment (%)	WOP	WP	Increment			Benefits	Cost
Maize	2,200	3,520	60	98	246	152	871	1.59	−37	59
Soybeans	900	1,350	50	233	293	60	449	1.89	−47	89
Groundnut	800	1,040	30	386	492	106	768	2.36	−58	136
Cassava	8,000	12,000	50	372	590	219	631	1.29	−22	29
Moringa	—	65	—	—	167	—	953	6.29	−84	529
Beekeeping	10	20	108	23	106	82	363	2.44	−59	144

Economic Analysis

27. **Data and prices.** Economic values are calculated using shadow prices of foreign exchange to account for a premium on foreign exchange arising from distortions caused by policies. Distortions due to taxation, public subsidies, and other market imperfections are corrected for exported agricultural commodities and imported inputs. An economic cost of labor is used, factoring in the rural unemployment rate of 40 percent. A discount rate of 6 percent as recommended by the World Bank[25] is used.

28. **Economic cost.** The economic costs of the project were obtained by removing contingencies, leading to an economic cost of US$26.7 million. The project's total costs are US$32.8 million. Recurrent costs will be assumed between year 6 and year 20 at 2 percent of total project cost. Between year 1 and year 5, a gradual phasing of project cost is assumed in line with the disbursement schedule. Thus, 8 percent in year 1, 21 percent in year 2, 33 percent in year 3, 29 percent in year 4, and 9 percent in year 5.

29. **Benefit streams.** The analysis is conducted over a period of 20 years. The economic benefits included in the economic analysis are (a) net incremental benefits of CSA and improving crop productivity—as presented in the crop models for the financial analysis—are valued in economic prices and aggregated over beneficiaries who are expected to adopt CSA practices and to benefit from them; (b) economic benefits of sustainable forestry investments—establishment of woodlots and plantations and reforestation/afforestation in forest reserves; and (c) economic benefits related to the net carbon balance of the project. Benefits under (a) stem from crop models, which are presented in the Financial Analysis section; benefits for (b) and (c) are described below.

[25] World Bank. 2015. Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects.

30. **Beneficiaries and project area.** The ZIFLP will support training on CSA practices for 118,555 farmers, of which 50 percent are expected to adopt the practices on approximately 1 ha of land. Thereof, 80 percent or 47,422 beneficiaries are expected to achieve increased yield. Thereof, only 10 percent or 2,366 farmers are assumed to diversify production and newly introduce cassava and moringa crops. Both are marginal crops in the EP. It is assumed that 14,197 beneficiaries adopt improved practices for each value chain—maize, groundnuts, and soybeans. In addition, approximately 2,500 members of CFMGs are assumed to adopt beekeeping. Investment in sustainable forestry management practices is expected to support 10,000 ha of woodlots and plantations for fuelwood production and 3,500 ha of reforestation/afforestation in forest reserves.

Economic Benefits of Community-level Investments

31. It is assumed that activities related to establishing comprehensive land use management plans and community-level investment support could result into the following activities:

32. **Afforestation/reforestation in a forest reserve.**[26] This activity involves planting of non-native species and indigenous tree species in forest reserves. Non-native species are planted at a density of 1,111 stems per hectare, and indigenous species at 400 stems per hectare. The former is managed as typical plantation, while the latter will be managed to restore indigenous tree populations on previously abandoned land, with selective harvesting (1–2 trees per hectare per year) expected after 20 years. The total area estimated to be available for tree planting in forest reserves is 3,500 ha—split in 40:60 proportions between non-native and indigenous species. Benefits include the value of fuelwood from thinning and roundwood harvest for timber in year 15. Over 15 years, this results in an NPV of US$1.7 million (discount rate of 6 percent), which will be considered in the economic analyses.

33. Such an intervention would yield a further benefit related to employment (213 jobs over 15 years) and protection of ecological functions, which is expected to translate to more benefit streams such as improved productivity, decreased sedimentation, and improved microclimate.

