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**The World Bank**

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Report No: PAD2660

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL FINANCING LOAN

IN THE AMOUNT OF US\$13.5 MILLION

AND A

PROPOSED ADDITIONAL FINANCING GRANT

IN THE AMOUNT OF US\$1.1 MILLION

AND RESTRUCTURING

FROM THE

STRATEGIC CLIMATE FUND - PILOT PROGRAM FOR CLIMATE RESILIENCE

TO THE

REPUBLIC OF ZAMBIA

FOR THE

ZAMBIA STRENGTHENING CLIMATE RESILIENCE (PPCR PHASE II)

MAY 23, 2018

Environment & Natural Resources Global Practice  
Africa Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective May 08, 2018)

Currency Unit = Zambian Kwacha (ZMW)

US\$1 = ZMW 9.94

## FISCAL YEAR

January 1–December 31

## ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
CDP	Communal Development Plan
CRAFT	Climate Risk Adaptation Facilitating Team
CSA	Climate-smart Agriculture
ESMP	Environmental and Social Management Plan
FM	Financial Management
FMNR	Farmer-managed Natural Regeneration
GDP	Gross Domestic Product
HH	Household
IDA	International Development Association
IFC	International Finance Corporation
IRR	Internal Rate of Return
ISR	Implementation Status and Results Report
M&E	Monitoring and Evaluation
MoNDP	Ministry of National Development Planning
MTR	Mid-Term Review
NGO	Nongovernmental Organization
NPCU	National Project Coordination Unit
Open DRI	Open Data for Resilience Initiative
PAD	Project Appraisal Document
PDO	Project Development Objective
PF	Procurement Framework
PIU	Project Implementation Unit
PP	Project Paper
PPCR	Pilot Program for Climate Resilience
PPSD	Project Procurement Strategy for Development
SCD	Systematic Country Diagnostic
SCF	Strategic Climate Fund
SMS	Short Message Service
SORT	Systematic Operational Risk Tool

SPCR	Strategic Program for Climate Resilience
TA	Technical Assistance
TTL	Task Team Leader
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WHRS	Warehouse Receipt System

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**BASIC INFORMATION – PARENT (Zambia Strengthening Climate Resilience (PPCR Phase II) - P127254)**

Country Zambia	Product Line Recipient Executed Activities	Team Leader(s) Iretomiwa Olatunji		
Project ID P127254	Financing Instrument Investment Project Financing	Resp CC GEN01 (9270)	Req CC AFCS1 (284)	Practice Area (Lead) Environment & Natural Resources

Implementing Agency: Ministry of National Development Planning

Is this a regionally tagged project?  No	
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Bank/IFC Collaboration  No
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Approval Date 09-May-2013	Closing Date 31-Dec-2019	Original Environmental Assessment Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
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<input type="checkbox"/> Situations of Urgent Need or Capacity Constraints	<input type="checkbox"/> Financial Intermediaries (FI)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Project-Based Guarantees

**Development Objective(s)**

The development objective of the project is to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin. The project involves three components:

1. Strategic National Program Support, aiming to strengthen the national institutional and financial framework for climate resilience, by (a) providing institutional support to the national climate change program; and (b) strengthening climate information.



2. Support to Participatory Adaptation, through strengthening of the adaptive capacity of vulnerable rural communities in the Barotse sub-basin.
3. Pilot Participatory Adaptation, through the funding of actual participatory adaptation investments in the Barotse sub-basin, including (a) community adaptation sub-grants; (b) establishment and operation of an adaptation contingency fund; and (c) rehabilitation and strengthened management of traditional canals.

**Ratings (from Parent ISR)**

	Implementation				
	24-Dec-2015	24-Jun-2016	22-Dec-2016	28-Jun-2017	27-Dec-2017
Progress towards achievement of PDO	S	S	S	S	S
Overall Implementation Progress (IP)	MS	MS	MS	MS	MS
Overall Safeguards Rating	S	S	S	S	S
Overall Risk	M	M	M	M	M


**BASIC INFORMATION – ADDITIONAL FINANCING (Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) - P165442)**

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P165442	Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II)	Restructuring, Scale Up	No
Financing instrument	Product line	Approval Date	
Investment Project Financing	Recipient Executed Activities	14-Jun-2018	
Projected Date of Full Disbursement	Bank/IFC Collaboration		
28-Apr-2023	No		



Is this a regionally tagged project?	
No	
<input type="checkbox"/> Situations of Urgent Need or Capacity Constraints	<input type="checkbox"/> Financial Intermediaries (FI)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Project-Based Guarantees
<input type="checkbox"/> Disbursement-linked Indicators (DLIs)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Alternative Procurement Arrangements (APA)	

**Disbursement Summary (from Parent ISR)**

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
Grants	36.00	20.47	15.53	 57 %

**PROJECT FINANCING DATA – ADDITIONAL FINANCING (Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) - P165442)****FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	14.60
<b>Total Financing</b>	14.60
<b>of which IBRD/IDA</b>	0.00
<b>Financing Gap</b>	0.00

**DETAILS****Non-World Bank Group Financing**

Trust Funds	14.60
Climate Investment Funds	14.60



## COMPLIANCE

### Policy

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

Yes  No

Does the project require any other Policy waiver(s)?

Yes  No

## INSTITUTIONAL DATA

### Practice Area (Lead)

Environment & Natural Resources

### Contributing Practice Areas

### 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

No

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

No

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

No

**PROJECT TEAM****Bank Staff**

<b>Name</b>	<b>Role</b>	<b>Specialization</b>	<b>Unit</b>
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Nathalie Weier Johnson	Team Leader	Conservation and Adaptation	GEN01
Wedex Ilunga	Procurement Specialist (ADM Responsible)	Procurement Specialist	GGOPA
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**Extended Team**

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Location</b>
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ZAMBIA

ADDITIONAL FINANCING FOR ZAMBIA STRENGTHENING CLIMATE RESILIENCE (PPCR PHASE II)

TABLE OF CONTENTS

<b>I. INTRODUCTION .....</b>	<b>7</b>
<b>II. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING .....</b>	<b>8</b>
<b>III. DESCRIPTION OF ADDITIONAL FINANCING .....</b>	<b>11</b>
<b>IV. KEY RISKS .....</b>	<b>13</b>
<b>V. APPRAISAL SUMMARY .....</b>	<b>14</b>
<b>VI. WORLD BANK GRIEVANCE REDRESS .....</b>	<b>21</b>
<b>VII. RESULTS FRAMEWORK AND MONITORING .....</b>	<b>33</b>
<b>ANNEX 1: DETAILED PROJECT DESCRIPTION .....</b>	<b>59</b>



## I. INTRODUCTION

1. **This Project Paper (PP) seeks the approval of the Executive Directors to provide an Additional Financing (AF) loan and grant in the amount of US\$14.6 million to the Republic of Zambia to scale up activities of the ongoing Zambia Strengthening Climate Resilience (PPCR Phase II, the ‘parent project’).** The proposed AF will be accompanied by a restructuring of the project which will include the following changes: extension of the closing date of the project by 36 months from 2019 to 2022 to allow sufficient time to implement the new activities; amendment of the project Results Framework to add new indicators for monitoring the new activities and adjustment of the existing indicator targets to capture the increase in project beneficiaries; changes to disbursement categories which will be combined under one to avoid the need for future restructuring for disbursement category overruns; addition of the Zambia Metrological Agency as an additional implementing agency with the Disaster Management and Mitigation Unit (currently implementing the climate information sub-component). The AF is proposed in response to an endorsement letter from the Government of the Republic of Zambia dated September 20, 2017, requesting the World Bank to implement a project to mobilize private sector investments to support climate resilience projects.

2. **This AF aims to complement existing project funding to allow for an extension of the programmatic approach of the Strategic Program for Climate Resilience (SPCR) being implemented through the World Bank–led parent project to improve the livelihoods and resilience of rural communities in the Barotse sub-basin.** At the national level, the AF seeks to increase the dissemination and accessibility of information on weather, markets, commodity prices, climate-smart practices, outbreaks of diseases/pests, and other important information to help producers across Zambia in making critical management decisions about their livelihoods and enterprises. Possible examples include selecting drought-tolerant varieties of crops based on forecasts of low rainfall, switching cash crops based on price information, and undertaking climate-smart practices to minimize impacts of projected dry spells or floods. It will also ensure the achievement of the SPCR, that is, the Pilot Program for Climate Resilience (PPCR) Investment Plan programmatic objective. (A summary of the proposed AF activities is provided below under Section III, Description of the Additional Financing with details in Annex 1.)

3. **The resources for the AF come from the Climate Investment Fund, PPCR window to fund SPCR investment.** The funds are to stimulate a private sector approach to livelihood resilience to climate change and were initially proposed to be implemented by the International Finance Corporation (IFC). Following an assessment of the bankability of the envisioned private sector activities, IFC, in coordination with program multilateral development bank counterparts and the National Coordinator for the Zambia PPCR Phase II Project, proposed to the Government of the Republic of Zambia a potential reallocation from the IFC of its remaining US\$13.5 million concessional finance and US\$1.1 million grant resources toward a public/private sector project that could be implemented and led by the World Bank. This proposal was approved by the PPCR



Sub-Committee on June 22, 2017. Based on the achievements produced by the parent project, the Government sees benefit in deepening and scaling up the Zambia PPCR by building on the current achievements on the ground with additional funds (see highlights under paragraph 5 below).

4. **This proposed AF, therefore, promotes a private sector approach and is linked to the SPCR<sup>1</sup> goal that seeks to explore the private sector's strengths and its potential for a country's economic growth and stability.** The project aims to ensure that both the public and private sectors have the knowledge, capacity, and financial incentives necessary to embark on appropriate and timely climate resilience building interventions. The eventual outcome will lead to sustaining the country's economic and social prosperity. In the Barotse sub-basin, there are scores of producers that can be supported to help implement a private sector-led approach to climate resilience in line with the Zambia SPCR.

## II. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

5. **The parent project, Zambia Strengthening Climate Resilience (PPCR Phase II, P127254), was approved on May 9, 2013, and includes a PPCR investment plan of US\$36 million (US\$31 million grant and a concessional loan of US\$5 million).** The project became effective on September 12, 2013, and is being implemented over a period of six years with a closing date of December 31, 2019. It is initially being piloted in 14 districts<sup>2</sup> (Western and Southern provinces) of the Barotse sub-basin. The parent project has been successfully supporting national and decentralized institutional strengthening for decision making on climate risk investment planning and implementation of community, ward, and district-level sub-grant-funded microprojects.

6. **The project has demonstrated a successful model for implementing climate adaptation measures including increased agricultural productivity and diversification to increase incomes, food security, nutrition, and climate resilience.** Successes achieved by the parent project and linked to this climate adaptation model include, on-the-ground investment that supported climate proofing, rehabilitation, and/or building of infrastructures such as two priority canals (Lubitamei and Muoyowamo, which are also used for the annual traditional Koumboka ceremony), along with 34 secondary and tertiary canals for improved irrigation, transport, and solar powered boreholes. This has led to diversifying livelihoods through incorporating climate risk consideration to a selection of livelihoods by producer groups, movement from sole maize cropping, and promoting the use of non-tapped resources. To date, over 30,000 households (HHs) translating into 158,081 individuals, compared with 40,000 individuals at appraisal, have been able to make better informed decisions on the choice of climate-resilient livelihoods.

7. **Other successes achieved include technical capacity building,** that is, training of 12 Climate Risk Adaptation Facilitating Teams (CRAFTs); training of more than 2,500 actors on

<sup>1</sup> Zambia Strategic Programme for Climate Resilience 2011; Submission to Climate Investment Funds.

<sup>2</sup> Kazungula (Southern Province), Kalabo, Kaoma, Limulunga, Lukulu, Luampa, Mitete, Mwandi, Mongu, Nalolo, Senanga, Sesheke, Shangombo, and Sioma (all in Western Province).



themes that enabled trainees to improve the quality of services rendered in planning, development, and approval of sub-grant-funded projects that are climate resilient; and mainstreaming of climate risk consideration into the Communal Development Plans (CDPs) and the Ward and District Development Plans. All this influenced the mainstreaming of climate risk consideration in the National Development Plan and the subsequent development and approval of a National Climate Change Policy, which was approved on April 26, 2016.

