AFB/PPRC.36/Inf.5
15 September 2025

Adaptation Fund Board
Project and Programme Review Committee
Thirty-sixth Meeting
Bonn, Germany, 7-8 October 2025

PROPOSAL FOR ZAMBIA

ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY:

Country/Region: Zambia
Project Title: Climate Change Adaptation of Livelihoods through Rural Finance (CALRF)
Thematic Focal Area: Agriculture
Implementing Entity: International Fund for Agricultural Development (IFAD)
Executing Entities: Ministry of Green Economy and Environment
AF Project ID: AF00000280
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** 12,655,103
Reviewer and contact person: Marcus Johannesson **Co-reviewer(s):**
IE Contact Person: Paxina Chileshe-Toe

Technical Summary	The project "Climate Change Adaptation of Livelihoods through Rural Finance (CALRF)" aims to build and enhance resilience and adaptive capacities of 43,400 people (8,680 households) to cope with extreme weather events through institutional strengthening and promoting diversified, resilient and sustainable community livelihood options. This will be done through the three components below: Component 1: Building and promoting equitably diversified, resilient and sustainable community livelihood options (USD 1,574,900); Component 2: Innovative local financing systems to build community adaptive capacities in climate sensitive sectors (USD 6,529,100); Component 3: Enhancing district-level planning, awareness-raising and knowledge management for evidence-based resilience and adaptive capacity building (USD 454,000). Requested financing overview: Project/Programme Execution Cost: USD 1,105,691 Total Project/Programme Cost: USD 11,663,691 Implementing Fee: USD 991,412 Financing Requested: USD 12,655,103

	The initial technical review raised several issues, such as the need to recognize the use of unidentified sub-projects (USPs), to provide more information on the blended finance facility and to justify the full cost of adaptation reasoning, as was discussed in a number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review found that the proposal has not addressed most of the CR and CAR requests. The substantive changes to the proposal have led to additional concerns regarding maladaptation, technical soundness of the interventions, not-justified use of USPs, among others, as is reflected in a number of additional CRs and CARs raised in the review. The third technical review finds that the substantive changes to the proposal have mostly been reversed. The proposal has not addressed most of the CR and CAR. The likelihood of maladaptation has not been addressed, and the review has identified additional concerns regarding ESP and GP compliance and the implementation/execution arrangements. The fourth technical review finds that several of the outstanding CRs and CARs from the third review has been addressed. Still some issues remain in relation to the need to have more detailed-out activities and more clearly illustrate the gender mainstreaming in these, lack of clarity regarding how the proposal is addressing the ESPs, absence of core indicator and AF aligned disbursement schedule and some other minor issues. Fifth technical review finds that most of the outstanding CRs and CARs from the third review have been addressed. Still some issues remain in relation to the ESP principles, the core indicator table and the allocation of costs for MTR and Terminal Evaluation.
Date:	25 August 2025

Review Criteria	**Questions**	**Third Technical Review Comments (13 Sept 2024)**	**Fourth Technical Review Comments (21 February 2025)**	**Fifth Technical Review Comments (25 August 2025**
Country Eligibility	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	-	-	-
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	-	-	-
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**CR 5: Not cleared.** The new Endorsement letter dated 8 August 2024 mentions the three ministries listed on the cover page of the proposal as executing entities. The table under section III.A on	**CR5: Cleared** **T**he Ministry of Green Economy and Environment (MGEE) the executing entity as per Endorsement	-

Review Criteria	Questions	Third Technical Review Comments (13 Sept 2024)	Fourth Technical Review Comments (21 February 2025)	Fifth Technical Review Comments (25 August 2025
		implementation arrangements, however, states that two of these will have "no direct execution role in project activities" (p. 90). Paragraph 303 states that a PMU "will be established under the Ministry of Finance and National Planning (MFNP) for fiduciary reasons though the project will be anchored within the Ministry of Agriculture for operational aspects", with support from three other ministries and the Bank of Zambia. **CR 12:** Please provide a justification for this implementation/execution arrangement and clarify the fiduciary reasons for establishing the PMU at a ministry that is otherwise not involved in the execution of the project, and how this is an effective arrangement.	Letter of 26 December 2024). **CR12: Cleared.** The PMU is now to be situated within the MGEE which is the executing entity.	
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**No.** The proposal consists of 119 pages, with 68 pages of annexes. **CAR 8:** Please revise the proposal to comply with the page limitations.	**CAR8: Cleared.** Proposal is revised and complies with page limitations.	-
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Partially, but will likely also lead to maladaptation.** **CAR1: Not cleared.** The proposal now acknowledges the use of USPs. However, its designation of project activities as USPs is unclear ("activities related to use of land") and appears incomplete. **CAR1bis: Not cleared.** None of the findings regarding the mango processing and the fisheries/aquaculture and fish value	**CAR1: Not Cleared** On p. 88 para 13 it is still stated that "Some of the activities related to land restoration under component 1, access to innovative local financing systems under component 2 need additional screening to ensure compliance with the AF ESP standards.".	**CAR1: Cleared.** The mention of land restoration is now clarified to be related to the establishment of demonstration plots as proposed under activity 1.3.1.

Review Criteria	Questions	Third Technical Review Comments (13 Sept 2024)	Fourth Technical Review Comments (21 February 2025)	Fifth Technical Review Comments (25 August 2025
		chain component and the high likelihood of maladaptation have been addressed. In addition to the second review findings, the financing component that has been brought back could exacerbate the risk of maladaptation in two more ways: (i) it could create perverse incentives by creating additional drivers for current overfishing, and (ii) the feasibility of the pond-based aquaculture as envisaged for the fishing communities is not demonstrated, and likely unable to compete with wild-caught fish.	Please clarify what is meant by "land restoration" since the project has USPs in various themes. **CAR1bis: Cleared** A Grant Facility has been proposed that entails more sustainable elements to promote fisheries and aqua culture which more clearly reduce the risk of maladaptation. See Output 2.1, p. 22 When it comes to the horticulture theme of the project including fruit, the project proposes smaller cost-efficient solutions for refinement and processing which seems feasible, as well as ways to secure sustainable logistics options. **CR16 (New)** 1. Description of the activities under PART II: Project Justification starting from page 18 are not detailed enough. This refers to activity: 1.1.1, 1.1.2, 1.2.1,	**CR16 (New) Not Cleared.** The activities under PART II: Project Justification have now been better elaborated, which is also reflected in the results framework. The GAP has been updated and now also links well with gender responsive considerations under the activities and the proposal's results framework. A clarification of the need for cross points is now included under activity 1.4.1. However, additional information is needed. Please clarify the following: 1. At paragraph 91, "seeing consent of Ministry of water …". How will the risk of a lack of consent impact the proposed project and this activity which represents a significant amount of resources. Please provide evidence that the

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			1.2.2, 1.3.1, 2.1.2, 3.1.1, and 3.1.2. Please, elaborate more clearly <u>how</u> the activities will promote the necessary changes among <u>whom</u> and through <u>what measures</u> to contribute to the achievement of the proposed Outputs. 2. In para 118 (row five in the table) it is stated that the project plans "to repair 5 critical crossing points to facilitate market linkages between producer groups and buyers. ii) support local level processing and marketing (branding and labelling) of selected crop products …" etc. There is no information about this in the activity's description. Please clarify and revise. 3. Overall, the presentation of activities under Part II: Project Justification is	appropriate agencies have provided approval for this activity. 2. Relatedly this risk is also addressed in the ESMP Annex 2 as well as the captured in the Risk section of the proposal, please address. 3. At paragraph 134 please address sustainability of the culverts particularly from a maintenance standpoint. **CR17 (New): Cleared.** A technical advisory group (TAG) No longer applicable since the proposal has revised its structure.