34. **Developing plantations and community woodlots.** Information for this scenario is taken from the study performed by the firm UNIQUE's "Strategic interventions to address deforestation in the Eastern province" and was adjusted to better reflect project interventions. Targeting both individual and communal lands, fast-growing species (for example, *Eucalyptus*, *Senna*, and *Gliricidia*) would be planted at a planting density of 1,600 seedlings per hectare (2.5 m x 2.5 m spacing), with a rotation of 5 years, followed by coppicing for two more rotations—year 10 and 15. The total area available for woodlots is estimated at 10,000 ha. Benefits stem from fuelwood harvests in year 5, 10, and 15. Over 15 years, this results in an NPV of US$6.3 million (discount rate of 6 percent), which will be included in the economic analyses.

[26] Information for this scenario is taken from the 2016 background study undertaken by the firm UNIQUE "Strategic interventions to address deforestation in the Eastern province" and was adjusted to better reflect project interventions.

Economic Benefits Related to the Net Carbon Emission Balance

35. **Economic benefits stemming from the project's GHG mitigation and carbon sequestration potential.** The GHG emission mitigation potential and carbon sequestration potential for a range of project activities will be calculated in annex 7 with EX-ACT. A recent World Bank guideline suggests valuing carbon emission in the economic analysis at a shadow price of carbon, or SCC of US$30 per tCO_2e, and presents the marginal damage cost of carbon emission. It presents the value of the stream of future economic damages of increased GHG emissions.[27] For the sensitivity analyses, more conservative values are used, considering that not all of avoided damages accrue as benefit to Zambia, and a social value reflecting an approximate market value of US$5 per tCO2e emission is used.[28] The project results in a net carbon balance of −17,772,061 tCO_2e emission over a period of 20 years, thus an annual emission of 888,603 tCO_2e, which will be included in the analysis from year 3 onward.

36. **Results.** Based on the above assumptions and benefit streams (a)–(c), the project can generate an NPV of US$282 million over a period of 20 years, at a discount rate of 6 percent, and an IRR of 175 percent. If the social value of carbon is excluded, the NPV is US$25.6 million and IRR is 17 percent. If only benefits of introducing CSA and productivity enhancing practices are included, benefit stream (a) results in an NPV of US$14.6 million and an IRR of 14 percent.

37. **A sensitivity analysis was conducted for key variables to assess whether the NPV and IRR are robust against changes (Table 6.2).** The NPV and IRR are provided for three scenarios: when private and public good benefits are realized—benefit streams (a)–(c); direct benefits from sustainable forest management and CSA management are realized—benefit streams (b)–(c); and when benefits from CSA interventions are realized—benefit stream (a). If only benefits of CSA practice are factored in, the IRR could drop to critically low values, if benefits or adoption rates are decreased by 30 percent or project costs are increased by 30 percent. To ensure the robustness of the results, benefits from sustainable forest management practices need to be included.

[27] World Bank. 2014. Technical guidance note on the social value of carbon: http://www.worldbank.org/en/topic/climatechange/brief/integrating-climate-change-world-bank (Accessed January 2016).

[28] The existing carbon prices vary significantly—from less than US$1 per tCO2e to US$130 per tCO2e. About 85 percent of emissions are priced at less than US$10 per tCO2e, which is considerably lower than the price that economic models have estimated is needed to meet the 2°C climate stabilization goal recommended by scientists (World Bank. 2015. State and Trends of Carbon Pricing 2015 (September). World Bank, Washington, DC). The SCC is an estimate of the economic damages associated with a small increase in carbon dioxide (CO_2) emissions, conventionally one metric ton, in a given year. This dollar figure represents the value of damages avoided for a small emission reduction. The climate change damages include changes in net agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. Given current modelling and data limitations, not all important damages are assessed. The SCC is assessed with three integrated assessment models; estimates for 2020 for discount rates between 5 percent and 2.5 percent are US$12, US$43, and US$62 per tCO_2e emission (United States Environmental Protection Agency Technical documentation available at: http://www3.epa.gov/climatechange/EPAactivities/economics/scc.html (accessed January 2016).