**8. The progress toward the achievement of the Project Development Objective (PDO) has remained Satisfactory since implementation commenced.** In addition, the overall Implementation Progress has remained Moderately Satisfactory for the past 12 months.

**9. The AF would be used to scale up successful sub-grant-funded parent project activities across all three components with a focus on stimulating a private sector approach among producer groups, moving them from subsistence to market-level production, through three interlinked activities (see section III for details).** The PDO, “to strengthen Zambia’s institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin” will not be changed. Careful consideration was given to whether the additional funds would be used to expand the geographic coverage of the program beyond the Barotse region, and it was decided that a deep dive into the existing area where institutional capacity and implementation structures have already been established will yield greater impact. The proposed AF would be implemented over a 36-month extension period with a new closing date of December 31, 2022. In line with findings of the recently completed Zambia Systematic Country Diagnostic (SCD) (Report #124032 of March 15, 2018), the AF places a central emphasis on microprojects that augment increasing resilience, job creation, and sustainable renewable natural resource management while engaging various types of business enterprises.

**10. The rationale for the proposed AF is that it represents an opportunity for scaling up and achieving additional results from new and current well-performing sub-grant-funded projects, including increased productivity and diversification to increase incomes, food security, nutrition, and climate resilience.** It also provides additional livelihood and income opportunities for individuals or groups of producers to enter into new enterprises linked to potentially lucrative value chains through various means of support. A complementary aim is to develop a service delivery system to disseminate climate-related technical information from a platform to end users. The additional investment will help leapfrog ongoing investment to the next level, for example, by moving small producers from subsistence production to a higher level that enables active engagement in the marketplace. Key activities include the provision of technical assistance (TA) and enterprise grants to enable local producers to enter the marketplace by undertaking a lucrative enterprise that produces a product demanded by the market. This AF will, therefore, help producer groups and individuals to surmount both financial and technical barriers that compromise their ability to enter and meaningfully participate in the market economy through which they can contribute to national development.



11. **The AF is expected to contribute significantly to the outcomes of the parent project with respect to developing institutional capacity for implementing and supporting private-public sector partnerships that build capacity for small producers to engage productively in the marketplace while also reducing their vulnerability to climate change.** A better integration of small producers in the market will provide a platform for the growth and development of a robust and more resilient rural economy with reduced dependencies on external assistance.

12. **The proposed project meets the World Bank’s criteria for an AF, including the following:**

- (a) **Strategic alignment.** Zambia’s climate is highly variable, with frequent droughts, seasonal and flash floods, extreme temperatures, and dry spells. The country is, therefore, vulnerable to climatic variability. Estimations are that the increased frequency in floods and droughts cost the country about 0.4 percent in annual economic growth. The country ranks 139th out of 188 economies, that is, in the bottom quartile of the global human development rankings.<sup>3</sup> The challenges to adapt to the climatic variability are therefore obvious, particularly because climatic variability is projected to increase. The agricultural sector and the productivity of natural resources are being affected by climate change in Zambia. Climate risk amplifies uncertainty and potentially increases the poverty levels of most of the rural population (the 2016 national rural population stands at 59 percent)<sup>4</sup> whose livelihoods are linked to the productivity of natural resources. This is particularly true in the Barotse plains where poverty levels are disproportionately high (poverty level is above 80 percent, with 87.5 percent of the population living in the rural area),<sup>5</sup> and socioeconomic development is low. Therefore, by strengthening the capacity of the small producers through a private sector approach, providing enterprise grants, and developing a service delivery system for an information platform to facilitate the dissemination and accessibility of market and climate information to farmers, the targeted producer group will be able to participate in the market. These project interventions, related to agriculture and renewable natural resources management, will contribute to poverty alleviation and improved food security. In this way, the proposed AF will squarely contribute to the World Bank’s twin goals of eliminating extreme poverty and boosting shared prosperity.
- (b) **Scaling up.** The proposed AF will help bring about ‘triple wins’—scaling-up, sustainability, and securing resilience through adoption of new techniques and technologies, such as conservation farming and solar pumps, that support climate-smart productivity, use of climate and market information for decision making, diversification to climate-resilient production options, among others. The project will

<sup>3</sup> United Nations; Human Development Index 2016. Zambia ranking on the global human development ranking. <http://hdr.undp.org/en/countries/profiles/ZMB>.

<sup>4</sup> World Bank. 2016. World Bank Data Catalog. <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>.

<sup>5</sup> Living Condition Monitoring Survey 2015.

[https://www.zamstats.gov.zm/phocadownload/Living\\_Conditions/2015%20Living%20Conditions%20Monitoring%20Survey%20Report.pdf](https://www.zamstats.gov.zm/phocadownload/Living_Conditions/2015%20Living%20Conditions%20Monitoring%20Survey%20Report.pdf).



provide support through enterprise grants and TA in managing business development that goes beyond the business-as-usual subsistence level. Having recognized the importance and the growing demand for climate services, scaling up provides the rationale for driving the process of replication of the current model within the current beneficiary districts in the Barotse plain. This will potentially increase the number of beneficiaries far beyond set targets under the parent project (see the Results Framework for additional information). A scaling up will move project activities impact toward enterprise grants, which are tangible, viable and attractive to communities.

13. **This AF is timely and will also benefit from exploring potential synergy with the ongoing Zambia Agribusiness and Trade Project (P156492), approved on December 16, 2016.** The AF will help fast-track mostly subsistence-level producers to engage in a public-private sector partnership approach for the new enterprise grant investment. In addition, the AF will learn from the Tajikistan PPCR that was implemented through the Tajikistan Climate Resilience Financing Facility (CLIMADAPT). Their successful model of providing support to smallholder private sector actors will be reviewed and adapted to the context in Zambia.

### III. DESCRIPTION OF ADDITIONAL FINANCING

14. The additional proposed activities and proposed allocation of funds under the AF are as follows:

- (a) **AF Activity 1 (US\$2.88 million): Identify the challenges, risks, and opportunities for producers to transform their livelihoods into market-based enterprises.** This activity is linked to project Component 2 - Support to Pilot Participatory Adaptation and specifically the facilitation and strengthening of community decision making and delivery of specialized TA and training. The main aim of the activity is to identify the key challenges, risks, and opportunities for transforming livelihoods of producers into market-based enterprises. The project will provide resources to conduct value chain studies (including secondary sources of information) to identify key challenges to market entry and design interventions to incentivize smallholder producers to initiate viable enterprises for increasing productivity, incomes, and resilience to climate change. Key sub-sectors include rice, fish, livestock, cassava, irrigated horticultural crops, mangoes, cashew nuts, and others (for example, essential oils and sesame that may be identified by the reviews, producer groups, and the CRAFTs). In addition, the project will help (a) develop templates and guidelines for business plans and enterprise grants, (b) build capacity of producer groups to develop and implement business plans for targeted enterprises, and (c) assist in screening and selecting the best enterprise grant proposals to be supported.

Implementation of Activity 1 will have many spin-offs that could have application far beyond the Barotse subregion. Examples include (a) attracting private sector





investment in providing goods and services, (b) aggregating produce from outgrower schemes, (c) conducting reviews of value chains, (d) producing templates and guidelines for business plans and enterprise grants for application with other initiatives elsewhere in the country, and (e) emergence of a nationwide network of public and private actors that will facilitate widespread diffusion of market-driven enterprises.

- (b) **Activity 2 (US\$1.30 million): Develop a service delivery system for an information platform to facilitate the dissemination and accessibility of information for producer groups and other users/stakeholders.** This activity builds on and supports Component 1 - Strategic National Program Support, in particular Subcomponent 1.2 - Strengthened Climate Information. The main objective of Activity 2 is to provide credible and time-bound weather, market, climate-smart practices and other relevant types of information to smallholder producers and other users to enable more informed decision making about their livelihoods and production enterprises. The information may take different forms for different users, for example, agrometeorological, weather forecasts including possibilities of floods or drought, market trends, commodity prices, climate-smart practices, and disease/pest outbreaks. All forms of information are key in helping producers and other users to make better choices about managing their operations in response to changing conditions. Key milestones for Activity 2 include evaluating existing platforms and mechanisms for generating and disseminating information, strengthening an existing agency of the Government mandated to secure and coordinate the dissemination of information, building the capacity of Government agencies to improve information generation and dissemination, and engaging one or more competent firms or agencies to package climate-smart practices tailored for dissemination using different media depending on target audience and end users taking into consideration communication accessibility. The key element of this activity is its national scope of impact.
- (c) **Activity 3 (US\$7.64 million): Support livelihood diversification/enterprises (for example, crops, fisheries, livestock, and irrigated high-value crops) under targeted value chains linked to strong markets.** This activity builds on Component 3 - Pilot Participatory Adaptation, Subcomponent 3.1 - Community adaptation sub-grants. The aim of Activity 3 is to transform rural livelihoods in the Barotse sub-basin of Western Province from subsistence to prosperous market-driven enterprises through enterprise grants to producer groups and individuals. The central focus is to build the capacity of producers, individually or in organized groups, through targeted enterprise financing and specialized support to develop technical, business, and marketing skills in managing the targeted enterprises. Choices of the best enterprises will be based on the results of the participatory analysis of key value chains from Activity 1. This will be combined with initiatives under Activity 2 to improve access to a wide variety of information, knowledge, and technology. This will be a



competitive process. The ultimate objective will be to increase productivity, profitability, and sustainability with enhanced resilience to climate change, supporting producers to move up the socioeconomic ladder.

Table 1. AF Activity Structure and Funding Breakdown (US\$, millions)

	Activity	Budget
1	Activity 1: Identify the challenges, risks, and opportunities for producers to transform their livelihoods into market-based enterprises	2.88
2	Activity 2: Develop service delivery system for an information platform to facilitate the dissemination and accessibility of information for producer groups and other users/stakeholders	1.30
3	Activity 3: Support livelihood diversification/enterprises (for example, crops, fisheries, livestock, and irrigated high-value crops) under targeted value chains linked to strong markets	7.64
4	Contingency	1.34
5	Project Management	1.44
6	Total	14.60

#### IV. KEY RISKS

15. **Key risks.** The overall project risk is moderate. The staff from the Project Implementation Unit (PIU), that is, national and subnational including the Provincial Planning Unit and District Planning Units, have acquired experience and skills and have implemented successful interventions under the parent project. The risks related to AF activities are the same as for the parent project. The risk for the project is unchanged because the enabling environment in the country has remained stable to date since the parent project became effective.

16. **Political and Governance risks as well as Macroeconomic risks are substantial. Even though the political stability following the most recent elections in August 2016 has strengthened the continuity of policy direction, the likelihood of policy shifts remains high, and they can increase uncertainty.** While the AF can do little to mitigate political risks, regular ongoing high-level dialogue between the Government and the World Bank helps ensure institutional and policy stability. As for the macroeconomic perspective, achieving fiscal consolidation and balancing spending from subsidies toward poverty reduction remain major challenges for the country. Monetary policy has remained very tight, reducing liquidity, putting pressure on the financial sector, and causing a drag on growth. To mitigate macroeconomic risks, the World Bank and International Monetary Fund have engaged with the Government of Zambia to develop plans on managing fiscal policies that affect the economy. The World Bank has developed a series of activities to help the Government address some of these risks, including Advisory Services and Analytics to support the Government in improving economic and fiscal management.





17. **One of the risks envisaged is associated with governance, that is, the risk that a portion of the project benefits destined for the poorest beneficiaries would be captured by Government agencies, nongovernmental organizations (NGOs), or influential people within the communities.** The AF is going to continue using the decentralized funding mechanism adopted in the parent project. This has helped ensure that beneficiary districts and communities receive direct funding as their climate-resilient funds are endorsed. Mechanisms utilized in the parent project that have worked, such as including district- and community-level committees in decision making on fund allocation and disbursement, would be used and strengthened based on lessons learned. In addition, information disclosure and use of social accountability media (for example, Frontline short message service [SMS])—initiated during Phase I and Phase II—will be used as mechanisms to strengthen social accountability and transparency at the district level.