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			lacking reference to the GAP. Please check and revise. **CR17 (new)** A Technical Advisory Group (TAG) is mentioned in the proposal but no description of its role and composition and where it will be situation in the project organization. Please clarify. **CR18 (new)** Almost no tables or figures in the proposal have numbering which makes referencing difficult. Please revise. **CR19 (new)** The results framework does not have an indicator referring to the technical guidelines to be generated. This product appears to be central to the project. Please clarify or amend as necessary.	**CR18 (New): Cleared.** Table and figure numbering and captions have been provided throughout the document. **CR19 (New): Cleared.** Page The results framework has been updated and now specifies technical training manuals developed or updated in selected value chains.

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	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** Please see the findings on the likelihood of maladaptation under point 3 above. **CAR2 (4): Cleared.** As per the modified component 2 and the additions to section II.B.	**Yes.** Please see response to CAR1bis above where more sustainable practices and subsequent benefits are promoted. Also, the financing element is moved back into the project in terms of a Grant Facility which complement the work under Component 1. **CAR2: Cleared.** As per amendment to See Output 2.1, p. 22.	-
	5. Is the project / programme cost effective?	**Yes.** **CR 6: Cleared.** As per the revised section II.C and component 2. Please also see the findings on the likelihood of maladaptation under point 3 above.	-	-
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation	**Yes.** **CR 7: Cleared.** As per the additions in section II.D.	**CR7 (re-opened)-** While several strategies, plans and policies are referred to and listed, a reference to how they relate to the proposal is	**CR7: Cleared.** Under Section D (Part II Project Justification), the project's consistence and alignment with national and sub-national development have been detailed out in a commendable manner.

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	programs of action and other relevant instruments?		lacking. This would be particularly interesting for the NAP, NDC and NSDS (i.e. SDGs strategies) but also other sectoral references relevant to the proposal. Please clarify and revise.	
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**No.** **CR 3: Not cleared.** The reintroduction of the original component 2 has made the initial clarification request pertinent again. The information provided on generic financial management at project level does not include information on any financial standards or regulations that the project needs to comply with in the implementation of activities under component 2. A reference to the Food Safety Act, 2019 has been added. However, the proposal does not describe what the implications are for the project, nor how it will ensure these standards will be complied with. The references to strategies, policies and the project safeguards are out of place in this section of the proposal.	**CR3: Cleared** The proposal has sufficiently updated section E as requested.	-
	8. Is there duplication of project / programme with other funding sources?	**Unclear.** As per the revised component 2 and section II.F. **CAR 3: Not cleared.** The revised proposal still makes no mentioning of the three aquaculture projects.	**No.** The project has now stated how duplications will be avoided. **CAR3: Cleared.** The proposal has acknowledged and taken note of recent	-

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			efforts of other internationally funded initiatives through the Department of Fisheries, and how the lessons learned will be drawn from these including the three aquaculture projects previously mentioned under the 3rd technical review. See Section F, para 91-94, p. 35-38	
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** **CR 8: Cleared.** The updated component 2 has rendered the learning and knowledge management component relevant again.	-	-
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** **CR 9: Cleared.** As per the updated section II.H, and the updated component 2.	**-**	**-**
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Unclear.** **CR 4: Not cleared.** The proposal states now that no co-financing is considered for the implementation of the project. It does not, however, demonstrate that the full cost of adaptation is met by the requested financing.	**CR4: Not cleared** The proposal has not concluded that it is aligned with the Fund's Full Cost of Adaptation Reasoning. Please, demonstrate that the	**CR4: Cleared** Under Section I (PART II Project Justification), the proposal has stated its alignment with the AF Full Cost of Adaptation Reasoning, where no other funds aside those from AF is needed to achieve the project's intended results.

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			project/programme activities are relevant in addressing its adaptation objectives and that, taken solely, without additional funding from other donors, they will help achieve these objectives.	
	12. Is the project / program aligned with AF's results framework?	-	**No.** Please include reference to AF core indicator/s tables as per AF methodology. Methodologies for reporting Adaptation Fund core impact indicators (**For fully-developed proposals**) (78 kB, DOC)	**CAR2 (NEW):Not cleared.** The project's outcome level indicators have been revised to reflect the AF core indicator for direct and indirect beneficiaries including gender considerations. AF core indicator tables are also included for three core indicators. The project plans to develop various forms of assets (services, physical assets and infrastructures) for its beneficiaries. However, the proposal has not included a core indicator table for the AF core indicator "**Assets Produced, Developed, Improved, or Strengthened**". Please, include a core indicator table for the project's generation of "assets" as proposed above that reflects the results framework. As a point of reference: Methodologies for reporting Adaptation Fund core impact indicators
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Unclear.** **CR 10: Not cleared.** The sustainability aspects have been shown in light of the revised	**CR10: Cleared** Section II-J has been updated and relevantly discusses	-

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		component 2. However, please see the findings on the likelihood of maladaptation under point 3 above.	how the project is securing sustainability.	
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** The scope of the risks identification has not been clarified, the more considering the substantive changes to component 2. The inconsistencies in the risks identification presented remain. It further ignores the USPs. The ESMP considers only risks for three of the 15 ESP principles (i.e. natural habitats, biodiversity and heritage) for the USPs (paragraph 321), which does not reflect the activities that are to be considered USPs, nor the inherent risks of those USPs. The risks identification presented in Table 3 of Annex 2 is inadequate in several ways: it includes risks related to USPs, and takes mitigation measures into consideration, both of which it should not. The labour rights principle finding states that the process will apply the IFAD SECAP. The risk of child labour is said to be absent "as it will not be tolerated". **CR 13:** Please clarify how the application of SECAP will be complemented to ensure compliance with the AF ESP and GP.	**No.** It is unclear if the ESP checklist is correctly understood. 1. Given that the project will have USPs, basically all principles would require continuous screening and assessment and monitoring when there is any risk involved. However, if it is beyond doubt that there is no risk at hand then no further assessment is required. Please review ESPs 4, 6, 7, 8, 11, 12 and 13. 2. When it comes ESP 7 (Indigenous	**CR13: not cleared** **Clarification needed.** The AF ESP table has now been filled out. Principle 7 and 11 are in the review sheet assessed to have "no risks" associated to them under project. **1.** **For principle 7, please** mark the middle column with an "x". Also, correct the merged row so that it has three columns. **2.** In the right column for ESP 11 it is stated that the project "*will ensure that none of the proposed interventions directly or indirectly increase social and environmental vulnerabilities to climate change*." It sounds that there is a risk that the project will induce climate change but that the project will address the consequences? **Please clarify**. **3.** For principle 11, the right column says, "low risk" but it is at the same time stated to have no risks involved. **4.** **Please clarify** if the assessment is concluding that there is "no risk" or "low risk" that the project drives climate change. If "no risk", then please mark the middle column with an "x". **5.** Several ESP principles have no discussion about specific prevention and mitigation strategies for the risks. **Please**, include a discussion about mitigation strategies across the table as needed. **6.** **Also**, after any potential revisions, make sure to harmonize the content of the ESP table with that

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		CAR 2 (14): Not cleared. **CR 11: Not cleared.** **CR 14:** Please clarify the screening and approval criteria for the financial service providers, in particular with respect to AF ESP and GP compliance (paragraph 328). **CR 15:** Please clarify how the process for ESP compliance as described in paragraph 329 for some of the USPs, can be (cost-) effective and fit for purpose.	People) it appears that Zambia has numerous of indigenous tribes. Please, clarify the project's view and revise if needed. 3. Also, please take note of that ESP 8 (Involuntary Resettlement) also not refers to resettlement of a house but the need to resettle (full time/half time) if a new livelihood require. 4. In the right column for ESP table (para 136), briefly but consistently for each ESP discuss any potential risks and impacts for the project and how these could be prevented and mitigated, and to what degree further assessment may be needed. 5. Against above background and requested changes, please revise and update provisions	in **Table 17: Consolidated ESMP** in Annex 2 and the **Table for Checklist of ESP Principles** (p. 75 TC version) and in any other parts of the document as needed. **7.** The project is labelled as 'Category B' but only one of the ESP Principles is assessed to be "moderate risk". Please clarify. **Note**: The ESMP must cover all USPs, irrespective if these categorized as B' or 'C'. **CR11: No longer applicable**. See above ESP discussion. **CAR2: Cleared.** Relevant section from Annex 2 have been integrated into the proposal's Part II Section K.

