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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

FROM THE
STRATEGIC CLIMATE FUND - PILOT PROGRAM FOR CLIMATE RESILIENCE

TO THE

REPUBLIC OF ZAMBIA

FOR THE

ZAMBIA STRENGTHENING CLIMATE RESILIENCE (PPCR PHASE II)

November 27, 2017

Environment & Natural Resources Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective Nov 09, 2017)

Currency Unit	=	ZMW (Zambian Kwacha)
US$1	=	ZMW9.925

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Makhtar Diop
Country Director:	Paul Noumba Um
Senior Global Practice Director:	Karin Erika Kemper
Practice Manager:	Magda Lovei
Task Team Leader(s):	Iretomiwa Olatunji, Nathalie Weier Johnson

ABBREVIATIONS AND ACRONYMS

ADP	Area Development Plans
BRE	Barotse Royal Establishment
CRAFTs	Climate Risk Facilitating Teams
CSA	Climate Smart Agriculture
ESIA	Simplified Environmental Impact Assessment
EWS	Early Warning System
FM	Financial Management
FMNR	Farmer-managed natural regeneration
GDP	Gross Domestic Product
HH	Household
ICT	Information and Communications Technology
IDA	International Development Association
IDP	Integrated Development Plans
IFC	International Finance Corporation
INCCS	Interim National Climate Change Secretariat
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
MoF	Ministry of Finance
MoNDP	Ministry of National Development Planning
O&M	Operation and Maintenance
OpenDRI	Open Data for Resilience Initiative
PAD	Project Appraisal Document
PDO	Project Development Objective
PIU	Project Implementation Unit
PMP	Pest Management Plan
PPCR	Pilot Program for Climate Resilience
PPSD	Project Procurement Strategy for Development
RAP	Resettlement Action Plan
SCD	Strategic Country Diagnostic
SCF	Strategic Climate Fund
SMS	Short Message Service
SORT	Systematic Operational Risk Tool
SPCR	Strategic Pilot Program for Climate Resilience
TTL	Task Team Leader
UNDP	United Nations Development Program
WB	World Bank
ZCCN	Zambia Climate Change Network

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

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

Implementing Agency: Ministry of Finance, Ministry of National Development Planning

Is this a regionally tagged project?			
No			
[ ] Situations of Urgent Need or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects	Bank/IFC Collaboration No		
Approval Date	Closing Date	Original Environmental Assessment Category	Current EA Category
09-May-2013	31-Dec-2019	Partial Assessment (B)	Partial Assessment (B)

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 NationalProgram 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 ParticipatoryAdaptation, 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					Latest ISR
	10-Dec-2014	29-Jun-2015	24-Dec-2015	24-Jun-2016	22-Dec-2016	28-Jun-2017
Progress towards achievement of PDO	S	S	S	S	S	S
Overall Implementation Progress (IP)	S	MS	MS	MS	MS	MS
Overall Safeguards Rating		S	S	S	S	S
Overall Risk	M	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	29-Mar-2018	
Closing Date	**Bank/IFC Collaboration**		
31-Dec-2019	No		
Is this a regionally tagged project?			

No	

[ ] Situations of Urgent Need or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

PROJECT FINANCING DATA – PARENT (Zambia Strengthening Climate Resilience (PPCR Phase II) - P127254)

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
Grants	36.00	17.02	18.98	47 %

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Additional Financing for Zambia Strengthening Climate Resilience (PPCR Phase II) - P165442)

FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	14.60
Total Financing	14.60
Financing Gap	0.00

DETAILS

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

Yes

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

Yes

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

Yes

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Iretomiwa Olatunji	Team Leader (ADM Responsible)	Operations	GEN01
Nathalie Weier Johnson	Team Leader	Conservation and Adaptation	GEN01

Wedex Ilunga	Procurement Specialist (ADM Responsible)	Procurement Specialist	GGO01
Lingson Chikoti	Financial Management Specialist	Financial Specialist	GGO25
Cecil Nundwe	Team Member	Water Resource Specialist	GWA01
Kanta K. Rigaud	Team Member	Resilience	GCCRA
Lungiswa Thandiwe Gxaba	Environmental Safeguards Specialist	Safeguard	GEN01
Ngao Mubanga	Team Member		GFAGE
Njavwa Namposya Chilufya	Social Safeguards Specialist	Social Safeguard	GSU07
Randall Brummett	Team Member	Fisheries	GENGE
Wisdom E. Mulenga	Team Member	Program Assistant	AFMZM

Extended Team

Name	Title	Organization	Location

ZAMBIA

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

Table of Contents

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 AF is proposed in response to an endorsement letter from the Government of the Republic of Zambia (GRZ) dated September 20, 2017 requesting the World Bank to implement a project to mobilize private sector investments to support climate resilience projects. This AF aims to complement existing project funding that will allow for an extension of the programmatic approach the Bank is taking in the Barotse sub basin and other regions. It will also ensure the achievement of the Strategic Program for Climate Resilience(SPCR) i.e. the Pilot Program for Climate Resilience(PPCR) Investment Plan programmatic objective.

2. The resources for the AF come from the IFC SPCR allocation. 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 Zambia a potential re-allocation from the IFC of its remaining US$ 13.5 million concessional finance and US$1.1 million grant resources towards 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 the noteworthy benefits of deepening and scaling up Zambia PPCR by building on the current achievements on the ground with additional funds.

3. This proposed AF therefore builds on a private sector approach and is linked to the SPCR[1] goal that seeks to explore the private sector strengths and the premise it underpins on a country's economic growth and stability. To effectively contribute to and engage in programs related to building climate resilience, both public and private sector actors need to be part of climate resilience investments. The project aims to ensure that both the public and private sector 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. Zambia has a robust private sector (including finance and insurance companies, ICT companies and companies involved in the agri-business

[1] Zambia Strategic Programme for Climate Resilience 2011; Submission to Climate Investment Funds

and industrial sectors within Zambia) that is poised to help underpin and implement a private sector-led approach to climate resilience projects in line with the Zambia SPCR.

II. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

4. The parent project Zambia Strengthening Climate Resilience (PPCR Phase II, P127254) was approved on February 27, 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 6 years with a closing date of December 31, 2019. It is initially being piloted in 14 districts[2] 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.

5. The project has demonstrated a successful model for implementing climate adaptation measures. The progress towards achievement of the Project Development Objective (PDO) has remained Satisfactory since implementation commenced. Also, the overall Implementation Progress (IP) has remained Moderately Satisfactory for the past 12 months, reflecting some delays compared to the original schedule.

6. The AF would be used to scale up successful project activities across all three components with a focus on engaging and including the private sector (see section III for details). The Project Development Objectives would be modified to allow for additional geographic coverage of project activities where appropriate. The additional target area will be finalized during appraisal based on specific selection criteria (see para 7 below for criteria). The proposed revised PDO is "*to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin **and other regions***." The proposed AF would be implemented over a 36-month extension period with a closing date of December 31, 2022. A proposed results framework has been prepared and will be reviewed during appraisal to capture the additional level of outputs and outcomes generated by the additional resources and new activities. In line with the Zambia Strategic Country Diagnostic (SCD) (P158874) September, 2017 currently at the decision stage, the AF will place a central emphasis on microprojects that augment increasing resilience, job creation and sustainable natural resource management.