Table 6.2. Results of the Sensitivity Analysis for Key Variables

	Benefit Streams (a)–(c)		Benefit Streams (a) and(b)		Benefit Stream (a)	
	NPV (US$ million)	IRR (%)	NPV (US$ million)	IRR (%)	NPV (US$ million)	IRR (%)
Base Scenario	282.5	175	25.59	17	14.61	14
Change in Hectares Targeted by the Project						
−10%	278.50	174	21.61	16	10.62	12
−20%	274.51	172	17.62	14	6.64	10
−30%	270.53	171	13.64	12	2.65	8
10%	286.47	176	29.58	19	18.60	16
20%	290.46	178	33.57	20	22.58	18
30%	294.44	179	37.55	22	26.57	19
Change in Project Cost						
−10%	284.72	193	27.83	19	16.84	16
−20%	286.95	215	30.06	21	19.08	18
−30%	289.19	242	32.30	24	21.31	21
10%	280.25	160	23.36	16	12.38	12
20%	278.02	146	21.13	14	10.14	11
30%	275.78	135	18.89	13	7.91	9
Change in Net Benefit						
−10%	251.71	158	20.51	15	10.62	12
−20%	220.94	140	15.43	13	6.64	10
−30%	190.16	122	10.34	11	2.65	8
10%	313.26	192	30.68	19	18.60	16
20%	344.03	208	35.76	21	22.58	18
30%	374.81	223	40.85	22	26.57	19
Change in SCC						
US$10	111.22	62	—	—	—	—
US$5	68.41	37	—	—	—	—
US$1	34.16	21	—	—	—	—

ANNEX 7: Greenhouse Gas Accounting and Climate and Disaster Risk Screening

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Corporate Mandate

1. **Corporate mandate.** In its 2012 Environment Strategy, the World Bank has adopted a corporate mandate to conduct GHG emissions accounting for investment lending in relevant sectors. This is an ex ante quantification of GHG emissions and considered an important step in managing and ultimately reducing GHG emission.

2. **Methodology.** To estimate the impact of agricultural investment lending on GHG emission and carbon sequestration, the World Bank has adopted the EX-ACT, which was developed by FAO in 2010. EX-ACT allows the assessment of a project's net carbon balance, defined as the net balance of CO_2 equivalent GHG that were emitted or sequestered as a result of project implementation compared to a WOP scenario. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in tCO_2e per hectare per year.

3. **Relation to BioCF.** The BioCF ISFL provides result-based finance on a jurisdictional scale by considering performance, that is, the reduction in net GHG emissions, in agriculture, forestry, and other land uses. The ISFL Methodological Approach for GHG accounting is developed to support the piloting of comprehensive accounting by providing overarching guidance on how to develop and apply a comprehensive GHG estimation, reporting, and accounting approach within a jurisdiction for the purpose of monitoring and reporting results to the ISFL.[29] It is important to note that the EX-ACT methodology considered in this ex ante GHG analysis may differ from the ISFL Methodological Approach and the GHG accounting approach that will be adopted within the jurisdiction.

Data Inputs to EX-ACT

4. **Climate and soil regime.** The project area is largely in a warm temperate and dry climate and moisture regime. The dominant soil type is high activity clay soil. The project duration is five years, though most interventions will be implemented from year three to five; a capitalization period of 17 years is assumed to allow changes in soil carbon to materialize. Dynamics of evolution are assumed to be linear. Default 'Tier 1' coefficients are used.

5. **Project activities.** Several project activities, which will be implemented under Component 2, can be captured with EX-ACT. These include the introduction of CSA practices and the introduction of sustainable forest management practices. The project has demand-driven elements (for example, related to sustainable forest management activities); thus, several data inputs to EX-ACT are based on assumptions, informed by discussions with technical experts. The assumptions are aligned with assumptions in the project's Economic and Financial Analysis (annex 6) and the Results Framework where

[29] BioCarbon Fund. ISFL Methodological Approach Workshop Summary. December 9–10, 2016. At the Dupont Circle Hotel, Washington DC, USA.

possible. All assumptions about the current and WOP and WP scenarios are presented in table 7.1 and explained in the following paragraphs. It should be noted that this is an ex ante analysis.

6. **Introducing CSA practices.** The project will implement a training-of-trainers approach to reach about 118,555 farmers of which approximately 59,000 famers are expected to adopt CSA practices such as CA, ISFM, improved seeds, and agroforestry on, on average, 1 ha of land. Thereof, 500 ha would be agroforestry (trees planted on agricultural land); 10,755 ha would be cultivated by lead farmers who will have access to improved seeds at an early stage of the project[30]—thus assuming improved agronomic practices, improved nutrient management, and no tillage in EX-ACT; and the remaining land area will be cultivated by 'follower farmers' who are expected to apply no tillage practices, which is captured in EX-ACT. The key crops considered are maize, soybeans, and groundnuts, as well as horticulture and cassava—though on a smaller hectare area. It is assumed that farmers already have access to nitrogen fertilizer for maize production and will be taught to apply fertilizer more efficiently. However, it is assumed that fertilizer consumption could increase for soybean production by 50 kg per hectare as well as cassava by 100 kg per hectare. It is assumed that the project targets approximately 14,985 ha agricultural land under soybean cultivation and will support the introduction of cassava on 1,183 ha.