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			throughout the document such as on p. 98, "*4.3 - Detailed project environment and social impact assessment against 15 principles*", and other as deemed necessary. 6. Also, on p. 84 the middle column of "Table 3: Assessment of CALRF's interventions against AF Principles", is also not harmonized with how the ESP checklist table is treated on p. 47 which is confusing. Please clarify. 7. In reference to responsibility part in the project organization for the ESMP, please make sure that table 5.1 (Consolidated ESMP) on page 102 is harmonized with Table 3 (Summary Management and Reporting Plan) on p. 88. If needed, please revise.	

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			CAR2 (14): Not cleared. Most of the detail which is contained in Annex 2 Table 2 should be included in the risk Table at Part II Section K. Please amend Part II Section K to reflect this. **CR11: Not cleared.** See Review criteria Question 14 just above. **CR14: No longer relevant.** **CR15: point of reference not found.**	
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	-	-	-
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.** Please see CAR 9.	-	-
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.** Please see CAR 9.	-	-
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	-	-	-
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	-	-	-

Review Criteria	Questions	Third Technical Review Comments (13 Sept 2024)	Fourth Technical Review Comments (21 February 2025)	Fifth Technical Review Comments (25 August 2025
	2. Are there measures for financial and project/programme risk management?	-	-	-
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** There is no process to identify environmental and social risks for any USPs. The GRM issues have not been adequately addressed. **CAR 6: Not cleared.** Please include relevant and adequate measures to manage environmental and social risks, identified in accordance to the AF ESP and GP.	**CAR6: Cleared** The proposal has provided a sufficient ESMP as proposed under Annex 2.	-
	4. Is a budget on the Implementing Entity Management Fee use included?	-	-	-
	5. Is an explanation and a breakdown of the execution costs included?	-	-	-
	6. Is a detailed budget including budget notes included?	**The budget contains errors.** **CAR 9:** Please correct the budget, throughout the proposal.	**CAR9: Cleared** Budget including notes corrected throughout proposal Part III Section G.	**CAR9 (re-opened): Corrections needed.** The mid-term and terminal evaluation costs are allocated under Execution Cost (Section F: Detailed budget). To follow Decision B.41/20, costs related to the MTR and the Final Evaluation must be budgeted under the IE fee. These evaluation costs can remain itemized in the M & E budget but please make a note that they fall under the IE fee. Please, reallocate the cost for mid-term and terminal evaluation to the IE fee costs. Re-calculate the budget figures across the document as needed following this revision.

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	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	-	-	
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	-	-	**CAR 10 (NEW):** The evaluation budget represents 0.7% of the total project cost (MTR and TE represent a total cost of $85,000), as included in table 17. Please consider increasing this to at least 1% to 2% as recommended range for projects of this size: (see table 3 in https://www.adaptation-fund.org/wp-content/uploads/2023/10/AFB.EFC_.32.7_Evaluation-Policy-Budget-Implication_clean.pdf). In addition, the evaluation budget needs to include also the cost for the development of the baseline report. Be advised that evaluation costs need to be charged against the IE fee. -
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	-	-	**CR 12 (NEW):** With regards to the results framework, we note that the total number of beneficiaries to be reached is: 43,400 direct beneficiaries and ~217,000 as indirect beneficiaries. We note also that under project outcome 1 you indicate the same number of beneficiaries reached, whereas under other project outcomes there are lower number of beneficiaries. Please make sure there is no double counting and kindly confirm if the total number of beneficiaries is indeed 43,400. – **CAR 11 (NEW):** Please ensure consistent alignment between Fund's outcomes and outputs. The table now presents the project's alignment just with Fund's outcome 6 but with outputs 7 and 8 as well, therefore an alignment with Fund's outcome 7 and 8 should also be included.
	10. Is a disbursement schedule with time-bound milestones included?	**Yes.** **CAR 7: Not cleared.** Please see CAR 9.	**CAR7: Not Cleared.** Please amend the disbursement schedule to comply with the AF template. Remove budget yearly breakdown	**CAR7: Cleared.** The Disbursement schedule now complies with the revised budget and the AF template.

Review Criteria	Questions	Third Technical Review Comments (13 Sept 2024)	Fourth Technical Review Comments (21 February 2025)	Fifth Technical Review Comments (25 August 2025
			Disbursement Schedule Template (**For fully-developed proposals**) (18 kB, XLS)	

ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT INFORMATION

i. **Title of Project:** Climate Change Adaptation of Livelihoods through Rural Finance (CALRF)

ii. **Country:** Zambia

iii. **Thematic Focal Area:** Agriculture

iv. **Type of Implementing Entity:** Multilateral Implementing Entity

v. **Implementing Entity:** International Fund for Agricultural Development (IFAD)

vi. **Executing Entities:** Ministry of Green Economy and Environment

vii. **Amount of Financing Requested:** 12,655,103 M (in U.S Dollars Equivalent)

viii. **Letter of Endorsement (LOE) signed:** Yes ☒ No ☐

ix. *NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities*

x. **Stage of Submission:**

xi. ☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

xii. ☐ This is the first submission ever of the proposal at any stage

xiii. In case of a resubmission, please indicate the last submission date: 20/01/2025

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

1. Project Background and Context:

Climate Vulnerability Context

1. The climate vulnerability context covers socio-economic and environmental context; climate historical trends and projections; and the impacts of climate change in Zambia. It rationalizes and contextualizes the project objective to enhance resilience while building adaptive capacities of the poor and vulnerable communities in target provinces.

1.1. Socio-economic and environmental context

2. With a population estimated at 19.3 million,[1] Zambia's economic progress has been unsteady. Between 2000 and 2014, the annual real gross domestic product (GDP) growth rate averaged 6.8%. The GDP growth rate then slowed to 3.1% per annum between 2015 and 2019, mainly due to falling copper prices and declines in agricultural output and HEP generation due to insufficient rains, and insufficient policy adjustment to these exogenous shocks. Further, Zambia is burdened with external public debt of USD11.1 billion (54% of GDP), a fiscal deficit of 11.7% - that has deprived the poor of resources for social services. Poverty, primarily a rural phenomenon, is increasing in absolute and relative terms. 77.3% males and 83.4% females in rural areas are categorized as poor in Zambia. 64.4% and 67.3% of males and females, respectively are categorized as extreme poor.[2]

3. Zambia suffers from droughts. The country has a history of drought years: 1987/88, 1991/92, 1994/95, 1997/98, 2001/03, 2004/05, 2011/12, 2015/16, 2018/2019 and 2023/2024. Drought reduces agricultural production from erratic rains, increased dry spells, water logging and false and late starts. Given that roughly 90% of cultivation in Zambia is rain-fed, small-scale agricultural producers are particularly vulnerable to drought. The severe drought of 2018/2019 affected 2.3 million people, who experienced increased food insecurity, with a sharp rise in food prices from the reduced agricultural production and harvest. Livestock production in the grazing areas in the western and southern parts of the country was particularly affected. Low water levels in major rivers and groundwater systems increased water insecurity. The country's aspiration to manage natural resources and respond to the challenges of climate change is stifled by weak governance linked to low institutional capacities and poor coordination mechanisms more effectively. Combined, these factors continue to undermine the country's resilience to natural and economic shocks. Climate-induced changes are already exerting considerable stress on the country's vulnerable sectors, hauling particularly the poor into further poverty.[3]

4. The ND-GAIN index ranks Zambia in the 137th position, being the 41st most vulnerable country and the 53rd least ready country to face climate change. Zambia's high vulnerability score and low readiness score place it in the upper-left quadrant of the ND-GAIN Matrix.[4] Consequently, Zambia has both a great need for investment and innovations to improve readiness and a great urgency for action to respond to the impacts of extreme climate change-related events.