## V. APPRAISAL SUMMARY

### A. Economic and Financial Analysis

18. **The AF project will scale up (adding new communities within the Barotse sub-basin) and add the three new activities to the original project.** As such, the anticipated benefits of the AF project will include (a) the benefits of the new activities to be implemented both at the original and new sites as well as at the national level (the TA support) and (b) the benefits of improved delivery of the original activities implemented at the existing site. Within this framework, this analysis provides accounts, mostly qualitative, of anticipated benefits of the AF project. The Bank has been instrumental in institutionalizing the climate change program coordination unit in Zambia and is well positioned to serve as intermediary to continue strengthening the institutional framework. In addition, the Bank is resourced with field and HQ based staff with protracted years of cumulative technical and operational experience, working in the target country on climate change, green growth, rural development, commercialization and agribusiness, among others.

19. **The three activities proposed in the AF project are summarized as follows for the economic analysis:**

- Activity 1 (US\$2.88 million) attempts to link the effort to be pursued by rural communities/HHs under Activity 2 to the broader value chain by actively engaging the participation of upstream and downstream private sector actors in the project design and delivery. This activity is considered mostly as TA to be implemented at the local level to enhance the effectiveness, impacts, and sustainability of Activity 2.
- Activity 2 (US\$1.30 million) will also enhance the quality of Activity 3 by generating and disseminating critical information necessary for effective decision making by the communities and HHs to the extent that the information generation and dissemination will take place at the national scale. This is, in addition, targeted at activities encouraging behavioral change (for example, social marketing), which are taking place at the national and local levels.



- Activity 3 (US\$7.64 million) represents a modified approach from the original Subcomponent 3.1 (that is, it will be enterprise business approach) such that the support to communities and HHs toward climate-resilient livelihoods will now be provided to a set of competitively selected sub-projects that have strong business case foundations.

20. **Following the approach adopted in the economic analysis in the parent Project Appraisal Document (PAD), this analysis focuses on describing the anticipated benefits of Activity 3.** As in the parent project PAD, the exact nature of sub-projects to be undertaken under Activity 3 at the district, ward, group, and individual levels is unknown, and the analysis depends on the estimates made under the parent project, where ‘benefits for the adaptation grants are therefore measured with reference to realistic end of project targets for improvement in HH cash income and food security as proxies for increased climate resilience’.

21. **The analysis under the parent project estimated the internal rate of return (IRR) for the corresponding activity (Subcomponent 3.1) to be 13.8 percent.** The estimation was based on the costs of project planning, NGO supervision and support, district and provincial incremental costs, and project grants, while benefits considered included increased cash income and improved food security. The parent project assumed a total of 1,227 sub-grants of various sizes; the current AF project is expected to support 400–500 sub-grants.

22. **This analysis argues that a higher IRR is anticipated for Activity 3 in the AF project than in the original project.**

- All else equal, greater performance of sub-projects is expected for the following reasons:
  - Based on lessons learned of the original project, a more competitive and systematic selection process will favor well-designed and promising sub-projects.
  - Due to Activity 1, sub-projects will be better integrated with value chains, and as a result, the business potentials of the sub-projects likely will be enhanced through interactions and engagement with business partners, and the businesses likely will have greater chances of being sustainable after the end of project support.
  - Due to Activity 2, beneficiaries will have access to better information for improved business decision making.
  - The well-designed TA component (Activity 1 and Activity 2 on behavioral change) will contribute to the quality of the processes of designing, selecting, and implementing sub-projects.



- In addition, improved performance of existing sub-projects at original sites is expected due to improved information delivery (Activity 2) and a series of TA activities (Activity 1 and Activity 2 on behavioral change).

23. **Overall, the AF project is expected to generate sufficient benefits over the cost of the project by directly and indirectly improving the delivery of grants as planned under the parent project.** In addition, several delivery mechanisms to be experimented in the AF project will inform the design and implementation of anticipated future projects.

## **B. Technical Aspects**

24. **The activities proposed under the AF will further support the strategic institutionalization of climate change adaptation measures in the current project target area.** The parent project has been working with local structures and implementation partners to improve and mainstream climate risk into livelihood option decisions, local development planning, and implementation capacity and has gained experience in conducting microprojects in the intervention area. Lessons from this experience have flowed into the design of the AF. This process will continue to enhance the capacities for climate risk planning at subnational levels through knowledge exchange among relevant districts to integrate adaptation processes in sub-project and development planning. In particular, it will be leveraged and integrated into the importance of addressing value chain constraints in remote areas to achieve a wider scope of result.

25. **The proposed AF activities, with integration of a public-private sector approach at its core, have been selected to focus on completing the objective of driving and achieving the goal of resilience holistically, that is, not sole dependence on grants.** These activities build on existing in-country ongoing and future planned initiatives and/or international experience and will involve strong partners with links to private sector, as described earlier in this PP.

26. **In relation to the ‘enterprise grants’, the current grant system under the parent project will be broadened to include the enterprise grants.** However, this will be on a competitive basis and from a business perspective. In addition, the current grant criteria under the Project Implementation Manual Volume II, that is, Implementation of Participatory Adaptation Sub-Grants, will be revised to include enterprise grants.

### ***Implementation Arrangements***

27. **No major changes are envisioned under the AF.** The same current structure that governs the implementation of the parent project will remain. The Ministry of National Development Planning (MoNDP) tasked with overall coordination, facilitation and oversight of all climate change investment will continue with this role through the Climate Change Coordinating Unit, the permanent structure to the Interim Climate Change Secretariat. Implementation and the supervision of the project will remain with the National Project Coordination Unit (NPCU) of the Zambia PPCR Project, the relevant line ministry, and the provincial administration through the



PIU. In addition to the Disaster Management and Mitigation Unit currently implementing the climate information sub-component, the Zambia Meteorological Agency will also be included for implementing some activities under this sub-component i.e climate information because of the overlapping roles the two agencies play on climate information generation and dissemination. Participating communities and producer groups will continue to have the leadership for all the initiatives, with backstopping by the Provincial Planning Units. The MoNDP will ensure coherence between the AF activities and other similar World Bank-supported activities as well as other donor, bilateral, or Government investments. The AF will not require additional staff; in line with the decentralization implementation arrangement used in the parent project, that is, the provincial planning unit playing the role of the PIU supported with technical backstopping by the CRAFT and the NPCU. However, provision is made for a short-term technical specialist as may be required. Not later than 90 days after the effective date the Recipient will update the Participatory Adaptation Implementation Manual to include implementation arrangements for additional activities under part 3 of the project.

**C. Financial Management:**

28. **The financial management (FM) arrangements remain unchanged.** The PIU will continue to perform and oversee all actions related to FM. There are no changes to the FM arrangements; hence, the AF will continue using the existing FM arrangements including staff, financial regulations, and procedures.

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

30. **Funds flow.** Funds will flow from the World Bank to the pooled Designated Account for the project at Bank of Zambia and maintained in U.S. dollars, to finance only eligible expenditures of the project. An operational account in Zambian kwacha will also be opened at Bank of Zambia.

31. **Disbursement arrangements.** The project will use the report-based method of disbursements (forecast for two quarters expenses as provided in the quarterly interim financial statement) both for the original project and the AF.

**32. Expected Disbursements (in US\$, millions)<sup>6</sup>**

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Annual</b>	0.00	0.30	4.05	8.15	7.05	6.75	9.00	6.70	3.00	3.00	2.60
<b>Cumulative</b>	0.00	0.30	4.35	12.50	19.95	26.30	35.30	42.00	45.00	48.00	50.60

<sup>6</sup> This table represents complete information about projected disbursements throughout project cycle. Please note that due to technical limitations, the table on expected disbursements generated in the datasheet (p. 29) does not include disbursements for year 2023.



Other methods of disbursing to the project will include reimbursements, direct payment, and use of special commitments (for example, letters of credit). Disbursement categories which will be combined under one to avoid the need for future restructuring for disbursement category overruns. Further disbursement details are provided in the disbursement letter.

#### **D. Procurement**

33. **The arrangements for procurement for the AF fall under the new World Bank Procurement Framework (PF) approved in July 2016.** The PF provides regulations for borrowers applicable to Investment Project Financing dated July 2016 as amended in November 2017. These new procurement regulations require the client to prepare a Project Procurement Strategy for Development (PPSD). The World Bank supported the PIU in preparing the PPSD and ensured that the PIU procurement staff receive any relevant training on the new rules under the PF.

#### **E. Social and Environment (including Safeguards)**

34. **Social and environmental safeguards.** The parent PPCR project is classified as a Category B and is also applicable to the AF. The policies triggered under the parent project and that are also applicable to the AF are listed in table 2. The only change is that the Forests OP/BP 4.36 will now be triggered to cater for potential for investments in woodlots or other forest-related activities. Maintaining generally the same triggered safeguard policy indicates that the potential negative impacts of the program are site-specific, are not irreversible, and can easily be corrected by appropriate mitigation measures. The proposed AF is not expected to result in foreseeable significant adverse environmental and social impacts; any possible effects are expected to remain temporary, localized, and reversible on the parent project. All of this has been achieved as a result of strong country ownership, the commitment of the implementing agency, and qualified technical staff ensuring effective implementation of the safeguard instruments. The same safeguard instruments will be maintained for the AF. If deemed necessary, before the start of any investment, a Simplified Environmental Impact Assessment will be carried out in accordance with the project Environmental and Social Management Framework (ESMF).

35. **Safeguard performance has been rated Satisfactory.** Project implementation has been compliant with the approved Environmental and Social Management Plan (ESMP). The project has designated Safeguard Specialists, supported by Participatory Adaption Experts engaged at the district level to manage risks. The presence of these experts has strengthened monitoring of safeguard compliance of sub-project activities. No physical or economic displacement has been recorded to date, and impacts on the environment have not been significant. The current ESMP promotes employment opportunities for local communities in project areas, a requirement that has been enforced by the project as a mitigation against labor influx. It is envisaged that any newly proposed activities will be aligned with the requirements of the parent project and will not deviate from the original project design. The current safeguard instruments, therefore, remain valid and adequate to mitigate potential risks from project implementation.



36. **Communication and citizen engagement.** The project will include a two-pronged approach to promote beneficiaries’ participation through intertwining strategic communication with citizen engagement mechanisms. This approach will help promote transparency, enhance citizens’ voice, and participation. Intertwining citizen engagement mechanisms with communication activities will facilitate beneficiaries’ buy-in and, thereby, generate broad stakeholder ownership of project activities. The project will integrate three citizen engagement mechanisms: direct consultations with beneficiaries, multi-level arrangements for registering and addressing grievances and complaints, and a community monitoring process that will be embedded at the local level. Under each project intervention, the consultations will be organized to reach relevant stakeholder groups, such as the private sector actors, in addition to targeted communities.

37. **The project grievance redress mechanism will provide clear and accountable means for affected persons to raise complaints and seek remedies when they believe they have been harmed by project activities.** The parent project has been employing a grievance redress mechanism, which is an integral part of the traditional redress mechanism. This has proven successful because of the level of ownership and involvement of the traditional system in Barotse sub-basin in the project implementation. The parent project is currently formalizing this system into a formal structure.

**Table 2. Safeguard Policies Triggered for the AF**

List of Safeguard Policies	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36 <sup>7</sup>	X	
Pest Management OP 4.09	X	
Physical Cultural Resources OP/BP 4.11	X	
Indigenous Peoples OP/BP 4.10		X
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50	X	
Projects in Disputed Areas OP/BP 7.60		X

**F. Results Framework**

38. **There is a strong convergence between the current components of the PPCR and the activities in the proposed AF.** The AF will further strengthen reporting on the Results Framework for the parent project. The current parent project has indicators that link with the five PPCR core

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<sup>7</sup> OP/BP 4.36 was not triggered for the parent project.



indicators.<sup>8</sup> The PPCR AF Results Framework includes minor adjustments to capture the additional level of outputs and outcomes generated by the additional resources and new activities. Key additions include (a) increasing the target beneficiaries by 7,500 HHs (37,500 individuals) and the subsequent changes to targets in the gender indicators and (b) adding new indicators to capture the additional enterprise grants and an indicator on citizen engagement.