7. Eligibility criteria for the additional geographic coverage include the following:

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

- Has an existing PPCR investment and or other similar ongoing adaptation/resilience project
- Is a planned or proposed target for scaling up of climate resilience project/program
- Vulnerability to the impact of climate change
- High level of poverty with dependence on natural resources

8. 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 projects, including increased agricultural productivity, along with the possibility of diversification of sources of income, increased livelihood and reduction in malnutrition. It provides a platform to "catalyze" the private sector engagement for sustained benefits at scale. The investments from the proposed AF will target private sector support to the priority sub-basin of Barotse and the wider region. The additional investment will help leapfrog ongoing investment to the next level – in this case catalyzing the private sector though incentive payments and small grants and provision of climate information to promote resilience using the private sector and its associated market based mechanisms.

9. The AF pilot will 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 climate resilience in the smallholder agriculture sector. A key result will be the ***development of innovative approaches to better integrate smallholder farmers with the private sector to provide a platform for the growth and development of a robust and resilient smallholder agricultural economy*** with reduced dependencies on external assistance.

10. The proposed AF meets World Bank's criteria for an Additional Financing, including:

(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% in annual economic growth. The country ranks 139th out of 188 economies, that is, in the bottom quartile of the global human development rankings.[3] 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 the clear majority of the rural population (2016 national rural population stands at 59%)[4] whose livelihoods are linked to the productivity of natural resources. This is particularly true in the Barotse plains where

[3] United Nation; Human Development index 2016. Zambia ranking on the global human development ranking. *http://hdr.undp.org/en/countries/profiles/ZMB*

[4] World Bank 2016 World Bank Data Catalog. *https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS*

poverty levels are disproportionately high (poverty level is above 80%, with 87.5% of the population living in the rural area)[5], and socio-economic development is low. Therefore, by strengthening the capacity of the private sector, providing incentive payments and small grants, and developing a platform to facilitate the dissemination of market and climate information to farmers, the proposed AF will contribute to poverty alleviation and improved food security. These project interventions are related to agriculture and natural resources management. In this way, the proposed AF will squarely contribute to the World Bank's twin goal of eliminating extreme poverty and boosting shared prosperity.

(b) *Scaling up*: The project has demonstrated a successful model for implementing climate adaptation measures in Zambia. The proposed AF will help bring about "triple wins" – scaling-up, sustainability and securing resilience through adoption of new technologies. Having recognized the importance and the growing demand for climate services, scaling up provides the rationale for driving the process of replication of the model within the current beneficiary districts and the wider region. This will potentially increase the number of beneficiaries far beyond set targets. A scaling up will help with moving from proof of concept of livelihood diversification and income streams achieved during parent project towards incentive payments and small grants which are viable and attractive to communities.

III. DESCRIPTION OF ADDITIONAL FINANCING

11. The proposed additional investment activities provide opportunities to support investments in improved climate resilient technologies through funding for technical cooperation activities, offering incentive payments and small grants to private businesses, farmers and households. Having a robust participatory process (CRAFTs) which could facilitate continued support/training for the private sector and the climate information services, provides the required enabling environment and a basis to bring about climate resilience at scale through private-sector and market based approaches. The overall concept is to build a national widespread presence and network in the country of public and private actors that will facilitate widespread diffusion of 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, with the aim to build climate resilience in the sub-basins by mobilizing/catalyzing private sector investments in economic sectors such as agriculture and natural capital and by providing technical support to relevant private sector players in Zambia.

[5] Living Condition Monitoring Survey 2015.
https://www.zamstats.gov.zm/phocadownload/Living_Conditions/2015%20Living%20Conditions%20Monitoring%20Survey%20Report.pdf

12. The AF proposed activities will be an addition to the current existing activities under the ongoing project. The additional proposed activities are:

(a) ***Strengthening the capacity of the private sector to build climate resilience in agri-business, establish access to market and value chain, in water resource and natural capital use/ management.*** The activity is linked to Component 2: Support to Participatory adaptation; which aim is to strengthen the adaptive capacity of vulnerable rural communities through technical *Support, facilitation and strengthening of community decision-making and incremental project management support*. In addition, the activity is linked to Component 1: Strategic National Program Support, which aims to strengthen the national institutional framework for climate resilience, and provide the basis for long-term transformational change in Zambia climate resilience program. The activity, using the current climate risk facilitating teams (CRAFTs) model and existing capacity building platform would support a private sector approach i.e. build public/private partnerships, train cooperatives for implementing climate resilient technologies and farming practices that improve yields and sustain livelihoods including back stopping as technical extension expert. The linkage between the parent project component and the additional activity is the inclusion of a private sector led institutional framework approach and public awareness on available private sector driven climate resilience support. This will in turn contribute to a more effective mainstreaming of a private sector climate resilience technical assistance into vulnerable economic sectors;

(a) ***Providing incentive payments and small grants to support livelihood diversification e.g. farming, fisheries***, etc. The new activity is linked to component 3: Pilot Participatory Adaptation which is aimed at providing grants for actual participatory adaptation investments in the parent project target area. The linkage between this activity and the parent project is in exploring practicable means of delivering finance to small-holder farmers to adopt climate resilient cropping systems and practices; and

(b) ***Developing a platform to facilitate the dissemination of market, and climate information to farmers*** is linked to Component 1: Strategic National Program Support which aims to strengthen the national institutional framework for climate resilience, and provide the basis for long-term transformational change in Zambia climate resilience program. The activity would use available means of support through the project, private sector designed and managed information and technology packages for small-holder farmers that are feasible through public-private partnerships. The linkage between the parent project component and the additional activity is helping to create the enabling environment, to link the small holder farmers and corporative with market. This will in turn ensure incremental economic contribution into a vulnerable economic sector.

IV. KEY RISKS

13. **Key risks:** Project implementation faces a moderate risk. The staff from the Project Implementation Unit (PIU) i.e. national and sub-national 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 activities for which the AF is being requested are identified and described in the Systematic Operational Risk Tool (SORT) for the parent project and the concept memorandum for the AF. The risk is unchanged because the enabling environment in the country has remained stable to date since the parent project became effective.

14. One of the risk envisaged is associated with governance i.e. the risk that a portion of project benefits destined to the poorest beneficiaries would be captured by Government agencies, NGOs, or influential people within the communities. As with the parent project, the AF is going to continue using the decentralized funding mechanism adopted in the parent project. This has helped to ensure that beneficiary districts and communities receive direct funding as their climate resilient funds were endorsed. Mechanisms utilized in the parent project and has 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 (e.g. FrontlineSMS) – initiated during Phase I, Phase II - will be used as mechanisms to strengthen social accountability and transparency at district level. For the macroeconomies risk, the government is already working with the Bank and International Monetary Funds (IMF) on plans towards managing fiscal policies that impact the economy.