1.2. Climate historical trends and projections in Zambia

5. Since 2000, Zambia has experienced nearly annual episodes of droughts, dry spells, and floods that have negatively impacted key sectors of the country's economy and led to significant economic and livelihood losses. For instance, the 2007/08 rainy season caused floods in several districts in the country, which affected an estimated 274,800 people (45,799.96 households) and caused extensive damage to human settlement and shelter, infrastructure, water and sanitation, health and nutrition, education and agriculture and food security. Climate change impacts may slow the development process of the country and could cost Zambia approximately USD $13.8 billion loss in GDP.

[1] Worldometer: Zambia's population
[2] Zambia Statistics Agency. (2023). Highlights of The 2022 Poverty Assessment in Zambia
[3] Irish Aid (2018). Country Climate Risk Assessment Report: Zambia
[4] The ND-GAIN Country Index: Zambia

6. Climate change is responsible for numerous environmental hazards, including more frequent and intense seasonal droughts, increased valley temperatures, prolonged dry spells, and flash flooding.[5] Over the past few decades, Zambia has experienced an increasing number of extreme climatic events (droughts, floods, extreme temperatures and dry spells), many of these with increased intensity and frequency. Their impacts are evident in climate-induced changes to physical and biological systems, which increasingly exert considerable stress on the country's vulnerable sectors, particularly agriculture.

7. Evidence shows that Zambia has over the past years, experienced several extreme events hazards including droughts and prolonged dry spells, seasonal and flash floods and extreme temperatures.[6] Some of these, especially droughts and floods, have increased in frequency and intensity over the last two decades and have adversely impacted on food and water security, energy and livelihoods of communities. From 2000-2007, the intensity and frequency of droughts and floods and the number of people affected changed with a trend towards increased number of floods (see Figure 1).[7]

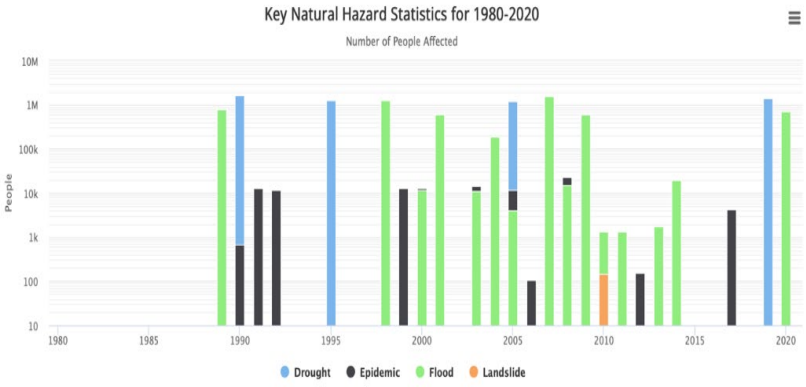


Figure 1: Overview of the most frequent natural disasters in Zambia and number of affected people

8. Zambia's development thrives on three principal economic pillars: agriculture; mining and tourism. Of these, agriculture and tourism are more highly influenced by the impacts of climate variation and change. For agriculture, it should be remembered that the sector supports roughly 85% of the country's population, employing 52% of the country's working-age population - a majority of whom are women and rural-dwelling residents.[8] This turns the spotlight on the socioeconomic implications of climate change impacts on the agriculture sector.

9. Other equally important sectors affected by climate variation and change include human and animal health, land, forestry, infrastructure development, energy and water resources. All these sectors are climate-sensitive and vulnerable to the vagaries of climate variability, particularly changes in precipitation and temperature distribution in the country. On average for the period 1950-2016, precipitation has been decreasing by 1.1 mm yr^{-1}, while temperature has been increasing by 0.01 ^{o}C yr^{-1} in Zambia (Libanda et al., 2020).[9] With constrained asset portfolios, the impacts of climate change on livelihoods are more significant for rural households that depend on rain-fed agriculture.[10] With a projected significant increase in the number of consecutive dry days over Zambia, especially beginning from the year 2050 to the end of the century, the agriculture sector, ecosystem services and water resources management will negatively be impacted.[11] A closer look at Climate Analytics data shows that, overall, temperature is increasing on the one hand, while precipitation is declining on the other (Figure 2) - with a steep decline in precipitation beyond around 2044.

[5] Rosen, J.G., Mulenga, D., Phiri, L. et al (2021). "Burnt by the scorching sun": climate-induced livelihood transformations, reproductive health, and fertility trajectories in drought-affected communities of Zambia. BMC Public Health
[6] National Policy on Climate Change 2016
[7] WB Portal for Climate Change.
[8] Rosen, J.G., Mulenga, D., Phiri, L. et al (2021). "Burnt by the scorching sun": climate-induced livelihood transformations, reproductive health, and fertility trajectories in drought-affected communities of Zambia. BMC Public Health.
[9] Libanda, B., Bwalya, K., Nkolola, N.B., Chilekana, N., 2020. Quantifying long-term variability of precipitation and temperature over Zambia. J. Atmos. Solar-Terrestrial Phys. 198, 105201. https://doi.org/10.1016/j.jastp.2020.105201
[10] Hamududu, B.H., Ngoma, H., 2020. Impacts of climate change on water resources availability in Zambia: implications for irrigation development. Environ. Dev. Sustain. 22, 2817–2838. https://doi.org/10.1007/s10668-019-00320-9
[11] Libanda, B., Ngonga, C., 2018. Projection of frequency and intensity of extreme precipitation in Zambia: A CMIP5 study. Clim. Res. 76, 59–72. https://doi.org/10.3354/cr01528