Table 3. Additional Indicators in the AF results framework

	Unit	Baseline	End of Project Target	Frequency	Data Source	Responsible Entity	Description
Number of enterprise grants submitted for evaluation	#	0	600	Annual	Evaluation Committee	Evaluation Committee/PIU	Number of enterprise applications that were submitted and reviewed by the Evaluation Committee
Number of enterprise grants implemented	#	0	300	Annual	Evaluation Committee	Evaluation Committee/PIU	Number actually implemented
Citizens reporting satisfaction with key aspects of collaboration process	%	0	70	Annual		PIU/CRAFT	Satisfaction of citizens with the training and development process of producer’s sub-grant applications

### G. Gender

39. **The AF will continue to build on the parent project’s focus on gender and vulnerable people.** The parent project was designed to ‘specifically target women-headed households (who by nature are highly vulnerable), as well as male-headed households considered to be very or extremely vulnerable. This will also include youth, as well as other disadvantaged groups including the elderly, orphan-headed HHs, and those affected by HIV/AIDS or other illnesses and challenges. The parent project benefits from participatory adaptation grants measured with

<sup>8</sup> The following are the five indicators linked to the PPCR core indicators:

1. Changes in budget allocations to climate-smart programs in national budget equivalent to Indicator A.2.2 in the January 14, 2013 *PPCR Results Framework*”
2. Local Adaptive Capacity, that is, percentage of targeted wards and council assessed as having developed adaptive capacity. Composite indicator equivalent to PPCR Core Indicator B.1
3. Target Beneficiaries, that is, Number of direct of beneficiaries (cumulative). Equivalent to PPCR Core Indicator A.1.3
4. Evidence of strengthened Government capacity and coordination mechanism to mainstream climate resilience. Equivalent to PPCR Core Indicator B.2
5. Climate-responsive financial instruments developed and tested. Equivalent to PPCR Core Indicator B.5





respect to incremental cash income and improved food security for direct beneficiary HHs disaggregated by gender. To ensure sustainability of this process, specific approaches for wider coverage of these actions involve collaboration and input from specialist teams and individuals in the project structure, including consultations with communities, key partners, and other entities with successful experiences in this area. The overall aim is to improve the socioeconomic status and well-being of all HHs in the targeted areas of the project.

**40. During implementation, the project monitoring and evaluation (M&E) system will disaggregate participation by gender and other social groupings with critical information to assess the impacts on lives and livelihoods.**

## **VI. WORLD BANK GRIEVANCE REDRESS**

41. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB'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 WB'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 Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit <http://www.inspectionpanel.org>.





**I. SUMMARY TABLE OF CHANGES**

	Changed	Not Changed
Change in Implementing Agency	✓	
Change in Results Framework	✓	
Change in Components and Cost	✓	
Change in Loan Closing Date(s)	✓	
Reallocation between Disbursement Categories	✓	
Change in Disbursements Arrangements	✓	
Change in Safeguard Policies Triggered	✓	
Change in Legal Covenants	✓	
Change in Project's Development Objectives		✓
Cancellations Proposed		✓
Change of EA category		✓
Change in Institutional Arrangements		✓
Change in Financial Management		✓
Change in Procurement		✓
Other Change(s)		✓

**II. DETAILED CHANGE(S)**

**IMPLEMENTING AGENCY**

Implementing Agency Name	Type	Action
Ministry of Finance		No Change
Ministry of National Development Planning	Line Ministry/Ministerial Department	No Change
Zambia Metrological Agency	Line Ministry/Ministerial Department	New



**RESULTS FRAMEWORK**

**Project Development Objective Indicators**

Number of beneficiaries supported directly by the project to adapt to the effects of climate change Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00		0.00	No Change
Date	30-Oct-2013		31-Oct-2019	
Number of direct beneficiaries (cumulative): total households Unit of Measure: Number Indicator Type: Custom Breakdown				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	30,716.00	33,300.00	Revised
Date	30-Oct-2013	08-Dec-2017	31-Oct-2022	
Number of direct beneficiaries (cumulative): women-headed household Unit of Measure: Number Indicator Type: Custom Breakdown				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	13,615.00	12,250.00	Revised
Date	30-Oct-2013	08-Dec-2017	31-Oct-2022	
Number of direct beneficiaries (cumulative): other vulnerable households Unit of Measure: Number Indicator Type: Custom Breakdown				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	36,945.00	14,800.00	No Change
Date	30-Oct-2013	08-Dec-2017	31-Oct-2019	
Number of direct beneficiaries (cumulative): total number of people Unit of Measure: Number Indicator Type: Custom Breakdown				



	Baseline	Actual (Current)	End Target	Action
Value	0.00	152,902.00	165,500.00	Revised
Date	30-Oct-2013	08-Dec-2017	31-Oct-2022	
Number of enterprise grants submitted for evaluation Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	0.00	600.00	New
Date	15-Jun-2018		31-Oct-2022	
Number of enterprise grants implemented Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00		300.00	New
Date	15-Jun-2018		31-Oct-2022	
Citizens reporting satisfaction with key aspects of collaboration process Unit of Measure: Percentage Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00		70.00	New
Date	15-Jun-2018		31-Oct-2022	

**Intermediate Indicators****COMPONENTS**

Current Component Name	Current Cost (US\$, millions)	Action	Proposed Component Name	Proposed Cost (US\$, millions)
Strategic National Programme Support	9.60	Revised	Strategic National Programme Support	12.34
Support to Participatory Adaptation	5.60	Revised	Support to Participatory Adaptation	8.48
Pilot Participatory Adaptation	20.80	Revised	Pilot Participatory Adaptation	29.78



<b>TOTAL</b>	<b>36.00</b>			<b>50.60</b>
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**LOAN CLOSING DATE(S)**

Ln/Cr/Tf	Status	Original Closing	Current Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
TF-14573	Effective	31-Dec-2019	31-Dec-2019	31-Dec-2022	30-Apr-2023
TF-14588	Effective	31-Dec-2019	31-Dec-2019	31-Dec-2022	30-Apr-2023

**REALLOCATION BETWEEN DISBURSEMENT CATEGORIES**

Current Allocation	Actuals + Committed	Proposed Allocation	Financing % (Type Total)	
			Current	Proposed

TF-14573-001 | Currency: USD

iLap Category Sequence No: 1	Current Expenditure Category: GDS WRK NON-CON CON P3c			
5,000,000.00	3,606,396.23	4,800,000.00	100.00	100.00
iLap Category Sequence No: 1	Current Expenditure Category: GDs WRK NON CON under Part 3.A and 3.B			
0.00	0.00	200,000.00		100.00
<b>Total</b>	<b>5,000,000.00</b>	<b>3,606,396.23</b>	<b>5,000,000.00</b>	

TF-14588-001 | Currency: USD

iLap Category Sequence No: 1	Current Expenditure Category: GDS WKS NON-CS, VHC, CS except P3C			
10,840,000.00	8,838,698.11	9,839,000.00	100.00	100.00
iLap Category Sequence No: 2	Current Expenditure Category: SUB-PROJECT GRANT Part 3.a			
14,400,000.00	3,602,017.52	5,088,000.00	100.00	100.00
iLap Category Sequence No: 3	Current Expenditure Category: ADAPT CONTIN. FUND S-PRJ GRNT P3.b			
1,800,000.00	0.00	400,000.00	100.00	100.00



iLap Category Sequence No: 4		Current Expenditure Category: TRAINING AND OPERATING COST			
3,960,000.00	2,352,799.78	3,271,000.00	100.00	100.00	
iLap Category Sequence No: 5		Current Expenditure Category: GDs WRK NON CON under Part 3.A and 3.B			
0.00	0.00	12,402,000.00		100.00	
<b>Total</b>	<b>31,000,000.00</b>	<b>14,793,515.41</b>	<b>31,000,000.00</b>		

**DISBURSEMENT ARRANGEMENTS**

Change in Disbursement Arrangements  
Yes

**Expected Disbursements (in US\$, millions)**

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Annual</b>	0.00	0.30	4.05	8.15	7.05	6.75	9.00	6.70	3.00	3.00
<b>Cumulative</b>	0.00	0.30	4.35	12.50	19.55	26.30	35.30	42.00	45.00	48.00

**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	● Substantial	● Substantial
Macroeconomic	● Substantial	● Substantial
Sector Strategies and Policies	● Moderate	● Moderate
Technical Design of Project or Program	● Moderate	● Moderate
Institutional Capacity for Implementation and Sustainability	● Moderate	● Moderate
Fiduciary	● Moderate	● Moderate
Environment and Social	● Moderate	● Moderate
Stakeholders	● Moderate	● Moderate
Other		
<b>Overall</b>	● Moderate	● Moderate



**COMPLIANCE**

**Change in Safeguard Policies Triggered**

Yes

Safeguard Policies Triggered	Current	Proposed
Environmental Assessment OP/BP 4.01	Yes	Yes
Performance Standards for Private Sector Activities OP/BP 4.03	No	No
Natural Habitats OP/BP 4.04	Yes	Yes
Forests OP/BP 4.36	No	Yes
Pest Management OP 4.09	Yes	Yes
Physical Cultural Resources OP/BP 4.11	Yes	Yes
Indigenous Peoples OP/BP 4.10	No	No
Involuntary Resettlement OP/BP 4.12	Yes	Yes
Safety of Dams OP/BP 4.37	No	No
Projects on International Waterways OP/BP 7.50	Yes	Yes
Projects in Disputed Areas OP/BP 7.60	No	No

**LEGAL COVENANTS – Zambia Strengthening Climate Resilience (PPCR Phase II) (P127254)**

Loan/Credit/TF	Description	Status	Action
TF-14588	Finance Agreement :Effectiveness Conditions (Article IV, para. 4.01)   Description :The Grant and Loan Agreements have been signed and delivered. The Recipient/Borrower has prepared and adopted a Project OperationalManual and a Participatory	Complied with	Revised



	Adaptation Implementation Manual in accordance with the provisions of Section 1.B of Schedule 2 to the Grant and Loan Agreement.   Due Date :30-Sep-2013		
Proposed	Loan Agreement and Grant Agreement - Schedule 2, Section 1, Part B, Item 1: The Borrower/Recipient shall by not later than 90 days after the Effective Date, update the Participatory Adaptation Implementation Manual to include implementation arrangements under Part 3 of the Project.	Not yet due	
TF-14588	Finance Agreement :Institutional Arrangement ( Section I.A of Schedule 2, paras. 2, 4, 8, and 10)   Description :The Recipient shall maintain throughout project implementation the National Climate Change Secretariat, Disaster Management and Mitigation Unit, Provincial Planning Sub-Committee and District Planning Advisory Sub-Committee, with an institutional framework and terms of reference satisfactory to the WB and facilities and resources adequate to carry out its responsibilities under the Project.   Frequency :CONTINUOUS	Complied with	No Change
TF-14588	Finance Agreement :Institutional Arrangement ( Section I.A.6 of Schedule 2)   Description :The Recipient shall establish and thereafter maintain a Provincial Project Implementation Unit within the provincial administration in Western Province, reporting to the Chief Planner and Coordinator, National CC Secretariat, with staff qualifications, experience and terms of reference satisfactory to the World Bank, and with adequate resources to carry out its responsibilities under the Project.   Due Date :30-Jan-2014	Complied with	No Change
TF-14588	Finance Agreement :Institutional Arrangements (Section I.B.1 and 2 of Schedule 2)   Description :The Recipient	Complied with	No Change



	shall prepare, under TORs satisfactory to the WB, and thereafter adopt and carry out the Project in accordance with aProject Operational Manual and a Participatory Adaptation Implementation Manual. Except as the WB shall otherwise agree in writing,the Recipient shall not amend or waive, or permit to be amended or waived, any provision of the Manuals.   Frequency :CONTINUOUS		
TF-14588	Finance Agreement :Annual Work Plans and Budget (Section I.B.4 and 5 of Schedule 2)   Description :The Recipient shall prepare and furnish to the WB an annual program of activities and proposed budget for the following fiscal year. Thereafter, the Recipient shall adopt, and carry out such program of activities as shall have been agreed with the World Bank, as such plan may be subsequently revised with the prior written agreement of the World Bank.   Frequency :Yearly	Complied with	No Change
TF-14588	Finance Agreement :Sub-Projects (Section I.C.1 and 2 of Schedule 2)   Description :Sub-Project Grants shall follow eligibility criteria and procedures acceptable to the WB as stated in the Manual, funding priority adaptation identified through climate-resilient planning. Beneficiaries shall contribute in cash or in-kind, meet minimum registration and fiduciary requirements and open and maintain a bank account, where appropriate. Sub-project agreements shall be acceptable to WB.   Frequency :CONTINUOUS	Complied with	No Change
TF-14588	Finance Agreement :Anti-Corruption (Section I.D. of Schedule 2)   Description :The Recipient shall ensure that the Project is carried out in accordance with the provisions of the Anti-Corruption Guidelines.   Frequency :CONTINUOUS	Complied with	No Change
TF-14588	Finance Agreement :Environmental and	Complied with	No Change