15. This AF is timely and will also benefit from exploring potential synergy with the *Zambia Agribusiness and Trade Project (P156492)*. The AF will help fast track a public private sector partnership implementation model for the new investment. The Agribusiness project was designed to support small scale emerging farmers like those in the AF project area through improving their capacity to finance and execute productive investment. In addition, the project currently has a platform for venture capital funds that will be managed by a private sector fund manager. This offers a platform for the AF through a fast track approach to implement "climate change based capital fund". In addition, being aware that financing climate resilience technologies is also new to local financial institutions, the AF will learn from the Tajikistan PPCR that was implemented through CLIMADAPT, and how their support to private sector lead approach under the PPCR was achieved.

V. APPRAISAL SUMMARY

A. Technical Aspects

16. The activities proposed under the AF will further support the strategic institutionalization of climate change adaptation measures in the current project target area and potentially beyond. The parent project has been working with local structures and implementation partners to improve and mainstream climate risk into livelihood option decision, 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 sub national levels through knowledge exchange amongst relevant districts to integrate adaptation processes in sub-project and development planning. In particular, it will be leveraged and integrated the importance to addressing value chain constraints in remote areas to achieve a wider scope of result. An indicative list of current and new typology technologies for the AF will be agreed during the appraisal.

17. The proposed AF activities, with integration of public private sector approach at its core have been selected to focus on completing the objective of driving and achieving the goal resilience holistically i.e. not sole dependence on grant. These activities build on existing in-country ongoing and future planned initiatives and/or international experience, and will involve strong partners with linkages to private sector, as described earlier in this Project Paper.

Implementation arrangements:

18. 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 and oversight of all climate change investment will continue with this role. Implementation and the supervision of the project will remain with the National Project coordination Unit of the Zambia PPCR Project, relevant line ministry and the Provincial administration through the PIU. Participating communities will continue to have the leadership for all the initiatives. The MoNDP will ensure coherence between the AF activities and other similar World Bank-supported operations. The AF will not require additional staff in the new geographic area(s); in line with the decentralization implementation arrangement used in the parent project i.e. provincial planning unit playing the role of project implementation unit supported with technical backstopping by the CRAFT.

B. Financial Management:

19. The FM arrangements remain unchanged. The project 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 financial management arrangements including staff, financial regulations and procedures.

C. Procurement

20. 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 IPF July 2016. These new procurement regulations require the client to prepare a Project Procurement Strategy for Development (PPSD). The World bank will support the PIU to prepare the PPSD prior to the Appraisal mission and to ensure that the PIU procurement staff receive any relevant training on the new rules under the PF. The AF will use the existing procurement arrangements since there are no major changes to the procurement arrangement beyond the introduction of the PPSD.

D. Social and Environment (including Safeguards)

21. *Social and Environmental Safeguards:* Parent PPCR project is classified as a category B-partial assessment program and is also applicable to the AF. Table xx below lists the policies triggered under the parent project and which are also applicable to the AF. This indicates that the potential negative impacts of the program are site-specific, are not irreversible, and can easily be corrected by appropriate mitigation measures. Both social and environmental compliance are rated satisfactory. The environmental and social risks are rated moderate. The proposed AF is not expected to result in foreseeable significant adverse environmental and social impacts; any possible effects are expected to remain temporary and local. It is expected that the same safeguard instruments will be maintained. If deemed necessary, before the start of any investment, a Simplified Environmental Impact Assessment (ESIA) will be carried out in accordance with the environmental and social approach adopted. Whether an update of the documents will be required will be determined during appraisal and appropriately managed.

Safeguard Policies Triggered by the Parent Project and applicable to the AF	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36		**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**

E. Results Framework

22. There is a strong convergence between the current components of the PPCR and the activities in the proposed AF. Because of this convergence, the AF will further strengthen reporting on the results framework for the parent project. The current parent project has indicators which speak to the five PPCR core indicators listed in the footnote below[6]. While the AF has no change its baseline, however the Results Framework will be reviewed during appraisal and updated to reflect indicators measuring the proposed AF activities. This will include revising some targets.

F. Gender

23. 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 youths, as well as other disadvantaged groups including the elderly, orphan headed households and those affected by HIV/AIDs or other illnesses and challenges. The parent project benefits from participatory adaptation grants measured with respect to incremental cash income and improved food security for direct beneficiary households disaggregated by gender indicated the parent project was meeting its target for gender and vulnerable people groups. To ensure sustainability of this process, specific approaches for wider coverage of these actions will 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 socio-economic status and well-being of all households in the targeted areas of the project.

24. Before implementation of major program activities, assessments/evaluations will be conducted to establish drivers and constraints affecting the adoption of particular interventions by gender

[6] 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 i.e. percentage of targeted wards and council assessed as having developed adaptive capacity. Composite indicator equivalent to PPCR core indicator **B. 1**
3. Target Beneficiaries I.e. 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 **B2**
5. Climate responsive financial instruments developed and tested. Equivalent to PPCR core indicator **B5**

and other social groupings. This will help to identify interventions that appeal to or are most relevant to different gender or social categories. A key initial strategy is to conduct trainings and sensitization meetings prior to implementing any intervention to ensure that all potential beneficiaries have access to the intervention and understand the respective roles and responsibilities of different stakeholders. During implementation, the project 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

25. 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/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit *www.inspectionpanel.org*.

I. SUMMARY TABLE OF CHANGES

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

II. DETAILED CHANGE(S)

PROJECT DEVELOPMENT OBJECTIVE

Current PDO

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 NationalProgram 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 ParticipatoryAdaptation, 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.

Proposed New PDO

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 and other regions.

RESULTS FRAMEWORK

Project Development Objective Indicators

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	11.90
Support to Participatory Adaptation	5.60	Revised	Support to Participatory Adaptation	7.90
Pilot Participatory Adaptation	20.80	Revised	Pilot Participatory Adaptation	30.80
TOTAL	**36.00**			**50.60**

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	30-Dec-2022	30-Apr-2023
TF-14588	Effective	31-Dec-2019	31-Dec-2019	30-Dec-2022	30-Apr-2023

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		
Overall	Moderate	Moderate

LEGAL COVENANTS – Additional Financing Power Project (P165442)

Sections and Description
No information available

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Zambia
Additional Financing for Zambia Strengthening Climate Resileince (PPCR Phase II) (P165442)

Project Development Objectives

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 national budgets		Number	0.00	0.00	ZCCN and MOF	Yellow Book (budget allocations) by Ministry and program	Annual
No Change	Increase in national budget allocations to climate resilient programmes for climate		Number	2,529,600.00	3,162,000.00			

	vulnerable sectors: amount approved							
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			
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	Baseline, Midterm and EOP ? Independent Evaluation Sub-Project Approval: M&E Team	Survey of Beneficiaries	Baseline, Mid-Term, Sub-Project Approval and EOP
No Change	Percentage of targeted councils assessed as		Percentage	0.00	70.00			

	having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)							
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			
No Change	Percentage of targeted community		Percentage	0.00	70.00			

	groups assessed as having developed incremental decision-making capacity and applied climate information to adapt to longer-term climate change and variability (%)							
Description: Composite indicator measuring (a) capacity gained; (b) application of information to decision making; (c) results vis-Ã -vis original targets								
No Change	**Name:** Canals with optimal average flows		Text	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	Technical Survey	Annual
No Change	Average flow velocity of targeted canal		Text	Engineering design and	Designed slope and cross			