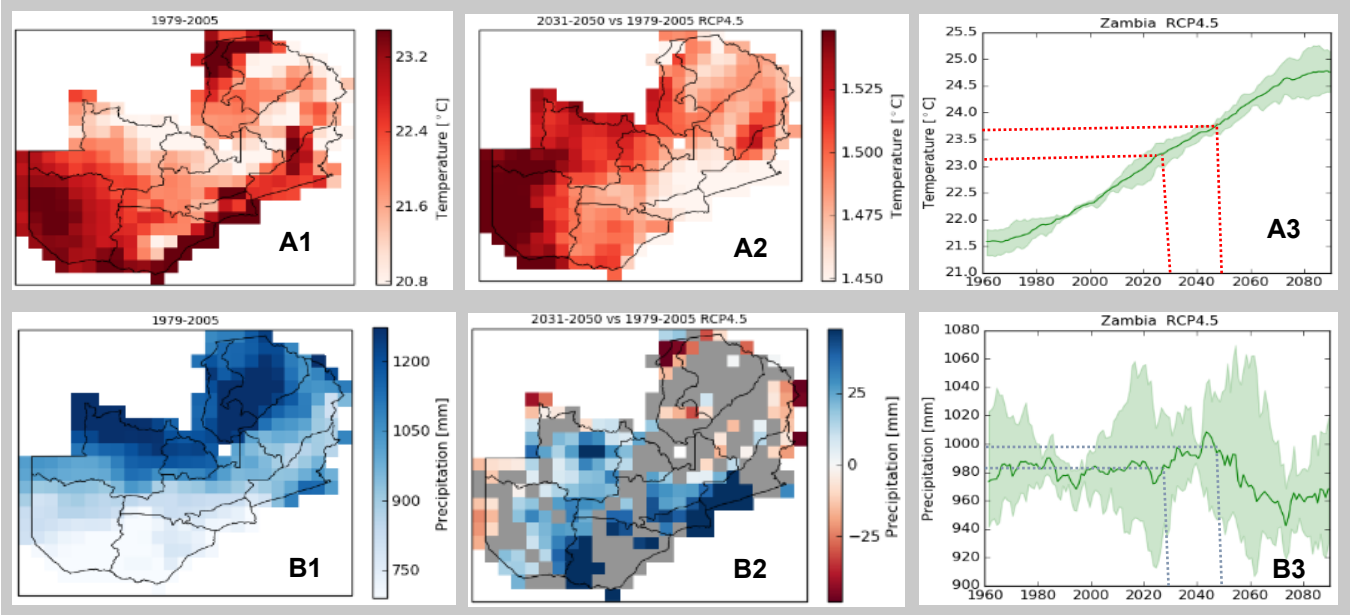


Figure 2:Under the RCP4.5 scenario 1979-2005 (A1) period is projected to get warmer in the 2031-2050 (A2) period, with temperature projected to continue to rise (A3). Across the country, the temperature variation will be between +1.45oC and +1.52oC. Under the sa

10. In other simulations, over the whole country, the number of wet days is likely to decline. In the near future, the number will reduce by 5 and 6 days, while in the far future it will decrease by 7 and 11 days for RCP 4.5 and RCP 8.5 respectively. The reduction in wet days will be stronger towards the south-west regions of the country. On average, for both RCP scenarios, there will be a general reduction in the annual precipitation, but with an increase in the northern and a decrease in the southern-western regions. In future projections, there was a reduction of precipitation in the onset of rain season and increase towards end of the season (Figure 3 **(A)**).[12] Taking maize as both a political and staple food crop as an example, the implications of these projections will lead to low yields under water stress (Figure 2 (**B**)) and further lower yields under water and nutrient stress (Figure 2 (**C**)) - threatening food security, production landscapes and the ecosystem services and disease outbreaks.

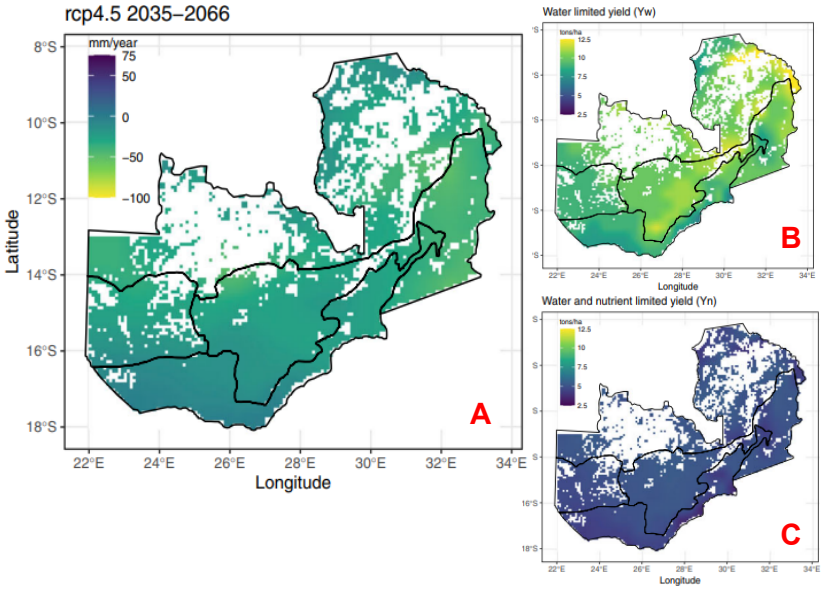


Figure 3: Projected spatial variation in average annual precipitation (mm·yr-1) in 2035-2066 (RCP 4.5 - A), and fall in maize under water stress (B) and under water and nutrient stress (C)

11. The risk of crop failure in western and southern regions increases due to dry spells and heat stress, while crops in the northern regions will be threatened by flooding or waterlogging due to heavy precipitation. The simulated decline in the water-limited and water- and nutrient-limited maize yields varied from 15 to 20% in the near future and

[12] Siatwiinda, M.S. et al. (2021). Climate change impacts on rain-fed maize yields in Zambia under conventional and optimized crop management. *Climatic Change 167: 39*

from 20 to 40% in the far future, mainly due to the expected temperature increases.[13] The failure of maize will lead to prices soaring, threatening civil strife.

12. At agricultural field level, the consequences of this scenario will lead to waterlogged fields, water shortages, destruction of crops and higher incidences of crop and livestock diseases. The increased incidences of adverse weather events lead to lower and less predictable incomes from agriculture due to production declines and variations, and as the alternative employment options are limited, climate change may lead to increased poverty and vulnerability for those who lack the capacity to adapt, and the resilience to rise and overcome the constraints. Climate resilient agriculture, supported by improved access to rural finance, which is targeted at investments that respond to changing climatic conditions, may become the main driver of sustainable rural development.

13. Overall, climate change is projected to affect the southern parts of Zambia more than the northern and on average, rainfall is expected to be more variable and rainy seasons are likely to shift.[14] Further, Zambia has witnessed crop failure in the western and southern parts, electricity rationing of 21 hours per day to days without power due to rainfall variability. There is high volatility in the staple maize crop and maize meal prices due to supply shortfalls and limited irrigation.[15] Climate change scenarios typically result in a decline in Zambia's real annual GDP growth rate. Under unconstrained emissions, growth in GDP is projected to reduce much more at about 2% by 2050 compared to a 1% reduction under strict global mitigation. Another source has projected a $5 billion GDP deficit over a 10–20-year period due to the impact of climate change on agricultural productivity, poverty, energy production, healthcare costs, and loss of natural environments.[16]

14. Under the 1.5°C and 1.3°C temperature pathways, the percentage differences between GDP per capita are about 11% and about 18%, respectively.[17] Over the past 30 years, floods and droughts have cost Zambia USD 13.8 billion – equivalent to 0.4% of annual GDP growth. Climate variability could cost Zambia USD 4.3 billion in lost GDP over the next decade, reducing annual growth by 0.9%.[18]

15. The place of the agriculture sector in Zambia's economy is crucial. The sector provides employment to nearly 87-90% of the rural population,[19] and contributes between 16 to 20% to the country's GDP (Figure 4). The sector directly underpins livelihood of at least 50% of the population. Being sensitive to climate change, and almost entirely dependent on rain-fed agriculture, the resultant adverse impacts on water, crops, livestock and fisheries lead to reduced agricultural productivity – raising concerns about food and nutritional insecurity and food prices – and consequently, peace and calm in the country. Despite the centrality of agriculture in the national economy and rural development, the potential of the sector remains untapped owing to various factors which, among other challenges, include:

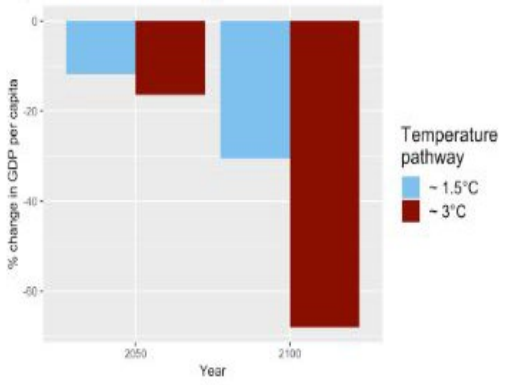


Figure 4: Impact of climate change on Zambia's GDP

- Gaps between climate change existing related policies and their implementation owing to inadequate policy coordination, inadequate technical capacity, resource mobilisation skills and effective decentralization;
- Poorly coordinated extension services in some cases, and their complete lack in others – including lack of meaningful institutionalization of climate change;

[13] Siatwiinda, M.S. et al. (2021). Climate change impacts on rain-fed maize yields in Zambia under conventional and optimized crop management. *Climatic Change 167: 39*

[14] Ngoma et al., 2017; Hamududu and Ngoma, 2019; Mulenga et al., 2017

[15] Vidal, J. (2024). Zambia faces 21-hour power cuts as drought dries up Lake Kariba's hydroelectric potential. Yale Environment 360.

[16] Rosen, J.G., Mulenga, D., Phiri, L. et al (2021). "Burnt by the scorching sun": climate-induced livelihood transformations, reproductive health, and fertility trajectories in drought-affected communities of Zambia. BMC Public Health.

[17] Climate Analytics: The economic damages of 3°C warming for SIDS and LDCs - Zambia

[18] Makondo et al. 2014, MTENR 2007, Sishekanu 2013

[19] Aid Irish, 2017. Zambia Climate Action Report 2016 1–20

- Lack of financial services to enhance the ability of farmers to invest in more lucrative but also environmentally sustainable production systems per unit area;
- Lack of investments in land restoration/rehabilitation (given the poor fertility status of soils, high level of deforestation rates); and
- Poor infrastructure to support rural communities' access to markets and other services; market illiteracy exacerbated by low levels of formal education of most smallholders in rural areas; generalized vulnerable context of rural communities with constrained livelihood options to adapt to climatic events such as floods and crop and animal disease outbreaks that have increased in frequency – among other challenges.

Climate vulnerability and the need for aquaculture

16. The fisheries sector in Zambia is highly vulnerable to climate change, characterized by erratic rainfall patterns, rising temperatures, and increased frequency of floods and droughts. These climate stressors affect natural fish breeding habitats, leading to reduced fish yields. For instance, capture fisheries contribute about 56% of Zambia's total fish production; however, climate-induced disruptions have necessitated the expansion of aquaculture to meet the growing demand for fish.

Context and climate impact

17. Aquaculture plays an essential role to Zambia's food and nutrition security, providing a reliable source of protein and livelihoods. However, it remains highly vulnerable to the impacts of climate change, which can result in economic losses and increased food and nutrition insecurity. Luapula Province, where over 50% of the population relies on inland capture fisheries, faces increasing vulnerability due to climate change. The region is experiencing rising temperatures, erratic rainfall patterns, and extreme weather events, which have severely impacted fish breeding habitats and productivity. According to recent studies, these climatic changes have contributed to a dramatic decline in fish yields. For example, in Lake Bangweulu, fish yields have dropped from 12 kg/net/night to just 1.5 kg/net/night over the past three decades due to rising temperatures and reduced rainfall patterns. Additionally, **water quality degradation** caused by climate-induced droughts and floods is affecting fish health and productivity, further threatening food security in the region.

18. The effects of climate change exacerbate poverty and food insecurity in Luapula, one of the poorest provinces in Zambia, where 80.5% of the population lives in poverty and 64.5% are classified as extremely poor. The combination of dwindling fish stocks, economic hardship, and increasing environmental stressors underscores the urgent need for adaptive strategies. A study by Maulu et al. (2024)[20] identifies aquaculture producers' vulnerability to climate change, noting challenges like higher production costs, disease outbreaks, and the need for diversified fish species to withstand changing conditions. The promotion of aquaculture as a climate adaptation strategy can mitigate these vulnerabilities by offering a more controlled environment for fish production.

1.3. *Agro-ecological zones and soils*

[20]Maulu S et al (2024). Perceived effects of climate change on aquaculture production in Zambia: status, vulnerability factors, and adaptation strategies. *Front. Sustain. Food Syst*. 8:1348984. doi: 10.3389/fsufs.2024.1348984

19. Zambia is classified into three main agro-ecological zones according to pedological characteristics, climatic factors, rainfall patterns and common agricultural practices. The three ecological zones extend from the west to the east of the country with Agroecological Zone I in the South, Agroecological Zone II north of Agro-ecological Zone II and Agro-ecological Zone III further to the north covering parts of the North-western, Northern, Luapula, and Muchinga Provinces with the highest rainfall (see Figure 5).

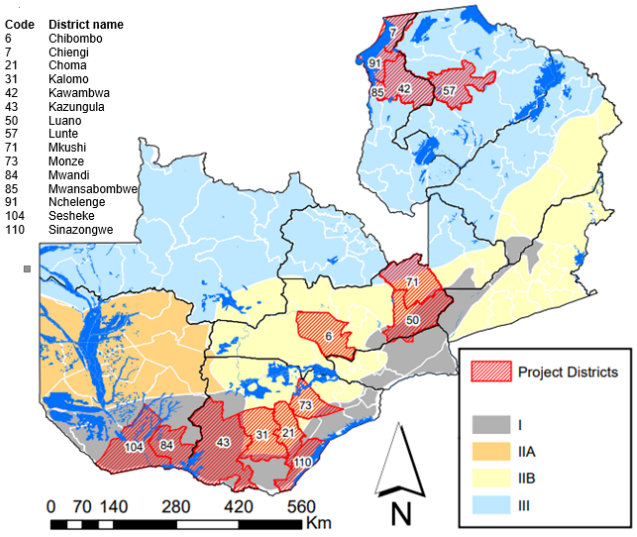


Figure 5: Map of Zambia showing the agroecological zones and the project districts

20. Semi-arid Region I includes areas of southern, eastern and western Zambia: Zambia's valleys at 300-800 m altitude mostly lie in Region 1. Mean annual rainfall in Region I ranges from 600 to 800 mm. The growing season is relatively short (80 -120 days) and risky for crop production, as poorly distributed rains result in crops enduring frequent dry spells. Region I contains a variety of soil types, ranging from slightly acidic loamy and clayey soils with loam topsoil, to acidic sandy soils. Characteristics of these soils which have significant constraints for crop production, include: erosion, limited soil depth in hilly and escarpment areas, poor physical properties that make it difficult to till especially on cracking clay soils, crusting, and low water holding capacities in sandy soils.

21. Region II includes much of central Zambia, with most of Central, Southern, Eastern and Lusaka provinces. It contains the most fertile soils and most of the country's commercial farms. Annual rainfall in Region II averages 800-1000 mm, and the growing season is 100-140 days long. Distribution of rainfall is not as erratic as in Region I, but dry spells are common and reduce crop yields, especially on the sandier soils. Average mean daily temperatures range from 23- 26°C in the hottest month October to 16-20°C in the coldest months of June and July. The most common soils in Region II are red to brown clayey to loamy soil types that are moderately to strongly leached. Physical characteristics of the soils that affect crop production, include low water holding capacity, shallow rooting depth, and top soils prone to rapid deterioration and erosion. These soils also have low nutrient reserves and retention capacity, are acid, have low organic matter and nitrogen content, and are phosphorus-deficient.