	Social Safeguards (Section I.E.1-3 of Schedule 2)   Description :The Recipient shall ensure that the Project, any Technical Assistance whose results would have environmental or social implications, and Sub-Projects be carried out in accordance with the provisions of the ESMF, RPF, and PMP, and any RAPs and/or EMPs, as the casemay be.   Frequency :CONTINUOUS		
TF-14588	Finance Agreement :Environmental and Social Safeguards (Section I.E.4 of Schedule 2)   Description :The Recipient shall ensure that project reports shall include adequate information on the implementation and monitoring of the measures undertaken to implement the provisions of the ESMF, the RPF, the PMP, and any RAPs and/or EMPs.   Frequency :Quarterly	Complied with	No Change
TF-14588	Finance Agreement :Project Monitoring, Reporting and Evaluation (Section II.A of Schedule 2)   Description :The Recipient shall monitor and evaluate the progress of the Project and prepare Project Reports, on the basis of indicators acceptable to the WB, covering the period of one quarter, submitted to the Bank within forty-five (45) days after the end of such period.   Frequency :Quarterly	Complied with	No Change
TF-14588	Finance Agreement :Financial Monitoring, Financial Reports, Audits (Section II B.2 of Schedule 2)   Description :The Recipient shall ensure that interim un-audited financial reports for the Project covering the quarter, in form and substance satisfactory to the World Bank, are prepared and submitted no later than 45 days after each calendar quarter.   Frequency :Quarterly	Complied with	No Change
TF-14588	Finance Agreement :Audits (Section II B.3 of Schedule 2)   Description :The Recipient shall have its Financial Statements audited in accordance with	Complied with	No Change



	the provisions of Section 2.07(b) of the Standard Conditions. Each audited Financial Statement shall cover the period of one (1) fiscal year of the Project Implementing Entity. Audited financial statements for each period shall be furnished to the World Bank not later than 6 months after end of such period.   Frequency :Yearly		
TF-14573	Finance Agreement :Withdrawal Conditions (Section IV.B.1(b) of Schedule IV of the Loan Agreement)   Description :No withdrawal shall be made on the Loan for payments made prior to the date of this Agreement and until and unless the Borrower has adopted operational arrangements acceptable to the World Bank for the sustainable operation and maintenance of traditional canals and has provided resources for the maintenance of canals acceptable to the World Bank in the approved annual budget.   Due Date :31-Dec-2013	After delay complied with	No Change
TF-14588	Finance Agreement :Withdrawal Conditions (Section IV.B.1(b) of Schedule IV of the Grant Agreement)   Description :No withdrawal shall be made on the Grant for payments made prior to the date of this Agreement and for payments under Category 3 unless the Recipient has adopted operational procedures for the implementation of the Adaptation Contingency Fund satisfactory to the World Bank.   Due Date :31-Dec-2014	After delay complied with	No Change

**LEGAL COVENANTS – Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) (P165442)**

**Sections and Description**

Loan Agreement and Grant Agreement - Schedule 2, Section 1, Part B, Item 1:  
The Borrower/Recipient shall by not later than 90 days after the Effective Date, update the Participatory Adaptation Implementation Manual to include implementation arrangements under Part 3 of the Project.



<b>Conditions</b>	
Type	Description
Effectiveness	Grant Agreement, Article IV, 4.01. (b): The Amended and Restated SCF-PPCR Loan Agreement has been signed and delivered, and all conditions of effectiveness of said agreement or the right of the Borrower to withdraw funds thereunder have been satisfied, except for the condition that this Agreement has become effective.
Effectiveness	Grant Agreement, Article IV, 4.01. (a): The execution and delivery of this Agreement on behalf of the Recipient has been duly authorized or ratified by all necessary government action.
Effectiveness	Loan Agreement, Article IV, 4.01.: The Amended and Restated SCF-PPCR Grant Agreement has been signed and delivered, and all conditions of effectiveness of said agreement or the right of the Recipient to withdraw funds thereunder have been satisfied, except for the condition that this Agreement has become effective.



**VII. RESULTS FRAMEWORK AND MONITORING**

**Results Framework**  
**COUNTRY : Zambia**  
**Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II)**

**Project Development Objectives**

The development objective of the project is to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin. The project involves three components:

1. Strategic National Program Support, aiming to strengthen the national institutional and financial framework for climate resilience, by (a) providing institutional support to the national climate change program; and (b) strengthening climate information.
2. Support to Participatory Adaptation, through strengthening of the adaptive capacity of vulnerable rural communities in the Barotse sub-basin.
3. Pilot Participatory Adaptation, through the funding of actual participatory adaptation investments in the Barotse sub-basin, including (a) community adaptation sub-grants; (b) establishment and operation of an adaptation contingency fund; and (c) rehabilitation and strengthened management of traditional canals.

**Project Development Objective Indicators**

Action	Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source / Methodology	Responsibility for Data Collection
No Change	Name: Changes in the budget allocations to climate smart programs in		Number	0.00	3,162,000.00	ZCCN and MOF	Yellow Book (budget allocations) by Ministry and	Annual



	national budgets					program	
No Change	Increase in national budget allocations to climate resilient programmes for climate vulnerable sectors: amount approved	Number	2,529,600.00	3,162,000.00	Annual	Yellow Book (budget allocations) by Ministry and programs	Project PIU
No Change	Increase in national budget allocations to climate resilient programmes for climate vulnerable sectors: amount disbursed (ZMW/yr)	Number	1,900,400.00	2,375,500.00	Annual	Yellow Book (budget allocations) by Ministry and programs	Project PIU
Description: Budget tracking allocations to programs classified as "climate smart" under the key vulnerable sectors. Measure would also be in real allocation terms (deflated CPI 2007=100)							
No Change	Name: Vulnerable districts, wards and communities use improved tools, information and instruments to respond to climate change and variability	Percentage	0.00	70.00	EOP	Survey of Beneficiaries	Project PIU
No Change	Percentage of	Percentage	0.00	70.00	EOP	Survey of	Project PIU



	targeted councils assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)								Beneficiaries	
No Change	Percentage of targeted wards assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)	Percentage	0.00	70.00	EOP	Survey of Beneficiaries	Project PIU			
No Change	Percentage of targeted community groups assessed as having developed incremental decision-making capacity and	Percentage	0.00	70.00	EOP	Survey of Beneficiaries	Project PIU			



Description: Composite indicator measuring (a) capacity gained; (b) application of information to decision making; (c) results vis-à-vis original targets						
applied climate information to adapt to longer-term climate change and variability (%)						
<b>No Change</b>	<b>Name:</b> Canals with optimal average flows	<b>Text</b>	No engineering design and specification of canals in place before rehabilitation	Designed slope and cross sections maintained to the engineering standard. And functional use of canal by WUA and community	Assessment Study and M&E Team	Annual
<b>No Change</b>	Average flow velocity of targeted canal (m/s)	<b>Text</b>	Engineering design and specification of canals in place before rehabilitation	Designed slope and cross sections maintained to the engineering standard. And functional use of canal by WUA and community	Beginning of project Mid term and EOP	Project PIU



No Change	Average flow velocity of targeted canal (m/s)	Number	0.60	0.48	Beginning of project, Mid term and EOP	Technical Survey	Project PIU
<b>Description: Optimal flow from technical literature; actual flow from measurements during fixed months</b>							
No Change	Name: Number of beneficiaries supported directly by the project to adapt to the effects of climate change	Number	0.00	0.00			
Revised	Number of direct beneficiaries (cumulative): total households	Number	0.00	33,300.00	Bi- annual	Sub-grants administered	PIU
Revised	Number of direct beneficiaries (cumulative): women-headed household	Number	0.00	12,250.00	Bi-annual	Sub-grants administered	Project PIU
No Change	Number of direct beneficiaries (cumulative): other vulnerable households	Number	0.00	14,800.00	Annual	Sub-grants administered	Project PIU
Revised	Number of direct beneficiaries (cumulative): total	Number	0.00	165,500.00	Bi-annual	Sub-grants administered	Project PIU





	number of people						
Description:							
New	Name: Number of enterprise grants submitted for evaluation	Number	0.00	600.00	Bi-Annual	Enterprise grants reviewed by the evaluation Committee	Project PIU
Description: Number of business enterprise proposal submitted grant's access and evaluated as viable for funding							
New	Name: Number of enterprise grants implemented	Number	0.00	300.00	Bi-annual	Enterprise grants reviewed by the evaluation Committee	Project Office
Description: Number of enterprise grants that were approved, funded and implemented							
New	Name: Citizens reporting satisfaction with key aspects of collaboration process	Percentage	0.00	70.00	End of project	Project participatory monitoring and reporting.	Project PIU
Description: Evaluation based on citizen interviewed on collaboration process leading to project implementation e.g grant identification and administering process							



**Intermediate Results Indicators**

Action	Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source / Methodology	Responsibility for Data Collection
No Change	Name: Strengthened Government capacity to mainstream climate resilience		Text	Interim National Climate Change Secretariat (INCCS) established	Council fully operational effectively coordinating climate change funding, programs and projects			
No Change	National Climate Change and Development Council (or equivalent) established and fully operational, effectively coordinating climate change funding, programs and projects		Text	Interim National Climate Change Secretariat (INCCS) established	Council fully operational effectively coordinating climate change funding, programs and projects	MTR ,EOP	Evaluation reports	Evaluation studies , project PIU
<p><b>Description:</b> The evidence of strengthened capacity and coordinating mechanism is measured through the functionality of the structure the government is able to put in place,their ability and the extent of mainstreaming of climate risk into sectoral and local development plans</p>								
No Change	Name: Strengthened institutional and financial mechanisms		Yes/No	No	Yes			



	to ensure climate resilience												
No Change	Canal operation and maintenance (O&M) agreement adopted by provincial authority	Yes/No	No	Yes	MTR and EOP	Monitoring report	Project PIU						
Description:													
No Change	Name: Climate resilient programs and policies in key vulnerable sectors screened for their impact	Number	0.00	4.00									
No Change	Number of sectoral screening guidelines for climate resilience programs and policies developed for key sectors	Number	0.00	4.00		Monitoring g and annual reports	MTR and EoP						
Description:													
No Change	Name: Climate responsive financial instruments developed and tested	Number	0.00	2.00									
No Change	Number of climate risk financing instruments developed	Number	0.00	2.00	MTR and EOP	Annual monitoring reports	Project PIU						



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Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) (P165442)

No Change	Number of climate risk financing instruments tested	Number	0.00	1.00	MTR and EOP	Monitoring reports	Project PIU
Description:							
No Change	Name: Number of relevant climate information products/services made available for decision-making at various levels	Text	No information available	Information Available			
No Change	Professional social marketing awareness campaign designed and implemented	Text	No	Yes	Annual	Annual reports	Project PIU
No Change	Two-way early warning system (EWS) established and operational in targeted districts	Text	SMS system piloted for hydro info, with limited coverage	70 % coverage in targeted districts	MYT and EOP	Monitoring reports	Project PIU
No Change	Two-way early warning system (EWS) established and operational in targeted districts	Text	No	Yes	MTR and EOP	Annual Reporting	Project PIU
Description:							



No Change	Name: Climate resilience mainstreaming in local area planning	Number	24.00	24.00	24.00	
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards : district-level (IDPs)	Number	6.00	0.00	6.00	Monitoring report
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards: ward-level (ADPs) <sup>18</sup>	Number	18.00	0.00	18.00	Monitoring report
No Change	Climate risk assessment completed for Barotse sub-basin, and incorporated into provincial-level planning	Number	1.00	0.00	1.00	Monitoring report
Description: Verification on whether IDPs and ADPs include quantitative and geographical identification of vulnerable population and assets, and exposure to climate hazards						
No Change	Name: Strengthened institutional and financial mechanisms	Text	No	Yes	Annual	Monitoring report Project PIU