	(m/s)			specification of canals in place before rehabilitation	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)		Number	0.60	0.48			
Description: Optimal flow from technical literature; actual flow from measurements during fixed months								
No Change	**Name:** Number of beneficiaries supported directly by the project to adapt to the effects of climate change		Number	0.00				
No Change	Number of direct beneficiaries (cumulative): total households		Number	0.00	22,800.00			
No Change	Number of direct		Number	0.00	11,000.00			

	beneficiaries (cumulative): women-headed household							
No Change	Number of direct beneficiaries (cumulative): other vulnerable households		Number	0.00	14,800.00			
No Change	Number of direct beneficiaries (cumulative): total number of people		Number	0.00	130,000.00			

Description:

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		Text	Interim National Climate Change	Council fully operational			

	climate resilience			Secretariat (INCCS) established	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			
Description: 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								
No Change	**Name:** Strengthened institutional and financial mechanisms to ensure climate resilience		Yes/No	No	Yes			
No Change	Canal operation and		Yes/No	No	Yes			

	maintenance (O&M) agreement adopted by provincial authority							
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			
Description:								
No Change	**Name:** Climate responsive financial instruments developed and tested		Number	0.00	2.00			
No Change	Number of climate risk financing		Number	0.00	2.00			

	instruments developed							
No Change	Number of climate risk financing instruments tested		Number	0.00	1.00			
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 awarness campaign designed and implemented		Text	No	Yes			
No Change	Two-way early warning system (EWS) established and operational in targeted districts		Text	SMS system piloted for hydro info, with limited coverage	70.00			

No Change	Open climate platform developed,operational and in use by key stakeholders		Text	No	Yes			
Description:								
No Change	**Name:** Climate resilience mainstreaming in local area planning		Number	24.00	24.00			
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards : district-level (IDPs)		Number	0.00	6.00			
No Change	Climate resilience considerations mainstreamed in local area plans of pilot districts and wards: ward-level (ADPs)18		Number	0.00	18.00			

No Change	Climate risk assessment completed for Barotse sub-basin, and incorporated into provincial-level planning		Number	0.00	1.00			
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 to ensure climate resilience		Text	No	Yes			
No Change	Provincial level agreement for optimal canal operation and maintenance (O&M) adopted and with BRE support		Text	No	Yes			
No Change	Local adaptation contingency fund established		Text	No	Yes			
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			
No Change	Number of sub-grants approved: ward-level		Number	0.00	72.00			
No Change	Number of sub-grants approved: community-level		Number	0.00	1,150.00			
No Change	Number of sub-grants approved : individual champion		Number	0.00	78.00			
No Change	Number of sub-grants approved: individual champion female		Number	0.00	23.00			
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			
No Change	Targeted priority and secindary/ancilliary canals rehabilitated and maintained		Number	0.00	220.00			
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			

No Change	Person-days of labor generated : women		Number	0.00	1,625.00			
Description:								
No Change	**Name:** Households considered very vulnerable in target districts		Percentage	0.00	50.00			
Description:								
No Change	**Name:** Household considered with diversification into alternative sources of livelihood income away from climate-sensitive activites/income sources		Number		2.00			
No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Female-headed HHs		Number	1.36	2.00			

No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Male-headed HHs		Number	1.57	2.00			
Description:								
No Change	**Name:** Physical assets in targetted dsitricts clasified as highly vulnerabile in targetted disctricts		Percentage	0.00	5.00			
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.								
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	O&M plan and design in place and adhered to.			

				past 20years				
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 20years	O&M plan and design in place and adhered to.			

Description:

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							0.00
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 specificatio							Designed slope and cross sections

		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							

No Change	Number of direct beneficiaries (cumulative): total households	0.00							22,800.00
No Change	Number of direct beneficiaries (cumulative): women-headed household	0.00							11,000.00
No Change	Number of direct beneficiaries (cumulative): other vulnerable households	0.00							14,800.00
No Change	Number of direct beneficiaries (cumulative): total number of people	0.00							130,000.00

Intermediate Results Indicators

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 provincial authority	No							Y
No Change	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 awarness campaign designed and implemented	No							Yes
No Change	Two-way early warning system (EWS) established and operational in targeted districts	SMS system piloted for hydro info, with limited coverage							70.00
No Change	Open climate platform developed,operational and in use by key stakeholders	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)18	0.00							18.00
No Change	Climate risk assessment completed for Barotse sub-basin, and incorporated into provincial-level planning	0.00							1.00
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 reliable canal water	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)	0.00							400.00
No Change	Targeted priority and secindary/ancilliary	0.00							220.00

	canals rehabilitated and maintained								
No Change	Incremental labor generated through cash-for-works	0.00							3,250.00
No Change	Person-days of labor generated	0.00							3,250.00
No Change	Person-days of labor generated : women	0.00							1,625.00
No Change	Households considered very vulnerable in target districts	0.00							50.00
No Change	Household considered with diversification into alternative sources of livelihood income away from climate-sensitive activites/income sources								2.00
No Change	Average number of alternative sources of livelihood income per sampled beneficiary household: Female-headed HHs	1.36							2.00
No Change	Average number of alternative sources of livelihood income per sampled beneficiary	1.57							2.00

	household: Male-headed HHs								
No Change	Physical assets in targetted dsitricts clasified as highly vulnerabile in targetted disctricts	0.00							5.00
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 operating at near optimum flow (inside and outside of project area)	No canal has any viable technical maintenance design nor has been rehabilitated or							O&M plan and design in place and adhered to.

		maintained in the past 20years							

ANNEX II

DETAILED PROJECT DESCRIPTION

Background and Context for the Project

1. The context for the parent project, the Zambia Strengthening Climate Resilience PPCR Phase II Project (P127254), is well articulated in the PAD with 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 are estimated to cost the country about 0.4% in annual economic growth. Taken as a whole, Zambia's vulnerability to climatic change is illustrated by the following statistics.

2. The 2016 UNDP Human Development Index ranks Zambia 139 out of 188 countries. 64.4% of the population lives below the poverty line of US$1.90 per day. Another 10-15% 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.

Zambia Population Statistics (source: 2016 UNDP Human Development Index)

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 (GDP), 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

3. **The Growing Reality of Climate Change:** Climate change is the greatest challenge of the 21st Century, perhaps unprecedented in the history of civilization. The facts presented above 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 without urgent and collective action. As an inter-dependent world, no country, however wealthy or powerful, will escape the impact of climate change. But 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.

4. 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.