22. Region III, the high-rainfall area, lies in a band across northern Zambia, including the Northern Luapula Copper belt, Northwestern provinces and some parts of the Central province. This region receives over 1000 mm of precipitation each year, and the growing season ranges from 120-150 days. Soils in Region III are highly weathered and leached, and characterized by extreme acidity. Consequently, the soils have few nutrients available for plant growth, and are high in exchangeable aluminium and manganese, both of which are toxic to most crops unless soils are limed to increase pH.

Major cropping systems

23. Region I has predominantly small-scale farmers in the major valley systems. In the Luangwa Valley, sorghum, finger millet and maize are the major starchy food crops, while groundnuts, cowpeas and pumpkins are also grown. Farmers use hand hoes for cultivation. Goats and chickens are commonly kept by farm households, and some farmers have a few cattle. Other areas of the region mainly produce bulrush millet, sorghum, and cassava. It should be added the soils are characterised by erosion, limited depth in hilly and escarpment areas, poor physical properties that make it difficult to till especially on cracking clay soils, crusting and low water holding capacities in sandy soils. In this agro-ecological zone lie Mwandi, Sesheke (of Western Province), Kazungula, Kalomo, Sinazongwe, Choma and Monze districts (of Southern Province) that have been targeted for the project implementation.

24. Zambia's large commercial farmers are concentrated in Region II. Their farming systems are mechanized and highly diverse, cultivating maize, soybeans, wheat, cotton, tobacco, coffee, vegetables, and flowers, and breeding

livestock. Besides these large-scale systems, there are also small- and medium-scale farmers in the region. Maize is the main staple crop in these systems in Central and Eastern provinces. Beans, groundnuts, pumpkins, and cassava leaves are grown to diversify diets. Other crops include cotton, sorghum, soybeans and sunflower. Cattle, chickens, goats, pigs and sheep are common. Farmers also grow tobacco. Cattle are important for traction, meat, milk and manure. The major constraints to increase crop production in Region II are the lack of low-cost biocides to control pests and diseases, soil degradation, and the depletion of soil fertility. Physical characteristics of the soils that affect crop production include low water holding capacity, shallow rooting depth, and top soils prone to rapid deterioration and erosion. These soils also have low nutrient reserves and retention capacity, are acidic, have low organic matter and nitrogen content, and are phosphorus-deficient. The zone has ample irrigation potential, which allows for a diverse mix of crop and livestock enterprises. In this agro-ecological zone lie Mkushi, Luano and Chibombo districts (of Central Province) that have been targeted for the project implementation.

25. The agro-ecological zone III, the high-rainfall area, lies in a band across northern Zambia, including the Northern, Luapula, Copperbelt, Northwestern provinces and some parts of the Central province. Small-scale farming predominates in Region III. Rural areas of this region have the lowest population density in Zambia. Farmers use very low-input, shifting and semi-permanent cultivation techniques. *Chitemene* and *ifundikila* are two widely used, traditional methods of cultivation. In Chitemene, trees are cut at 1-meter height, branches are heaped in piles and burned, and then crops are planted in the ash. *Ifundikila* is used in cleared fields. Grass is cut and buried at the end of the rainy season and allowed to decompose. The composted material is spread before the next planting season onto frequently mounded fields.

26. Principal crops in the hand hoe system of Northern, Luapula and Northwestern provinces are cassava, landrace maize varieties, sweet potatoes, pumpkin, finger millet and beans. Most farmers have chickens and a few goats, but other livestock is uncommon. The existence of tsetse fly in some areas limits opportunities for cattle production.[21]

27. Soils in Region III are highly weathered and leached, and characterized by extreme acidity. Consequently, the soils have few nutrients available for plant growth, and are high in exchangeable aluminium and manganese, both of which are toxic to most crops unless soils are limed to increase pH. The major crops produced are cassava, maize, groundnuts, millet, sorghum, beans and sweet potatoes; and small-scale fishing and fish trading is also a source of income. Given the abundance of water in this area, there is potential for irrigation, and for fishing. In this agro-ecological zone lie Chiengi, Nchelenge, Mwansabombwe and Kawambwa districts (of Luapula Province) and Lunte (Northern Province) that have been targeted for CALRF implementation.

a. Impacts of climate change and climate variability

28. Due to climate change, Zambia has been experiencing more variable precipitation and temperatures. Weather patterns are characterized by events such as heavy rains, floods, droughts and prolonged dry spells, which are becoming more intense and frequent. Climate change has affected living conditions, especially on groups such as women and the poor. In the year 2020, Zambia experienced two extreme weather events, the El Nino Oscillation (ENSO) which significantly contributed to the increase in food insecurity and the flooding, which was experienced in some parts of the country that negatively affected the crop production as well as food security.

1.3.1 The economic implications of extreme weather events

29. Zambia has been a subject of discussion in international media for being in debt distress. As has been noted, the country's fiscal space has been under stress. The country has been under serious fiscal challenges, and therefore, this has crippled its own ability to respond to challenges of extreme weather events. As a case in point, the 2023/2024 farming season has suffered severe drought that has adversely affected 9.8 million people (nearly 51% of the total population), out of whom 6.6 million (nearly 34% of the total population) are in need of urgent humanitarian assistance. One million hectares of planted maize has been adversely affected across 84 of the 116 districts of the country. The President Hakainde Hichilema revealed that the country urgently needs K23.5 billion ($969,764,132) to implement immediate life-saving humanitarian needs arising from the drought experienced in the 2023/24 farming

[21] Chikowo, R. Global Yield Gap Atlas: Description of cropping systems, climate, and soils in Zambia

season. The President Hichilema stated that out of the required amount, only K1.3 billion ($53,960,506) was available leaving a financing gap of K22.2 billion ($919,550,112).[22] The agriculture sector needs K2.5 billion ($103,545,757) to implement early recovery measures as well as build resilience against the effects of the drought while livestock and wildlife preservation will require K1.7 billion ($70,501,673). The water resources development and management, which is a key pillar of early recovery and resilience building, will require K3.02 billion ($125,216,178) out of which K569 million ($23,652,306) was available, leaving a funding gap of K2.4 billion ($99,648,328).

30. The direct economic losses from the agricultural and productive sectors (hydropower) are estimated to be 75 million USD on average per year, and to increase to 250 million USD under projected climate conditions (projected period 2051 - 2100, considering the IPCC scenario RCP 8.5 which foresees an increase in the global temperature between 1.5°C and 4°C by 2100) (UNDRR and CIMA, 2019). The total Average Annual Loss for the agricultural sector (crops) could rise dramatically under projected climate conditions from 29 to 180 million USD per year, indicating that a substantial part of the annual crop production could be lost due to intensified droughts in the projected climate.

1.3.2 Agriculture

31. Agriculture constitutes 13% of Zambia's GDP. It is estimated some 1.5 million smallholders who rely heavily on rain-fed maize production, which is the country's staple food and is particularly vulnerable to infestations. The smallholder farmers produce around 90% of the domestic food supply. However, they continue to face serious constraints. Over-reliance on rain-fed agriculture makes them particularly vulnerable to increased occurrence of climate-induced shocks such as floods, drought, prolonged dry spells and extreme temperatures. Diversity of household crop production is limited, with around 80% of households cultivating three or fewer crops. These largely, have made farmers (particularly female farmers who, in most cases are not able to quickly adapt to the changing environment) livelihoods more fragile, further compromising their adaptive capacity to climate-induced shocks and subsequently reducing their resilience to climate risks.