No Change	to ensure climate resilience	Text	No	Yes	Annual	Monitoring reports	Project PIU
No Change	Provincial level agreement for optimal canal operation and maintenance (O&M) adopted and with BRE support	Text	No	Yes	Annual	monitoring report	Project PIU
No Change	Local adaptation contingency fund established	Text	No	Yes	Annual	monitoring report	Project PIU
Description:							
No Change	Name: Number of sub-grants approved and completed	Number	0.00	1,324.00			
No Change	Number of sub-grants approved: district-level	Number	0.00	24.00	Annual	Monitoring report	Project PIU
No Change	Number of sub-grants approved: ward-level	Number	0.00	72.00	annual	Monitoring report	Project PIU
No Change	Number of sub-grants approved: community-level	Number	0.00	1,150.00	Annual	Monitoring report	
No Change	Number of sub-grants approved : individual champion	Number	0.00	78.00	Annual	Monitoring report	Project PIU



No Change	Number of sub-grants approved: individual champion female	Number	0.00	23.00	Annual	Monitoring report	Project PIU
Description:							
No Change	Name: Areas with access to reliable canal water	Number	0.00	400.00			
No Change	Incremental area under climate resilient crops in the vicinity of seven (7) targeted priority canals and secondary/ ancilliary canals (ha)	Number	0.00	400.00	Annual	Monitoring reports	Project PIU
No Change	Targeted priority and secondary/ancilliary canals rehabilitated and maintained	Number	0.00	220.00	Annual	Monitoring reports	Project PIU
Description: Area measured in hectrage of land							
No Change	Name: Incremental labor generated through cash-for-works	Number	0.00	3,250.00			
No Change	Person-days of labor generated	Number	0.00	3,250.00	Annual	Sample survey	Project PIU
No Change	Person-days of labor generated : women	Number	0.00	1,625.00	Annual	Sample survey	Project PIU



Description:									
No Change	Name: Households considered very vulnerable in target districts	Percentage	0.00	50.00	EOP	Sample survey	Project PIU		
Description:									
No Change	Name: Household considered with diversification into alternative sources of livelihood income away from climate-sensitive activities/income sources	Number	0.00	2.00					
No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Female-headed HHs	Number	1.36	2.00	EOP	Sample survey	Project PIU		
No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Male-headed HHs	Number	1.57	2.00	EOP	Sample survey	Project PIU		
Description:									





No Change	Name: Physical assets in targetted dsitricts clasified as highly vulnerable in targetted dsitricts	Percentage	0.00	5.00	EOP	Annual reporting	Project PIU
<p>Description: In the context of this indicator, "highly vulnerable" means asset that are vulnerable to the impact of climate risk hazard as expressed in the form of increasing return of floods.</p>							
No Change	Name: Proportion of key floodplain canals operating at near optimum flow	Text	No canal has any viable technical maintenance design nor has been rehabilitated or maintained in the past 20years	O&M plan and design in place and adhered to.			
No Change	Proportion of key floodplain canals operating at near optimum flow (inside and outside of project area)	Text	No canal has any viable technical maintenance design nor has been rehabilitated or maintained in the past	O&M plan and design in place and adhered to.	EOP	Technical review	Project PIU



Description:			20years		
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Target Values

Project Development Objective Indicators

Action	Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
No Change	Changes in the budget allocations to climate smart programs in national budgets	0.00							3,162,000.00
No Change	Increase in national budget allocations to climate resilient programmes for climate vulnerable sectors: amount approved	2,529,600.00						686,837.91	3,162,000.00
No Change	Increase in national budget allocations to climate resilient programmes for climate vulnerable sectors: amount disbursed (ZMW/yr)	1,900,400.00							2,375,500.00
No Change	Vulnerable districts, wards and communities use improved tools, information and instruments to respond to climate change and variability	0.00			50.00			70.00	70.00



No Change	Percentage of targeted councils assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)	0.00				50.00		70.00	70.00
No Change	Percentage of targeted wards assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)	0.00				50.00		70.00	70.00
No Change	Percentage of targeted community groups assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)	0.00							70.00
No Change	Canals with optimal average flows	No engineering design and specification							Designed slope and cross sections



No Change		n of canals in place before rehabilitation			maintained to the engineering standard. And functional use of canal by WUA and community
No Change	Average flow velocity of targeted canal (m/s)	Engineering design and specification of canals in place before rehabilitation			Designed slope and cross sections maintained to the engineering standard. And functional use of canal by WUA and community
No Change	Average flow velocity of targeted canal (m/s)	0.60			0.48
No Change	Number of beneficiaries supported directly by the project to adapt to the effects of climate change	0.00			0.00



Revised	Number of direct beneficiaries (cumulative): total households	0.00									33,300.00
Revised	Number of direct beneficiaries (cumulative): women-headed household	0.00									12,250.00
No Change	Number of direct beneficiaries (cumulative): other vulnerable households	0.00									14,800.00
Revised	Number of direct beneficiaries (cumulative): total number of people	0.00									165,500.00
New	Number of enterprise grants submitted for evaluation	0.00									600.00
New	Number of enterprise grants implemented	0.00									300.00
New	Citizens reporting satisfaction with key aspects of collaboration process	0.00									70.00

**Intermediate Results Indicators**



**The World Bank**  
Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) (P165442)

Action	Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
No Change	Strengthened Government capacity to mainstream climate resilience	Interim National Climate Change Secretariat (INCCS) established							Council fully operational effectively coordinating climate change funding, programs and projects
No Change	National Climate Change and Development Council (or equivalent) established and fully operational, effectively coordinating climate change funding, programs and projects	Interim National Climate Change Secretariat (INCCS) established							Council fully operational effectively coordinating climate change funding, programs and projects
No Change	Strengthened institutional and financial mechanisms to ensure climate resilience	No							Y
No Change	Canal operation and maintenance (O&M) agreement adopted by	No							Y



No Change	provincial authority	Climate resilient programs and policies in key vulnerable sectors screened for their impact	0.00														4.00
No Change		Number of sectoral screening guidelines for climate resilience programs and policies developed for key sectors	0.00														4.00
No Change		Climate responsive financial instruments developed and tested	0.00														2.00
No Change		Number of climate risk financing instruments developed	0.00														2.00
No Change		Number of climate risk financing instruments tested	0.00														1.00
No Change		Number of relevant climate information products/services made available for decision-making at various levels	No information available														Information Available
No Change		Professional social marketing awareness campaign designed and implemented	No														Yes
No Change		Two-way early warning	SMS														70 %





	system (EWS) established and operational in targeted districts	system piloted for hydro info, with limited coverage							coverage in targeted districts
No Change	Two-way early warning system (EWS) established and operational in targeted districts	No							Yes
No Change	Climate resilience mainstreaming in local area planning	24.00							24.00
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards : district-level (IDPs)	0.00							6.00
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards: ward-level (ADPs) <sup>18</sup>	0.00							18.00
No Change	Climate risk assessment completed for Barotse sub-basin, and incorporated into provincial-level planning	0.00							1.00



**The World Bank**

Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) (P165442)

No Change	Strengthened institutional and financial mechanisms to ensure climate resilience	No																	Yes
No Change	Provincial level agreement for optimal canal operation and maintenance (O&M) adopted and with BRE support	No																	Yes
No Change	Local adaptation contingency fund established	No																	Yes
No Change	Number of sub-grants approved and completed	0.00																	1,324.00
No Change	Number of sub-grants approved: district-level	0.00																	24.00
No Change	Number of sub-grants approved: ward-level	0.00																	72.00
No Change	Number of sub-grants approved: community-level	0.00	0.00	68.00	272.00	628.00	890.00	1,150.00											1,150.00
No Change	Number of sub-grants approved : individual champion	0.00																	78.00
No Change	Number of sub-grants approved: individual champion female	0.00																	23.00
No Change	Areas with access to	0.00																	400.00





No Change	livelihood income per sampled beneficiary household: Female-headed HHS	1.57											2.00
No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Male-headed HHS												5.00
No Change	Physical assets in targetted dsitricks clasified as highly vulnerable in targetted dsitricks	0.00											
No Change	Proportion of key floodplain canals operating at near optimum flow	No canal has any viable technical maintenance design nor has been rehabilitated or maintained in the past 20years											O&M plan and design in place and adhered to.
No Change	Proportion of key floodplain canals	No canal has any											O&M plan and design



	<p>operating at near optimum flow (inside and outside of project area)</p>	<p>viable technical maintenance design nor has been rehabilitated or maintained in the past 20years</p>				<p>in place and adhered to.</p>
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## ANNEX 1: DETAILED PROJECT DESCRIPTION

### 1. Background and Context for the Project

1. **The growing reality of climate change.** Climate change is the greatest challenge of the 21st Century, perhaps unprecedented in the history of civilization. The presented facts clearly underline the increased risks and vulnerability that people face under this imminent threat. Indisputable scientific evidence shows that we are rapidly approaching a point when ecological disaster is unavoidable if no urgent and collective action is taken. As an interdependent world, no country, however wealthy or powerful, will escape the impact of climate change. However, the poorest populations in the least developed countries will be the first to suffer and will bear the brunt of the impact, despite contributing least to the problem.

2. **Impacts of variable weather.** Severe droughts, floods, and storms have already become commonplace across the globe, affecting millions of people every year. Projections paint a bleak picture for Africa's future with rural populations facing the greatest risks because they are the most vulnerable with the least resources to address the problem. Over the decades ahead, incidents of extreme weather will become more frequent, less predictable, and more intense. The results are steadily destroying livelihoods, reinforcing inequalities, and reducing opportunities for recovery (see United Nations Development Program [UNDP] Human Development Report 2007/08).

3. **Context for the parent project.** The Zambia Strengthening Climate Resilience PPCR Phase II Project (P127254) has the overall objective to strengthen Zambia's institutional framework for climate resilience and to improve the adaptive capacity of vulnerable communities in the Barotse sub-basins. The strategic importance and relevance of the project is underscored by the highly variable nature of Zambia's climate, which is characterized by frequent droughts, seasonal and flash floods, extreme temperatures, and dry spells. The increased frequency and intensity of droughts and floods is estimated to cost the country about 0.4 percent in annual economic growth.

4. **Zambia's vulnerability to climatic change is illustrated by key statistics presented in the 2016 UNDP Human Development Index, which ranks Zambia 139 out of 188 countries.** A key reason for this ranking is that 64.4 percent of the population lives below the poverty line of US\$1.90 per day with another 10–15 percent is only marginally better off. In rural areas, most of the population lives a hand-to-mouth existence dependent on subsistence farming, fishing, illegal charcoal-making, and hunting. The situation is more severe among communities living in remote areas due to isolation from urban centers, markets, and public services, especially health, education, and agricultural extension.



**Table 1.1. Zambia Population Statistics**

Population in 2016 (millions)	16.59
Population, urban (%)	40.9
Life expectancy at birth (years)	60.8
Life expectancy at birth, female (years)	62.9
Life expectancy at birth, male (years)	58.8
Infant mortality rate (per 1,000 live births)	43.3
Under-five mortality rate (per 1,000 live births)	64
Stunting (moderate or severe) (% under age 5)	40
HIV prevalence, adult (% ages 15–49), total	12.9
Adult literacy rate (% ages 15 and older)	63.4
Mean years of schooling (years)	6.9
Mean years of schooling, female (years)	6.4
Mean years of schooling, male (years)	7.4
Primary school dropout rate (% of primary school cohort)	44.5
Gross domestic product, total (2011 PPP US\$, billions)	58.8
Labor force participation rate, female (% ages 15 and older)	69.8
Labor force participation rate, male (% ages 15 and older)	80.9
Population in multidimensional poverty, headcount (%)	54.4
Population near multidimensional poverty (%)	23.1
Population living below income poverty line, PPP US\$1.90 a day (%)	64.4
Child labor (% ages 5–14)	41
Vulnerable employment (% of total employment)	79
Youth not in school or employment (% ages 15–24)	28.3

Source: 2016 UNDP Human Development Index.

Note: PPP = Purchasing Power Parity.

5. **Under the weight of Zambia’s growing population, demands are increasing for land, food, water, shelter, energy, and other basic necessities.** Collectively, these problems are leading to a vicious cycle of increasing poverty that is eroding the productive capacity of agriculture and the natural resource base. Alleviating these growing challenges requires a long-term commitment of resources under a strategy that tackles the root causes of the problems in an integrated holistic manner.