5. Under the weight of population growth, demands are increasing for land, food, water, shelter, energy and other basic necessities, yet little is being done to care for the natural resource base – the source for these essential needs. 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. Based on the situation described above, additional financing (AF) in the amount of USD 14.6 million is proposed for implementing a pilot program to build upon, complement and support the three components of the Zambia Strengthening Climate Resilience PPCR Phase II Project (P127254):

(a) **Component 1: Strategic National Program Support**: The aim is 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.

(b) **Component 2: Support to Participatory Adaptation**: Strengthen the adaptive capacity of vulnerable rural communities in the Barotse sub-basin.

(c) **Component 3: Pilot Participatory Adaptation**: Provide 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.

7. The overall objective of the AF pilot is to scale up and diversify targeted outputs, outcomes and impacts through an innovative market-driven approach to engage the private sector in addressing the many inter-related challenges faced by smallholder farmers in the Barotse sub-basins, but with possibilities to include other regions of Zambia. These 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 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 linkages to input and output markets; and i) inadequate support services across all sectors, including health and education.

8. From an environmental perspective, Zambia's rapidly growing population is exerting greater 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 yields and soil fertility with alarming rates of environmental degradation. In neighboring Malawi where the agro-ecology and farming methods are similar, loss of topsoil averages 29 tons ha^{-1} per annum with up to 100 tons ha^{-1} on steep hillsides. Similar levels of soil loss occur in Zambia, and deforestation is now estimated at close to 1% per annum, which is among the highest on the continent. The main driver of deforestation is the increasing demand for firewood and charcoal for cooking by an estimated 90% of the population. A key element of the problem is

that most charcoal is made using extremely inefficient methods[7] with wood cut unsustainably from indigenous forests in rural areas.

9. Based on the increasing needs of a growing population, encroachment into Zambia's protected areas is becoming more common due to the scarcity of land combined with the low capacity of Government to enforce its policies. The attendant loss of biodiversity is accompanied by adverse changes in climatic and hydrological regimes with diminished stream flows, increased flooding and the siltation of rivers, dams, and lakes.

10. Despite enormous efforts and funds to promote production-increasing technologies over the last 4 decades, the challenges articulated above have intensified from failures: a) to fully engage communities as active participants in identifying interventions aligned with their priorities, resources and capabilities (i.e., understanding the local cultural, social, economic and ecological context under which a technology is expected to function), b) to empower people with the knowledge, skills and resources to adopt and sustain improved practices, and c) ***to attract the immense potential of 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.

1.1 Project Structure

11. In line with the Zambia Strategic Country Diagnostic (SCD) (P158874) of September, 2017, which is currently at the decision stage, the proposed AF pilot program will implement an innovative market-driven value chain approach with engagement of the private sector to transform vulnerable smallholder livelihoods into resilient prosperous enterprises.

12. Under the proposed AF structure, modification of the Project Development Objectives is suggested to expand the geographic coverage of the project to include other areas where prospects for impact are high. The proposed revision of the PDO is "***to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin and other regions***." To achieve the intended results, 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 is included later for review during the appraisal process to capture the increased scale of outputs and outcomes generated by the AF pilot program.

[7] The conversion rate of wood to charcoal using prevailing methods is 10 tons of wood to make 1 ton of charcoal.

13. Three activities will be undertaken under the proposed AF pilot project aligned with Components 1, 2 and 3 of the parent project:

(a) **Activity 1:** *Strengthen the capacity of the private sector to build climate resilience in agri-business, establish access to markets and value chains, water resources and natural capital use/ management.* Proposed activities have strong links to all 3 Components, and will use models and platforms developed by the climate risk facilitating teams (CRAFTs) to support the project's market-driven approach in promoting climate smart practices for increasing farm productivity and resilience to sustain livelihoods.

(b) **Activity 2:** *Provide incentive payments and small grants to support livelihood diversification, e.g. farming, fisheries, etc.* The aim is to transform smallholder producers from livelihoods dependent on subsistence to prosperous enterprises that are resilient and sustainable. Prime examples are provided below:

- Increased farm productivity and diversification using climate smart and other sustainable practices, including access to CA rippers or ripping services from the private sector;
- Local multiplication of improved crop seed by groups of farmers for sale to other farmers;
- Irrigation with high value / nutritious crops for consumption and sale to improve food security, diets and incomes with resilience against low yields under rainfed farming;
- integration of small livestock into the farming system to increase incomes and animal protein in the diet and to offset risks of crop failures from drought or floods;
- Development of small enterprises with organized farmer groups, coops or associations that are linked to buyers and processors to produce, process and sell natural resource high quality products such as honey and sustainable charcoal.

These activities will be linked to Component 2, which will include exploring practical means to incentivize and deliver finance and other support to smallholder farmers to adopt improved practices and enterprises.

(c) **Activity 3:** *Develop a platform to facilitate the dissemination of market and climate information to farmers*.

The aim of this activity is to engage the private sector to participate in disseminating information to smallholder farmers / producers on climate smart practices, markets, commodity prices and weather forecasts. Activities here will be linked to Component 1 to leverage interest and support from the private sector.

Detailed Activity Description

2.1 Activity 1: Strengthen the capacity of the private sector to build climate resilience in agri-business, establish access markets and value chains, water resources and natural capital use/ management

2.1.1 Activity 1 Background

Rationale for Private Involvement

14. The International Development Agency (IDA) is providing an additional financing in an amount of US$14.6 million i.e. (US$ 1.1 million in grant; US$ 13.5 million in concessional loan) to the Zambia PPCR, Phase II. The proposed Additional Financing to the Project (P127254) aims to scale up and expand the scope of activities funded by Zambia PPCR Phase II, mainly in terms of resilience, productivity-enhancing agricultural and natural resource investments through micro-projects.

15. The project has demonstrated a successful model for implementing climate adaptation measures. The progress towards achievement of the Project Development Objective (PDO) has remained Satisfactory since implementation commenced. In addition, good progress has been made towards achieving the objectives of the all three components of the project, namely: a) Component 1: Strategic National Program Support; b) Component 2 Support to Participatory adaptation and Component 3 Pilot Participatory Adaptation).

16. Despite progress made so far, much needs to be done to catalyze private sector investment in building climate resilience of rural farmers which would lead to the country's sustainable economic growth. In view of this need, part of the AF funds would be utilized to support private sector involvement in implementing climate resilient technologies and farming practices that improve yields and sustain livelihoods. Engagement of the private sector will be done based on the current climate risk facilitating teams (CRAFTs) model and existing capacity building platform.

17. Involvement of the private sector under the AF mechanism will follow a market driven and value chain approach to stimulate and sustain growth. It will respond to the needs of smallholder farmers to build their resilience through climate adaptation measures while benefitting private business by increasing sales of their goods and services. The AF provides an opportunity for the private sector to contribute towards scaling up and achieving additional results from new and current well-performing projects, including to the larger extent possible, increased agricultural productivity, along with the possibility diversified sources of income, increased livelihood and reduction in malnutrition. It provides a platform to "catalyze" the private sector engagement for sustained benefits at scale. The investments from the proposed

AF led by The World Bank will target private sector support to the priority sub-basin of Barotse and other regions of Zambia.