7. **Sustainable forest management, introduced by the project, targets forest reserves that are managed by the FD as well as CFMGs, to the extent of 66,000 ha.** The total forest area in the EP is estimated at 2.6 million ha. Studies have indicated that the province has the following potential: 111,960 ha available for natural regeneration of forests and 16,000 ha for woodlots and plantations. In addition, the province has about 1 million ha with potential for conservation and sustainable management. The forestry interventions are largely demand-driven and can include conservation and sustainable utilization of existing forests; afforestation and reforestation of abandoned lands (previous charcoal areas, overutilized forest areas, and abandoned agricultural fallows); and the creation of woodlots for firewood production, beekeeping, or nurseries. It is assumed that the project can introduce improved forest management in 150,000 ha in forest reserves with better management, about 300,000 ha of areas under improved management for conservation in National Parks (Lukusuzi and Luambe) and 125,000 ha of forests managed by CFMGs. The project is thus expected to have a positive impact on a cumulative forest area of about 600,000 ha, in addition to impacts on reduced deforestation to be realized through interventions such as sustainable agriculture and cookstoves. Due to the demand-driven nature of the project there are still unclarities abaout the concrete project activities that will be implemented. Thus, we take a conservative approach in this analysis and account for activties that have been specifically discussed during project preparation, covering 66,000 ha. These estimates will be updated in the first year of the project.

8. **Reduction of deforestation—introducing CSA and sustainable forest management practices.** As a consequence of improved forest management and the introduction of CSA practices and sustainable

[30] Follower farmers would have access to improved seed through the seed multiplication and distribution system, which will be set up by the project. As this will happen at a later stage, the positive effect of adopting improved agronomic practices is not accounted for. Instead, it is assumed that follower farmers will apply principles of CA and ISFM, which is captured as no tillage and improved nutrient management in EX-ACT.

landscape management practices, it is expected that deforestation will be reduced by 24,170 ha, again a conservative estimate that will need to be updated in the first year of the project.

9. **Reducing deforestation—introducing improved cookstoves.** In addition, the project introduces improved cookstoves to 86,400 households, which would reduce fuelwood consumption. An FAO study assessed the forest growing stock in Zambia between 40 and 154 m^3 per hectare, depending on the province, and on average 84 m^3 per hectare in EP.[31] A recent report by UNIQUE suggests that households in the EP collect up to 1.6 tons of fuelwood per year, which would result in 171,072 m^3 (considering all households over a three-year implementation period) and thus 2,036 ha deforested land. It is assumed that improved cookstoves introduced by the project can decrease wood fuel consumption by 40 percent, reducing deforestation by 814 ha.

10. **Through community matching grants under Component 2, beneficiaries may have access to small-scale irrigation, small ruminants or poultry, or small-scale agro processing.** However, there are currently no indications on how many beneficiaries may engage in these activities. Thus, it is currently not possible to make informed estimates about inputs to EX-ACT or subsequent electricity use.

Table 7.1. Inputs to EX-ACT in the Current WOP and WP Scenarios

Activities	Current Scenario	WOP Scenario	WP Scenario
Sustainable Forest Management:			
Plantations	0 ha, on abandoned lands (previous charcoal areas, overutilized forest areas, and abandoned agricultural fallows)		10,000 ha forest plantations
Afforestation/reforestation in forest reserves			2,000 ha afforested/reforested
Community woodlots	No woodlots		1,500 ha woodlots
Reduction of deforestation - introducing CSA and sustainable forest management practices	Deforestation as usual, land converted to agricultural land		Avoided deforestation of 24,170 ha
Reduction of deforestation - result of improved cookstoves	Wood fuel collection as usual		Avoided deforestation of 814 ha
CSA Practices:			
Agroforestry	500 ha agricultural land under traditional management techniques		500 ha under agroforestry
Improved production techniques and improved seed	10,755 ha under traditional management techniques		10,755 ha under improved agronomic practices; improved nutrient management; and no-tillage
Improved production techniques	47,245 ha agricultural land under traditional management practices		47,245 ha no-tillage
Inputs	0 tons		870 tons of nitrogen fertilizer

[31] FAO. 1998. Woodfuel Review and Assessment in Zambia. Data Collection and Analysis for Sustainable Forest Management in ACP Countries - Linking National and International Efforts. EC-FAO PARTNERSHIP PROGRAMME (1998–2002). Addis Ababa.