6. **Environmental perspectives.** Zambia’s rapidly growing population is exerting increasing pressures on natural resources due to rising demands for land, food, water, energy, and other necessities with little attention to the natural resource base. The consequences are significant. Land holdings are shrinking in size and becoming more fragmented, forcing expansion into marginal areas. Continuous cultivation is now the norm, often in monocultures with no rotations or fallow periods and few inputs. The results are reflected in declining soil fertility and crop yields with alarming rates of environmental degradation. Deforestation is now estimated at close to 1



percent per year, one of the highest on the continent, due to increasing demands for fuelwood and land for farming. Loss of top soil from poor land-use practices is considered comparable to the levels reported in neighboring Malawi (average of 29 tons per ha per year) where the agroecology and farming systems are similar.

7. **Development challenges.** Despite enormous efforts and funds to promote production-increasing technologies over the last four decades, the challenges have intensified from failures to (a) fully engage communities as active participants in identifying interventions aligned with their priorities, resources, and capabilities (that is, understanding the local cultural, social, economic, and ecological context under which a technology is expected to function); (b) empower people with the knowledge, skills, and resources to adopt and sustain improved practices; and (c) attract the immense potential of the private sector to participate in development solutions that help small producers and farmers to make the leap from subsistence to market-led enterprises that are profitable and sustainable.

8. **PPCR Phase II achievements.** Good progress has been made in achieving the objectives of the Zambia Strengthening Climate Resilience PPCR Phase II Project (P127254). Key highlights include the following:

- (a) **Achievements under Component 1.** The Strategic National Program Support was rated Satisfactory in the latest Implementation Status and Results Report (ISR) (December 2017). and currently includes the development of the National Climate Change Policy, which was approved in April 26, 2016. In addition, the National Development Plan and District Development Plan were mainstreamed with the Climate Risk Consideration and Development of Climate Risk Finance Options. A national climate change communication strategy was also developed, including an Open Data for Resilience Initiative (Open DRI) system to help strengthen early warning and climate information services to end users.
- (b) **Achievements under Component 2.** Support to Participatory Adaptation was rated Satisfactory by the last Implementation Status and Results Report (ISR) as follows: training of 12 CRAFTs; training of more than 2,500 actors on themes that enabled trainees to improve the quality of services rendered in planning, development, and approval of sub-grant-funded projects that are climate resilient; the CDPs; and the Ward and District Development Plans.
- (c) **Achievements under Component 3.** Pilot Participatory Adaptation was rated Moderately Satisfactory in the latest ISR. Major progress was made on (a) rehabilitating two priority canals (Lubitamei and Muoyowamo, which are also used for the annual traditional Koumboka ceremony), along with 34 secondary and tertiary canals for irrigation, transport, and so on; (b) providing support to 66 vulnerable HHs to engage in integrated fish farming; (c) increasing and diversifying livelihoods and promoting the use of non-tapped resources; and (d) producing a





manual on National Standard Norms and Procedures for the operation and maintenance of canals.

9. **Rationale for AF.** Based on the situation described above, an AF in the amount of US\$14.6 million is proposed for implementing a pilot program to build upon, complement, and support the Zambia Strengthening Climate Resilience PPCR Phase II Project (P127254) under three interrelated activities (see details paragraph 13).

10. **Challenges faced by producer groups in the Barotse sub-basins.** The challenges include (a) low farm productivity and diversification with increasing vulnerability to climate change; (b) overdependence on rain-fed maize, a drought-sensitive, nutrient-demanding crop of low nutritional value; (c) declining land productivity due to the degradation of the natural resource base from poor land-use practices; (d) decreasing supplies of wood for fuel and timber to meet basic domestic and farm needs; (e) high incidence of disease due to lack of potable water and sanitation; (f) limited opportunity to acquire new knowledge and skills to adopt improved practices; (g) low access to credit and capital to purchase critical inputs; (h) weak links to input and output markets; and (i) inadequate support services across all sectors, including health and education. The overall objective of the AF pilot is to address these challenges through an innovative market-driven approach. Under the AF, subsistence farmers and producer groups will be assisted in developing business plans to engage in improved techniques and new technologies to move into the market economy. Targeted demand-driven TA will also be provided along with finance on a competitive basis to support the implementation of approved business plans.

### 1.1 Project Timeframe and Structure

11. **In line with the Zambia SCD (P158874) of March 2018,** the proposed AF pilot program will implement an innovative market-driven value chain approach with engagement of private and public service providers to transform vulnerable subsistence livelihoods into resilient prosperous enterprises.

12. **To achieve the intended results of the AF objectives, implementation is proposed over a 36-month period, which means extending the closing date of the PPCR Phase II to December 31, 2022.** The justification is evident from the Results Framework, which includes recommended modifications during the appraisal process to capture the increased scale of outputs and outcomes generated by the AF pilot program (see Results Framework).

13. **The following three interrelated activities will be undertaken under the proposed AF pilot project:**

- (a) Activity 1: Identify the challenges, risks, and opportunities for producers to transform their livelihoods into market-based enterprises.



- (b) Activity 2: Develop a service delivery system for an information platform to facilitate the dissemination and accessibility of information for producer groups and other users/stakeholders.
- (c) Activity 3: Support livelihood diversification/enterprises (for example, crops, fisheries, livestock, and irrigated high-value crops) under targeted value chains linked to strong markets).

## **2. Detailed Activity Description**

### **2.1 Activity 1: Identify the challenges, risks, and opportunities for producers to transform their livelihoods into market-based enterprises.**

#### **2.1.1 Activity 1 Background**

##### ***Rationale for Smallholder Producers to Engage in Enterprises***

14. **The proposed activities will expand and strengthen models and platforms developed by the CRAFTs to support the project’s value chain and market-driven approaches for increasing productivity, diversification, and profitability with enhanced resilience to sustain livelihoods.** Priority areas of support will include (a) value chain studies of key sub-sectors within the Barotse sub-basins to identify major barriers and opportunities affecting smallholder productivity, innovation, resilience, and participation in the marketplace, and (b) engaging service providers to build capacity for producers to move away from subsistence by creating opportunities to establish viable and sustainable enterprises.

##### ***Constraints to Participation of Smallholder Producers and Private Sector in Climate-resilient Interventions***

15. **Smallholder producer and private sector involvement in climate resilience in Zambia is constrained by many factors.** According to a study by IFC: Price Waterhouse & Coopers (PWC, 2013),<sup>9</sup> some of the critical factors include the following:

- There are weak Government policy and regulatory frameworks to create stronger incentives for investment by smallholder producers and private—for example, underpricing of and lighter punishments for illegal extraction of natural resource based products and other forms of subsidies that can distort market prices and act as disincentives and therefore negatively influence the business case for investing in climate change adaptation.

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<sup>9</sup> IFC: Pilot Program for Climate Resilience (PPCR) – Private Sector Support to Climate Resilience in Zambia – Price Waterhouse & Coopers, 2014



- The study found that doing business in Zambia is seen to be slow, bureaucratic, and made of processes and regulations that hinder rather than encourage enterprise.
- There are issues of land tenure, particularly with regard to the fact that much of Zambia's land is not titled but held under the customary tenure system by local chiefs. This system makes it difficult for both businesses and local communities to commercialize as it is not considered collateral. There is opportunity to use current legislation and community engagement to indicate who is responsible for the land through a formalized agreement of rights and responsibilities. However, there is no agreement on a consistent approach and the lack of land security is a barrier to large-scale agricultural investment in small-scale or community agricultural businesses.
- There is a lack of knowledge about climate vulnerability and risk and hence failure to understand how to integrate climate change risks or opportunities into investment or financial decision making. For example, lack of access to and familiarity with technologies that help strengthen climate resilience can alter investment risk perception even among small-scale businesses.
- Uncertainties about the economics of enterprises including return to investments, inadequate access to finance or capital, and risk aversion can impede the ability or interest of small producers to invest in climate resilience.
- Small businesses that have a comparative advantage to provide goods and services at the local level are excluded.

### ***Opportunities for Investing in Climate Resilience by Producer Groups and Mainstream Private Sector***

16. **Despite the existing barriers, there are many opportunities that could attract participation in climate resilience by smallholder producer groups and mainstream private sector.** The following are some key success factors that could spur engagement of both small- and medium-scale producers in climate resilience (some of these were identified by the IFC: Price Waterhouse & Coopers study):

- Growing urban middle classes who are driving up demand for horticultural products from retail supermarkets and open markets (which sell approximately 80 percent of market share);
- Increasing demand for products, goods, and services that reduce the carbon footprint of companies and small businesses including smallholder producers;
- Provision of platform for private sector growth by improving the income base of smallholder producers to create increased demand for their goods and services;



- Commercial demand for agricultural produce. For example, 200,000 tonnes of soy were produced in Zambia in 2011. Demand from one company alone was for 100,000 tonnes, but it was only able to procure 90,000 tonnes within Zambia. Another buyer had indicated it would be interested in securing soy produce from smallholder farmers within Zambia;
- High cross-border market opportunity into South Africa, Zimbabwe, Malawi, Tanzania, and the Democratic Republic of Congo—a significant proportion of current exports are informal transactions, which are not accounted for, which suggests the market opportunity may be underestimated;
- Smallholder producers being increasingly treated as business partners, rather than beneficiaries of charitable support. The majority of small-scale producers have the capacity to pay for goods and services instead of relying on free handouts or subsidies. The study found one company working with approximately 16,000 smallholder producers—assisting them to move from subsistence to higher-value farming; and
- Opportunity for suppliers, aggregators, and offtakers to increase volumes of commercial activity—if able to link effectively with the smallholder producers. The TA required to link producers to the value chain is typically dependent on grant or soft loans. However, through leveraging, these links can be commercialized. In effect, using market incentives to increase demand for inputs by producers and aggregation of produce by offtakers would upgrade smallholder producers' profile on the value chains.

### 2.1.2 Activity 1 Scope and Objectives

17. **The main aim of the activity is to identify key challenges, risks, and opportunities for transforming livelihoods of producers into market-based enterprises.** In this regard, the project will contract firms to conduct value chain studies (including secondary sources of information) and identify key challenges and interventions to incentivize smallholder producers to initiate viable enterprises for increasing productivity, incomes, and resilience to climate change. Key sub-sectors include rice, fish, livestock, cassava, irrigated horticultural crops, mangoes, cashew nuts and others (for example, essential oils and sesame that may be identified by the reviews, producer groups, and the CRAFTs. In addition, the project will engage a firm to (a) develop templates and guidelines for small-producer business plans and enterprise grants; (b) build capacity of producer groups to develop and implement business plans for targeted enterprises; and (c) assist in screening and selecting the best proposals in consultation with the PIU.

18. **Implementation of Activity 1 will have many spin-offs that could apply far beyond the Barotse sub-basins.** Examples include (a) attracting private sector investment in providing goods and services, (b) aggregating produce from out-grower schemes, (c) conducting reviews of value



chains, (d) producing templates and guidelines for business plans and enterprise grants for application with other initiatives elsewhere in the country, and (e) emergence of a nationwide network of public and private actors that will facilitate widespread diffusion of market-driven enterprises.

**19. The approach of the proposed investment is to provide support toward investments in improved climate-resilient enterprises through funding for technical cooperation activities, developing tools for production of business plans and grant operational guidelines, and offering small grants to producer groups and market-led businesses.** The overall strategy is to build a nationwide network of public and private actors that will facilitate widespread diffusion of market-driven climate-resilient technologies and farming practices to improve yields and sustain livelihoods. In addition, the project would contribute to the achievement of the World Bank Cascade Objective<sup>10</sup>, with the aim to build climate resilience in the sub-basins and beyond by mobilizing/catalyzing smallholder participation in viable enterprises.

#### ***Actions Needed to Implement Activity 1***

- Review key value chains (see relevant examples below) and fill any knowledge gaps to identify challenges, opportunities, and financial returns to target the best interventions in consultation with primary producers and other stakeholders. These may include fish, rice, cassava, livestock, irrigated horticultural crops, mangoes, cashew nuts and others to be identified by the reviews, producers, PIU, and others (for example, essential oils and sesame).
- Engage provincial stakeholders and beneficiaries to validate, prioritize, and target the highest potential value chains and actions to alleviate key barriers.
- Develop and pretest templates for business plans and guidelines for enterprise grants.
- Build capacity of producers to develop and implement enterprise business plans.
- Provide technical support services to producer groups.
- Address market/policy/infrastructural constraints to the effective function of one or more targeted value chains.