Constraints to Private Sector Investment in Climate Resilient Interventions

18. Private sector involvement in climate resilience in Zambia is constrained by many factors. According to a study by IFC: Price Waterhouse & Coopers (pwc, 2013)[8], some of the critical factors that have impeded private sector engagement in climate resilient interventions include:

- Weak Government policy and regulatory frameworks to create stronger incentives for private investment – e.g., underpricing of and lighter punishments for illegal extraction of natural resource based products; 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.

- The study found that doing business in Zambia is seen to be slow, bureaucratic and with processes and regulations that hinder rather than encourage enterprise.

- 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 of the land. 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.

- 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 to strengthen climate resilience can alter investment risk perception.

- Uncertainties about the return to investments, inadequate access to finance or capital and risk aversion can impede the ability or interest of private sector entities to invest in climate resilience.

Opportunities for Private Sector Investment in Climate Resilience:

[8] IFC: Pilot Program for Climate Resilience (PPCR) – Private Sector Support to Climate Resilience in Zambia – Price Waterhouse & Coopers, 2014

19. Despite the barriers highlighted above, there are many opportunities that could attract private sector investment in climate resilience. The following are some key success factors that could spur private sector investment in climate resilience (Note: 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% of market share).
- Increasing demand for products, goods and services that reduce the carbon footprint of companies.
- Provision of platform for private sector growth by improving the income base of smallholder farmers 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 but 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 (DRC) – a significant proportion of current exports are informal transactions, which are not accounted for, which suggests the market opportunity may be underestimated.
- Smallholder farmers 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 farming families – assisting them to move from subsistence to higher value farming.
- Opportunity for suppliers, aggregators and off-takers to increase volumes of commercial activity – if able to link effectively with the smallholder farmers. The technical assistance required to link farmers 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 farmers and aggregation of produce by off-takers would upgrade smallholder farmers' role on the value chains.

2.1.2 Activity 1 Scope and Objectives

20. The objective of Activity 1 is to increase private sector involvement in the provision of goods and services to smallholder farmers for the purpose of building climate resilience in the sub-

basin of Barotse and other regions of Zambia. In achieving this objective, it is envisaged that private sector will benefit through increased revenue from sales of agro and natural resource based products locally and regionally under win-win partnerships with smallholder producers. On the other hand, smallholder producers will benefit through reliable markets of their produce while managing their natural resource base sustainably.

21. The approach of the proposed investment is to provide support towards investments in improved climate resilient technologies through funding for technical cooperation activities, offering incentive payments and small grants to private or market-led businesses, farming households and producer groups. The overall strategy is to build a nation-wide network of public, non-state 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, with the aim to build climate resilience in the sub-basins and other regions by mobilizing/catalyzing private sector investments in economic sectors such as agriculture and natural capital.

22. A thorough due diligence of shortlisted private sector entities will be done to establish the scope and scale of support. Support towards private sector involvement in the proposed project will be based on the following criteria:

- The extent to which the private sector entity is expected to contribute, directly or indirectly, to improved incomes, livelihoods and opportunities for smallholder farmers.
- The number of beneficiaries that the entity or its intervention will aim to target.
- Demonstrable strategies level of confidence in the sustainability of the investment or intervention (or its impact), once the AF grant has been utilized.
- The likely opportunities for replicating the investment across different geographies of Zambia.
- Degree of innovation contained in the investment idea or its approach.
- Good reputation and track record of the organization in working with smallholder farmers or other stakeholders/beneficiaries.
- The level of understanding (by the applicant) of the risks of the project, and measures proposed to manage these risks.

Priority Areas for Intervention by the Private Sector:

23. Key priority areas to be considered for private sector involvement are as follows:

- Value added processing and marketing – soya, sunflower, rice, fish feed, honey through cooperatives, commercial farmers or private firms linked to smallholder producers through small grants in the form of processing equipment or technical cooperation. The IFC: Price Waterhouse & Coopers study found high potential in and interest by companies to engage in this type of venture.

- Commercial seed multiplication systems – provision of a one-off grant or technical support to create a base for commercialization of key crop seed multiplication, mainly legumes or improved breeds of local chickens and goats. The strategy is to create structures and systems for local multiplication of crop seed or selection of improved small livestock for sale to farmers which would minimize prices while enhancing sustainability.

- Input/equipment suppliers/agro-dealers – support in the form of grants or technical support to private organizations to supply inputs or equipment e.g., solar equipment for lighting, charging, irrigation; seed, fertilizers, CSA equipment for smallholder farmers such as small tractors, rippers, planters. The approach would also include support by private sector to provide services in terms of demonstrations of best bet Climate Smart Agriculture practices in strategic locations for visibility and exposure.

- Information dissemination on weather, markets, pest/disease outbreak, extension messages on climate smart practices – CA, AF, FMNR, irrigation, crop diversification, small livestock and fish farming. Dissemination would be through mobile phone platforms with mobile network providers (text/voice mail messages depending on capabilities); videos tailor-made to local contexts; radio, television. For radio, the project will strive to develop the capacity of rural radio networks. Furthermore, the project will facilitate strong linkages between the different dissemination platforms to harmonize message content and minimize duplication or overlap.

- Research & Development on charcoal production and use of high grade stoves – technical assistance and small grants to small scale producers in planting suitable tree species that could be used in sustainable production of quality charcoal. Efficient systems of charcoal production have been developed such as those in Brazil which can be piloted replicated under the AF funding. Furthermore, the project will promote the use of first grade with high thermal efficiency charcoal stoves that have been tested in Uganda and other countries.

Actions Needed to Implement Activity 1

24. Carry out a stakeholder engagement to map out potential private sector partners in climate resilience including advertising in the local media about the opportunity and further organizing one-one meetings with those interested. The objective is to ensure full understanding of the facility and buy-in by private sector, Govt entities and targeted farmers

25. Identify and carry out a due diligence assessment of smallholder producer groups that would partner with private sector in climate resilience

26. Set a special service entity (along the lines of innovation challenge funds administrators) that would manage the involvement of private sector investment in climate resilience under the project with core responsibilities of:

- marketing of the component to get the right parties to be involved
- preparing templates for writing concept notes and detailed full business plans to achieve fair competition and consistency
- brainstorming with prospective business partners to achieve creativity and innovation (private investment should be seen not as just about making too much profit but how to build resilience for sustained company growth)
- screening and selecting prospective business partners
- regular monitoring of milestones and ensuring reimbursements for expenditure on matching funds are based on fulfilling of each agreed milestone

27. Carry out a mid-term review end of project evaluation to draw lessons from the scaling up

2.2 Activity 2: Provide incentive payments and small grants to support livelihood diversification, e.g. farming, fisheries, etc.

28. The aim is to transform smallholder producers from livelihoods dependent on subsistence to prosperous enterprises that are resilient and sustainable.

2.2.1 Activity 2 Background

29. Smallholder farmers 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 crop failure, live in better houses, and earn money to meet basic needs and more. The reality today is that rural households face many inter-related challenges, many of which were highlighted earlier.