Results

11. **Results.** The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the WOP scenario. Over the project duration of 20 years, the project constitutes a carbon sink of 17,772,061 tCO_2e. The project provides a sink of 183 tCO_2e per hectare, equivalent to 9.2 tCO_2e per hectare per year. The project thus demonstrates a sizable carbon sink, in particular, due to the reduction of deforested area and afforestation and reforestation activities. However, the results have to be interpreted with caution as some information on, for example, livestock, fuel, and electricity usage is not known at this stage and these interventions may constitute a carbon source. On the other hand, due to the demand-driven nature of the project, the analysis may have omitted interventions that support sustainable forest management and may generate an additional carbon sink. It is thus expected that despite these changes, the project would remain a carbon sink due to the forestry activities.

Table 7.2. Results of the Ex-Ante GHG Analysis

	Over the Economic Project Lifetime (tCO2e)			Annual Average (tCO2e per Year)		
Project Activities	**GHG Emissions of WOP Scenario (1)**	**Gross Emissions of WP Scenario (2)**	**Net GHG Emission (2 – 1)**	**GHG Emissions of WOP Scenario (3)**	**Gross Emissions of WP Scenario (4)**	**Net GHG Emission (4 – 3)**
Avoided deforestation	10,127,631	0	(10,127,631)	506,382	0	(506,382)
Afforestation/ reforestation	0	(7,133,486)	(7,133,486)	0	(356,674)	(356,674)
Land Use Change to agroforestry	0	(7,572)	(7,572)	0	(379)	(379)
Improved annual crop management practices	218,559	(295,239)	(513,798)	10,928	(14,762)	(25,690)
Introduction of agroforestry	0	(72,353)	(72,353)	0	(3,618)	(3,618)
Inputs	0	73,829	73,829	0	4,102	4,102
Total	10,346,190	(7,425,871)	**(17,772,061)**	(517,310)	(371,294)	**(146,016)**
Per ha	107	(77)	**(184)**	5.3	(3.8)	**(9.2)**

12. **The Climate Risk Screening Report established that exposure to the current and future climate and geographical hazards will pose a moderate risk to the project.** Generally, Zambia has been exposed to a number of climate hazards, including droughts, floods, and extreme temperatures. Given this context, project activities have been designed to explicitly address these vulnerabilities—by providing diversified livelihood alternatives to enhance adaptation and resilience; reduce overdependence on natural resources; and mitigate GHG emissions from agriculture, forestry, and other land use. In the absence of these interventions, the exposure to these climate hazards may result in irreversible impact on the agriculture sector, forestry, wildlife, and other land use in the project area. Hence, the interventions from the project are timely to slow down the pace of this impact.

13. **All project activities are directly linked to climate adaptation and mitigation co-benefits.** Subcomponent 1.1 will create the enabling environment for investing in alternative livelihoods for the communities. Subcomponent 1.2, on the other hand, will create the framework for GHG emission reductions. The framework has both mitigation and adaptation co-benefits because the mitigation efforts are targeted at increasing the resilience to climate change in the long term. Component 2 will finance on-the-ground activities that improve rural livelihoods, conserve ecosystems, and reduce GHG emissions. It includes CSA that enhances resilience and reduces GHG emissions. The forestry and wildlife management activities will improve the management and conservation of natural resources, create income opportunities that enhance adaptation and resilience, and generate carbon benefits. Component 3 on project management will finance activities related to national- and provincial-level project coordination and management, ensuring that adaptation and mitigation benefits are fully realized.

ANNEX 7: MAP

COUNTRY: Zambia
Zambia Integrated Forest Landscape Project

Land Cover Map of the Eastern Province