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<sup>10</sup> A Cascade Decision-Making Approach. Infrastructure Finance. Guiding principles for the World Bank Group. April 2017.



## 2.2 Activity 2: Develop a service delivery system for an information platform to facilitate the dissemination and accessibility of information for producer groups and other users/stakeholders

### 2.2.1 Activity 2 Background

20. **The aim of this activity is to contribute to the achievement of Component 1 of the PPRC in Zambia, which is to strengthen Zambia’s national, institutional, and financial framework for climate resilience.** This will help develop the foundation for long-term transformational change in Zambia with support to the National Climate Change Coordination Unit’s role in overseeing and monitoring the national program (the SPCR in particular). The strengthened framework and public awareness will, in turn, contribute to more effective mainstreaming of climate resilience among vulnerable economic sectors, where experiences and lessons from the field will provide the basis for scaling up.

21. **‘Strengthened climate information’ is a key subcomponent of Component 1 under the proposed AF funding with a focus on providing more reliable, accessible, and early warning of climate information to users at different points of the value chains ranging from decision makers and implementing agencies to smallholder producers and others.** Specifically, it addresses three objectives: (a) social marketing awareness campaigns; (b) a strengthened early warning system; and (c) development of an open data platform, to facilitate sharing hydrometeorological, geospatial, climate vulnerability, and risk assessments among a wide range of decision makers and other users of the information.

22. **During the current Phase II of PPCR, good progress has been made toward realizing the objectives of Subcomponent 1.2, which is strengthened climate information.** The major achievement has been the development of a national climate change communication strategy, including an Open DRI system to help strengthen early warning and climate information services to end users. Through the program, Zambia has demonstrated leadership in the region and internationally in knowledge management and shared learning to other PPCR countries.

23. **Although good progress has been made under Subcomponent 1.2, the AF project recognizes the need to develop a service delivery system for disseminating information on climate, market, outbreaks, climate-smart practices, and so on to a wide range of producers.** This will entail consolidating and scaling up successful project activities under Subcomponent 1.2 with a focus on engaging and including the private sector.

### 2.2.2 Activity 2 Scope and Objectives

24. **The main objective of Activity 2 is to provide credible and time-bound weather, market, climate-smart practices, and other relevant types of information to smallholder producers and other users to enable more informed decision making about their livelihoods and production enterprises.** The information may take different forms for different users, for example, agro-



meteorological, weather forecasts including possibilities of floods or drought, markets, commodity prices, climate-smart practices, and disease/pest outbreaks. All forms of information are key in helping producers and other users to make better choices about managing their operations in response to changing conditions. A key element of this activity is its national scope of impact.

### ***Supply Side of Information Dissemination***

25. **To mainstream the dissemination of information to farmers and other users, it is imperative to develop a one-stop service delivery system linked to a platform for coordinating the production and uploading of messages onto a mobile or other platform for sharing with producers.** The structure should be developed along the following lines:

- **National Content Development Committee:** This will involve setting up a national content development committee or strengthening an existing structure. The committee's responsibilities would include, for example, reviewing, harmonizing, and pretesting messages on weather, markets, conservation, agriculture practices, pests/disease outbreaks, and any other subject relevant in promoting climate resilience. The committee could include representation from line ministries, community-based organizations, private sector and academia, and so on. To minimize bureaucracy and achieve neutrality, the secretariat could be placed under the MoNDP. The committee's responsibility should include generating messages based on the context or needs of producers. Some messages could be demanded by farmers themselves.

The type of language used is critical. While specific individuals could be selected to assist others in the interpretation of SMS messages if presented in English or other languages, it is important to use the language applicable to the location. A study on Private Sector Support to Climate Resilience in Zambia – Mobile Phone Platform for Disseminating Information to Smallholder Farmers (ECIAfrica/DAI, 2012<sup>11</sup>) recommended that a dissemination platform should allow farmers to indicate their preferred languages for information exchanges to avoid delays that may render it useless or obsolete.

- **Packaging messages for uploading on mobile, radio, television, and video platforms.** The project would engage an organization specialized in converting messages (which should be user-friendly in terms of access, interpretation, and application) and uploading them on mobile, radio, television, and video platforms. If expertise is not available in Zambia, the project will outsource to an international entity that has the competencies and track record to implement the activity. The

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<sup>11</sup> IFC Private Sector Support to Climate Resilience in Zambia: Mobile Phone Platform for Disseminating Information to Smallholder Farmers. ECIAfrica/DAI, 2012





entity will be required, as part of its terms of reference, to build local capacity for sustaining the program beyond the life of the project.

- **Mobile network, radio, television, and video service providers.** Part of the AF funds will be used to kick-start the activity through a public-private partnership arrangement in which one or more mobile network, radio, television, and video production service providers will be engaged in the transmission of weather, market, and other climate smart related messages (for example, FNMR, crop diversification, irrigation, aquaculture, small livestock) to producer groups and other users. The service providers' responsibility is to share information with farmers through SMS/voice mail messages, video clips using a specially designated portal, and testimonies by producers through radio, television, and videos. The service providers would benefit through airtime charges. It is envisaged that a subscriber will be given a limited number of free repeat SMS or voice mail messages after which the system starts charging. A parallel portal could be set up to target extension officers offering them more advanced messages to augment their existing knowledge. To function properly, there must be strong links between the platforms to ensure that the messages delivered are consistent and user-friendly.

### ***Demand Side of Information Dissemination***

26. **The project will support producer groups to have a say on what type of information they want disseminated through radio and television including development and sharing of radio programs and mechanisms for them to provide feedback on what is happening within their localities in terms of weather events/disasters, market information, disease/pest outbreaks, and so on.** Key to this will be that the producer groups become listening platforms for the programs.

### ***Actions Needed to Implement Activity 2***

27. **The following actions will be taken:**

- Evaluate existing platforms and mechanisms for generating and disseminating information.
- Conduct a rapid Knowledge, Attitude, and Practice survey of targeted beneficiaries to identify gaps and interventions for disseminating information.
- Build capacity as needed for Government departments and other service providers to produce and disseminate user-friendly weather, market, and climate information.





- Package the content of user-friendly technical messages on enterprises, climate-smart practices, and other relevant information for dissemination through various outlets.
- Support the dissemination of technical messages through various outlets (mobile, radio, television, and other media).
- Develop a catalog with simple guidelines on how producer groups can access and effectively use information from various platforms.
- Organize reviews periodically to assess the successes, challenges, and lessons for scaling up/improving the effectiveness of platforms/mechanisms for generating and disseminating information.

### **2.3 Activity 3: Support livelihood diversification/enterprises (for example, crops, fisheries, livestock, and irrigated high-value crops) under targeted value chains linked to strong markets**

#### **2.3.1 Activity 3 Background**

28. **Smallholder producers in Zambia face similar challenges and have similar ambitions.** They want to increase yields, produce enough food to feed their families, send their children to school, reduce labor and input costs, minimize risks of climate change, live in better houses, and earn money to meet their basic needs and more. The proposed activity under the AF offers opportunities to remove key barriers that will enable rural producers to realize these ambitions.

#### **2.3.2 Activity 3 Scope and Objectives**

29. **The AF pilot project will undertake a transformative market-driven approach with communities to increase the productivity, profitability, and climate resilience of smallholder producers by creating a conducive environment for establishing and managing lucrative enterprises linked to good markets.** The primary aim is to assist producers to establish enterprises to increase the production and marketing of various products or commodities identified under Activity 1.

30. **In the case of crops, emphasis will include building resilience and sustainability by using appropriate climate-smart agricultural (CSA) practices to increase and stabilize production under variable rainfall with lower input and labor costs.** CSA practices that will be promoted include agroforestry, farmer-managed natural regeneration (FMNR)<sup>12</sup>, intercropping, and double-up legume rotations. Fish farming and small livestock production will emphasize pass-on

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<sup>12</sup> FMNR is one of the most popular and successful agroforestry practices in Africa because it is a simple, low-cost method that provides multiple products and uses, while protecting the environment from extreme weather and restoring the biodiversity of the natural landscape.



systems to benefit more producers at low cost. All initiatives will focus on organizing producers into groups or cooperatives based on common interests with strong and transparent governance/leadership structures to strengthen business skills, analytical capabilities for problem solving, decision making, fair treatment, and responsive action to opportunities. A parallel function will be to establish strong market links to access inputs and information on improved practices, superior crop varieties, markets, commodity prices, and weather projections. A key driver to promote entry into these initiatives could include incentives for integrating sustainable practices into various enterprises. Possible incentives could include higher prices for produce or lowering costs of inputs.

### ***Actions Needed to Implement Activity 3***

**31. A key activity will be to provide grants to producers, based on established guidelines and criteria, which reflect practical and viable business plans for implementing specific enterprises aligned with the results of the value chain assessment.**

**32. Potential value chains (based on the farming systems and agroecology in the Barotse sub-basins) may include fish farming, rice, cassava, irrigated horticultural crops, livestock, local mangoes, and cashew nuts, but others may be identified such as essential oils and sesame.** Prime examples of the types of activities to support producers are provided as follows:

- (a) **Fish farming.** A variety of enterprises along the fish value chain could be promoted with individual entrepreneurs or organized groups and cooperatives. Enterprises could include the production and sale of fingerlings, fish, and feed, as well as the construction of ponds and provision of cold storage and drying facilities. These enterprises could be established as stand-alone initiatives or integrated with other practices such as rice and livestock production.
- (b) **CSA.** CSA practices will be promoted with high-value crops suited to the local farming system and agroecology. Emphasis will be placed on CA, FMNR, agroforestry, organic manures, intercropping, and double-up legume rotations to produce higher and more stable yields under variable rainfall with lower labor and input costs. Opportunities to attract interest in CSA could include linking groups of farmers to entrepreneurs or commercial farmers to provide mechanized or animal-drawn ripping services as a labor-saving, cost-effective method of land preparation.
- (c) **Irrigation.** Provide opportunities with solar systems and other technologies to rehabilitate or upgrade irrigation canals for producing food and cash crops in high demand to increase food security, HH nutrition, and incomes based on market demands. Irrigation of high-value horticultural crops will also increase resilience against risks of low yields under rain-fed farming;



- (d) **Seed multiplication.** Support local multiplication of improved seed of priority crops by organized groups of entrepreneurial-minded farmers for sale at affordable prices to other farmers. This will entail establishing strong links to seed companies to secure new seed every year for multiplication.
- (e) **Livestock production.** Increased livestock production could be promoted under pass-on systems to facilitate entry into the animal business to increase incomes and animal protein in the diet as well as to offset risks of crop failures from drought or floods. The abundance of cattle in the area offers opportunities to develop dairy-based enterprises. Goats and poultry may offer a better option for small producers to sell meat and hides due to lower investment costs and faster returns owing to rapid growth and reproduction.
- (f) **Tree crops.** Opportunities may exist to develop links with organized groups, cooperatives or associations to produce or deliver mangoes, cashew nuts, or other tree products for sale to commercial processors. This may require efforts to initiate dialogue with existing or potential processors to establish a base of operation in Western Province to take advantage of the ventures identified with local producers and entrepreneurs. This includes leveraging activities under a new initiative by USAID, African Development Bank, and so on to support the production of cashew nuts in Western Province.

#### ***Other Initiatives in Support of the Identified Value Chains and Enterprises***

- **Collective marketing.** Strengthen farmer organizations for collective marketing to attract more favorable prices of commodities produced and to reduce costs associated with procuring inputs and organizing transport of produce to market. A key element will be to establish cooperative depots and related communication systems for more cost-efficient bulking and trading of commodities to attract more favorable prices.
- **Warehouse receipt system (WHRS).** Explore opportunities to link producers to the WHRS to increase access to collateral finance, to secure safe storage of produce when prices are low, and to identify opportunities to sell produce to prospective buyers at better prices.
- **Value-added processing.** Explore opportunities for agro-processing of different commodities, such as rice, cassava, and milk products to increase demands in the market in these value chains with the aim to increase returns to producers.
- **Market links.** Facilitate links between commercial farmers, traders, agro-processors, commodity exchanges, and smallholders to support production and sale of high-quality produce at higher prices.



- **Access to services and incentives.** Strengthen the range of services to farmers, primarily through cooperative-led initiatives linked to markets and buyers.