2.2.2 Activity 2 Scope and Objectives

30. In response to the challenges articulated above, and in support of the objectives and achievements to date of the parent PPCR project, the AF pilot project will undertake a transformative market-driven approach with communities and the private sector to increase the productivity, profitability and climate resilience of smallholder producers and farmers. This will be achieved through the integration of the two thematic areas to create synergies for increasing impacts, resilience and sustainability.

31. The AF pilot project will focus on two Thematic Areas:
(a) Increased Farm Productivity, Diversification and Incomes
(b) Strengthened Climate Resilience of Smallholder Farming Systems.

32. **Thematic Area 1**: The primary aim is to increase the production and marketing of high yielding, nutrient dense varieties of legumes (soya, groundnuts, beans, pigeon peas, cowpeas), orange fleshed sweet potatoes and rice where grown under climate smart agricultural (CSA) practices and farm diversification with a focus on CA, agroforestry, farmer managed natural regeneration, intercropping, double-up legume systems and small livestock production. Within this context, attention will focus on organizing farmers into special interest groups or coops with strong and transparent governance / leadership structures to strengthen analytical capabilities for problem solving, decision-making, fair treatment and responsive action to opportunities. A parallel function will be to establish strong linkages to the private sector to access inputs and information on improved practices, superior crop varieties, markets, commodity prices and weather projections. A key element will be to promote incentives among smallholder by linking new practices to increased production and conservation with increase access to inputs and markets to increase incomes.

Key smallholder challenges to be addressed under thematic area 1 are outlined below:

- Livelihoods dependent on unsustainable, subsistence farming due to limited knowledge and opportunities to change attitudes that enable the transition to farming as a business.
- Declining crop yields and soil fertility from over cultivation with a low diversity of crops and few inputs.
- Poor nutrition due to high intake of carbohydrates dominated by cereals/cassava with low consumption of animal protein.
- Increased vulnerability to climate change from lack of knowledge and support to adopt CSA practices for increasing and stabilizing crop yields to reduce the risks.

- Limited access to capital, credit, inputs and markets from poor organization and support to produce, process and sell produce in high demand by markets.

33. Key objectives under Thematic Area 1 to address the above challenges:

(a) Promote climate smart agricultural practices (CSA) with a focus on CA, farmer-managed natural regeneration (FMNR[9]), agroforestry, organic manures, intercropping and double-up legume systems to produce higher and more stable yields under variable rainfall with lower labor and input costs, while reducing from runoff, erosion and soil degradation.

(b) Diversify crops with improved varieties of priority crops suited to the local farming system and agro-ecology with emphasis on varieties of rice, sunflower, soya, groundnuts, beans, pigeon peas, cowpeas and orange fleshed sweet potatoes that are high yielding and resistant to pests, diseases and drought.

(c) Provide opportunities for households to undertake low-cost irrigation during the winter/dry season to grow nutritious or high value food and cash crops to increase food security, household nutrition and incomes based on strong market demands. Potential irrigation systems include stream diversion, treadle pumps and solar irrigation.

(d) Support local groups of entrepreneurial-minded farmers to multiply basic seed of priority crops for sale at affordable prices to other farmers. This will entail establishing strong links to seed companies to secure new seed for multiplication every year.

(e) Promote small livestock under a pass-on system to increase incomes and animal protein in the diet with a focus on goats and poultry, which provide quick returns from rapid growth and reproduction. Livestock also increase resilience to adverse weather conditions by offsetting the risks of crop failures from droughts or floods and the need to engage in illegal hunting for bush meat.

(f) Support the production and sale of agricultural and natural products (including honey, fish and sustainable high quality charcoal) by producer organizations and cooperatives with conservation incentives through new and existing marketing structures.

Note on charcoal: The aim is to improve the whole charcoal value chain given the inefficient methods used locally and throughout Zambia for making charcoal, the use of unsustainable wood cut from natural forests and the use of inefficient charcoal stoves by the consumer. From the supply side, the program will start with identifying groups of producers a) to plant selected fast-growing tree species that produce high quality charcoal (e.g., species of *Eucalyptus* and *Albizia*, and b) to construct extremely efficient kilns based on technology in Brazil that cuts the conversion ratio of wood to charcoal from 10:1 to 3:1. The final pieces of the value chain include linking quality charcoal producers with the private sector and market, and promoting the most efficient charcoal stoves available on the global market for use by Zambian consumers.

[9] 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.

(g) Strengthen formation of farmer organizations for collective marketing to reduce costs and increases prices with links to key market actors in the private sector.

(h) Provide support to access the Warehouse Receipt System for access to collateral finance, secure storage, and sales of produce at optimal prices.

(i) Support increased agro-processing of rice, sunflower, groundnuts, soybeans and OFSP to increase demands in the market in these value chains with higher returns to farmers.

(j) Facilitate linkages between commercial farmers, traders, agro-processors, commodity exchanges and smallholders to support production and sale of high-quality produce at higher prices.

(k) Strengthen the range of services to farmers, primarily through cooperative-led initiatives linked to the private sector, to increase adoption of climate smart / sustainable practices, with bonus benefits, dividends and/or higher prices for producing quality produce.

(l) Establish cooperative depots and communication requirements for improved logistics for a cost-efficient bulking and trading of farmer commodities to promote market incentives in line with the CCP.

34. Thematic Area 2: The focus is to strengthen community and household resilience to climate change by building capacity for adaptation and risk mitigation through activities to improve the management and use of natural resources at the farm, household and landscape levels:

35. Key objectives under Thematic Area 2:

1. Plant trees and bamboos around homesteads, farms, villages, streambanks and hillsides.

2. Promote sustainable management of woodlands through natural regeneration on individual and communal lands.

3. Introduce fuel-efficient cook-stoves with well-ventilated kitchens a) to reduce wood use and deforestation around the village environment, and b) to reduce the labor, time, and health hazards form collecting and using wood for cooking on open smoky fires.

4. Develop and strengthen participatory governance structures to improve the conservation and economic use of resources in and around protected areas.

36. The results will reduce environmental degradation and deforestation, while increasing stream flows, ground water supplies and access to wood and other natural resources. These interventions will complement activities and objectives under thematic area 1 to secure the sustainable management, conservation and biodiversity of protected areas over the long-term.

The synergies between activities under thematic areas 1 and 2 will provide the basis for transforming vulnerable livelihoods into prosperous enterprises that are resilient and sustainable. This in turn will create demands to scale up adoption of climate smart practices and to increase the engagement of the private sector and markets to spur expansion and growth., which will create demands for expansion and growth.

2.3 Activity 3: Developing a platform to facilitate the dissemination of market, and climate information to farmers

2.3.1 Activity 3 Background

37. The activity will be implemented in support of fulfilling the overall objective of Component 1 (Strategic National Program Support) of the PPCR project in Zambia. The objective of Component 1 is to strengthen national institutional and financial framework for climate resilience, thus providing the basis for long-term transformational change in Zambia and helping support the secretariat's umbrella role in overseeing and monitoring the national program (and in particular, SPCR). The strengthened framework and public awareness will in turn contribute to more effective mainstreaming of climate resilience into vulnerable economic sectors, and allow lessons learned from the field to be progressively scale up.

38. One of the subcomponents of Component 1 that will be supported by the proposed activity III under the AF funding is "*strengthened climate information*" which focuses on providing more reliable, accessible and timely early warming and climate information to users at different points of the value chains ranging from decision makers, implementing agencies to smallholder farmers and the general public. Specifically, the component addresses 3 objectives as follows: a) Social Marketing Awareness Campaigns; b) A Strengthened Early Warning System; and c) Development of an Open Data Platform, to facilitate the sharing of hydro-meteorological, geospatial, and climate vulnerability and risk assessments amongst decision makers.

39. During the current Phase II of PPCR, good progress has been made towards realization of the objectives of sub-component 1.2: strengthened climate information of Component 1. The major achievement has been the development of a national climate change communication strategy, including an Open Data for Resilience Initiative (OpenDRI) system to help strengthen early warning and climate information services to end users. Through the program, Zambia has demonstrated leadership both regionally and internationally in knowledge management and shared learning to other PPCR countries.

40. While good progress has been made under subcomponent 1.2 of Component 1, the AF project recognizes the need to develop a platform for the dissemination of market and climate information to farmers. This will entail consolidating and scaling up successful project

activities, in this particular case, Component 1, sub-component 1.2 with a focus on engaging and including the private sector.

41. Development of a platform for climate information dissemination is constrained by a few factors as follows: a) increased variability of weather patterns placing a huge constraint on farmers' ability to make strategic decisions on their farm business plans. The same is true for commodity market price volatility; b) lack of access to and poor understanding of information on both climate and markets can lead to farmers making wrong decisions; c) too many service providers most of who are not well coordinated and sometimes providing information that is contradictory, unscientific, inaccurate or outdated.

42. Despite the challenges, there is a huge potential to develop a one-stop platform to facilitate the dissemination of market and climate information to farmers across the sub-basin of Barotse and other regions of Zambia.

2.3.2 Activity 3 Scope and Objectives

43. The main objective of Activity III is to provide credible and time bound weather and market information specifically to farmers but also to the general public for informed decision making about their farming business operations. The information can be in the form of agro-meteorology showing trends in rainfall or temperature in given agro-ecological zones or forecasts about future trends in rainfall including possibilities of floods or drought. It could also show historical market price trends or current prices by commodity and location. All these are key in helping famers to make better choices about the type of crop to grow in a given season but also for private sector to decide how to reposition their businesses in response to the projected weather and market trends.

Supply side of information dissemination

44. In order to mainstream information dissemination to farmers and other users, it is imperative to develop a one-stop platform that will coordinate message development, uploading on to a mobile or other system and sharing with farmers. The structure should be developed along the following lines:

- **National Content Development Committee (or can be a center for excellence):** this will involve setting up a national content development committee similar to ones set up in neighboring countries such as Malawi or strengthening a structure that is already in existence. The committee's responsibilities would include but not limited to, reviewing, harmonizing and pre-testing messages on weather, markets but also CSA, pests/disease outbreak and any other subject matters deemed relevant in promoting climate resilience. The committee could include representation from the Ministry of Agriculture, Ministry of Livestock and Fisheries, Department of Meteorology, CSOs

implementing CSA, academia, private sector entities. To minimize bureaucracy, the secretariat could be placed in a department within a ministry or a CSO/NGO promoting CSA. The committee should generate messages based on the needs of or contexts within which farmers operate. Some of the messages could be demanded by farmers themselves.

The type of language used is of utmost significance. While there could always be someone (a neighbor or progressive farmer) who can assist other farmers in interpreting SMS messages if presented in English or other languages, it is always important to use languages applicable to specific locations. A study on Private Sector Support to Climate Resilience in Zambia – Mobile Phone Platform for Disseminating Information to Smallholder Farmers (ECI*Africa*/DAI, 2012[10]) recommended that a dissemination platform should allow farmers to indicate their preferred languages for information exchange. Otherwise, it may take much longer for the message to reach farmers which may render it valueless or obsolete.

- **Uploading messages on mobile platform:** The project would engage an organization specialized in converting messages (which should be farmer-friendly in terms of access interpretation and application) and uploading them on mobile platforms. In addition to this, the project should also explore setting up an App-based portal to disseminate climate and market information to farmers. 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 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 service provider:** Part of the AF funds will be used to kick start the activity through a PPP arrangement in which one or more mobile service providers will be engaged in the transmission of weather, market and other CSA-related messages to farmers and the general public. The service provider's responsibility is to share information to farmers via SMS/voicemail messages, video clips using a specially designated portal. The service provider benefits 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.

There is high potential for the service given the number of mobile subscribers across Zambia, estimated at 64.5% penetration rate in 2012 (ECI*Africa*/DAI, 2012).

[10] IFC Private Sector Support to Climate Resilience in Zambia: Mobile Phone Platform for Disseminating Information to Smallholder Farmers. ECI*Africa*/DAI, 2012

- **Uploading other CSA information:** It is envisaged that the platform will be used to further upload other CSA-related information for the benefit of farmers. These will include SMS/voicemail messages and video clips on CA, AF, FMR, crop diversification, irrigation, aquaculture, small livestock, pest/disease outbreak, etc.

- **Use of other communication channels:** Radio remains one of the most important channels for sharing information with farmers and it can also be interactive through phone-in programs. Its penetration to the rural areas through a network of community radio stations makes it extremely cost effective to deliver information to farmers. There has to be a strong link between radio and mobile phones that should be harnessed making sure messages disseminated through both channels are consistent and user-friendly. Television will also be used to target messages at policy makers, extension officers and farmers.

Demand side of information dissemination

45. Access to weather, market and CSA-related information, its interpretation and application depends on the way it is packaged to farmers. Farmers are always conscious of the specificity (crop/livestock, time and location specific), credibility (accuracy, consistency) and simplicity (easy to decipher) of the message received. While the majority of farmers are able to interpret SMS, messages depending on the degree of literacy, there are still some who may not understand the content of the message. Related to this, 60% of farmers interviewed indicated that they prefer receiving SMS than voicemail messages, primarily because it is cheaper or it leaves a record (ECI*Africa*/DAI, 2012).

46. Given that SMS messaging maybe the preferred way of sharing information and that a good percentage of farmers may not be able to interpret, a progressive/lead farmer or Community-based Business service provider could assist in deciphering of information for the benefit of others. SMS messages could also be shared through Farmer Field/Business Schools which may also benefit those with no access to handsets.

Actions needed to implement the plans

47. To implement the above plans, the following actions will be taken:

- Conduct a thorough stakeholder analysis to establish the capacity, deficiency, content and audience of existing platforms including language preference by farmers to receive information and formulate mechanisms for harmonization or leverage

- Evaluate how the proposed National Content Development Committee can be integrated within existing structures and identify its composition

- Development of a schedule for message formulation, customization, uploading and dissemination
- Procure the services of an entity for uploading farmer-friendly message and a develop a PPP mechanism for engaging a mobile network service provider
- Develop a simple leaflet that highlights how farmers can make full use of the platform