32. For most farmers, agricultural productivity and revenues are low, mainly due to exposure to climate-induced risks and limited access to improved inputs. The vast majority of agriculture has in the previous years, been vulnerable to shocks, such as drought, hydro-meteorological hazards (e.g. tropical cyclones) and their effects. Natural and climate-related disasters has increased in recent years, disproportionally affecting poor people. The impacts of climate change, such as floods and droughts, have led to persistent structural problems that account for, in part, poverty and food insecurity.

33. Recurring droughts, floods and topsoil erosion exacerbate the vulnerability of smallholder farmers to the adverse effects of climate change, reducing their adaptive capacity and making them more vulnerable to environmental and livelihood shocks. Pest infestations and livestock disease outbreaks compounded the situation. Unsustainable land use practices, such as "slash and burn" agriculture is seen as one of the root causes. The impact of climate-related disasters has a disproportionate effect on women and girls, leading to negative coping strategies, which tend to be more prevalent in households headed by women. Women constitute 64% of the rural population and approximately 80% of food producers.

34. Zambia is now anticipating further reverberations on agricultural productivity due to the impact of the COVID-19 pandemic and the Russia-Ukraine crisis, which have distorted agricultural markets and food systems.

35. Efforts at transforming smallholder farming as a business have been constrained by lack of organization capacity of the producers, inadequate access to productive assets, modern technology and market services. The input market needs to be better organized be more cohesive with farmers needing more capacity and information to respond appropriately. Access to adequate financing from financial institutions remains a challenge for farmers due to absence of considerable collateral, which jeopardizes their ability to expand production, increase yield and attract additional services from major players particularly private sector within value chains. This is an even higher challenge for

[22] Central Province Provincial Admin. 'Zambia Needs K23.5 Billion for Drought Intentions.'

women, who tend to have limited access and control over productive assets such as land than men, which makes it harder for women to secure financial support.

36. At the national level, Zambia will continue to be adversely affected by the Ukraine–Russia crisis. The prices of various commodities and services, including agricultural commodities, will be negatively affected. In the near term, the disruption of trade from the Black Sea region. Recent forecasts have shown that the conflict will likely to impact the imports of key commodities, mainly wheat sourced from Russia and agricultural inputs. For the 2022/2023 consumption year, there is a wheat deficit of about 95,000 t, which will need to be imported from elsewhere. This is not expected to be imported from South Africa as it also imports about half of its annual wheat needs. Global cereal supplies are expected to decline in 2022, with expected massive declines as a direct result of the Ukraine-Russia conflict. Global Cereal Price Index went down by 4.1% in June from May, but 27.6% above June 2021 levels, and global wheat prices were down 5.7% in June but 48.5% above June 2021. Consequently, the supply chain for commodities will be affected. The price of substitute goods such as soya beans and ground nuts for vegetable oil is expected to increase due to global shortages impacted by the crisis.

37. The increase in temperatures has complicated the control and management of pests and diseases. Droughts and flooding have also resulted in water insecurity, crop failure, reduced livestock production and the consequent food insecurity. Climate variability has kept a proportion of the population dependent on subsistence agriculture, below the national poverty line[23].

38. Changes in rainfall have been substantial with the north experiencing more intense rainfall, while the south has had decreased amounts.[24] The combined effect of increasing temperature and increasingly erratic rainfall imposes a severe challenge for the predominantly rain-fed crop and livestock production across the country – with impacts more severe in rural community where communities are poor. A recent assessment of the vulnerability context of Zambia highlights the gravity of the country's vulnerability following droughts in some parts of the country and floods in others. About 2.3 million people between October 2019 and March 2020 were estimated to be facing the Integrated Food Security and Phase Classification (IPC) Phase 3 or worse food security situation (Figure 6). About 16% of the rural population is already in IPC Phase 3, marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies. About 3% are in IPC Phase 4 and facing significant food gaps. Malnutrition is also expected to increase.[25]

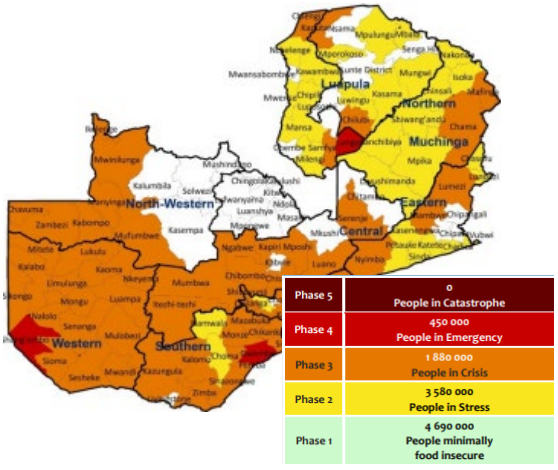


Figure 6: IPC Projections 2019-2020

39. The devastating effects of erratic rains, dry spells, water logging, false and late start to the 2018/2019 rain season on agriculture production were the leading causes of reduced crop production contributing to the acute food insecurity conditions across the country. The 2020/2021 rain season has been the same. Prolonged dry spells affected Southern, Western and parts of Lusaka, Eastern and Central provinces, while flash floods, water logging and leaching were in the northern and eastern parts of the country.

40. In these provinces, there have been: i) drought conditions and dry spells that have led to a marked decrease in crop production; ii) erratic rains mostly in the south that resulted in reduced crop production; and iii) flooding that led to water logging and leaching of nutrients for crops; iv) poor quality of grazing land which affected not only domestic animals but also wild animals in some national parks, such as in Mosi-oa-Tunya in Southern Province; and iv) crop, animal and human disease outbreaks attributed to changing rainfall patterns and temperature regimes.

[23] National Policy on Climate Change
[24] Climate Service Center, 2016; IFAD/WFP 2016
[25] Vulnerability Assessment Committee Results (2019): Zambia

41. Climate change constitutes a significant and serious threat to sustainable development for Zambia with projections indicating increased poverty, increased incidents of crop failure, change in the length of the growing season, and a 13% reduction in water availability by 2050 relative to the 1960-2000 period.[26] According to the Climate Adaptation in Rural Development (CARD) assessment tool, these changes will significantly lead to reduction in yields of most crops in the country, including maize (>65% of cropped land and is the main staple crop), cassava, maize, sorghum, millet and groundnuts – crops, which are mostly grown by smallholder farmers in rural Zambia (see Figure 7),[27] and soy and wheat usually produced for sale by mostly medium to large-scale farmers.

42. Consistent with CARD (Figure 7), another study[28] indicates that the production of various crops, particularly cereals (maize, millet, sorghum), legumes (beans, cowpeas, and groundnuts), and root crops (cassava) across Zambia is expected to be negatively impacted by increased temperatures and reduced or delayed rainfall, thereby causing a reduction in the extent of suitable production areas as well as reducing the productivity of remaining areas.

43. Under the 'no irrigation, medium risk' scenario, between 2030 and 2050, overall, cassava will be the best performing crop at national in Zambia. The yields of the rest of the crops (maize, millet, rice, sorghum, soy and wheat) are projected to dwindle. In terms of priority provinces, cassava yields are projected to increase the most in Central Province, followed by in Luapula Province. It will marginally increase in Western Province between 2030 and 2035, but then drop after 2036 and beyond. The worst performance of cassava is projected in Southern Province. It should be recalled that under the 'no irrigation, medium risk' scenario, it is apparent that drastic losses in yields are projected and expected in Western and Southern Provinces. These provinces lie within the first agro-ecological zones (most arid regions of the country with mean annual rainfall in ranging from 600 to 800 mm).

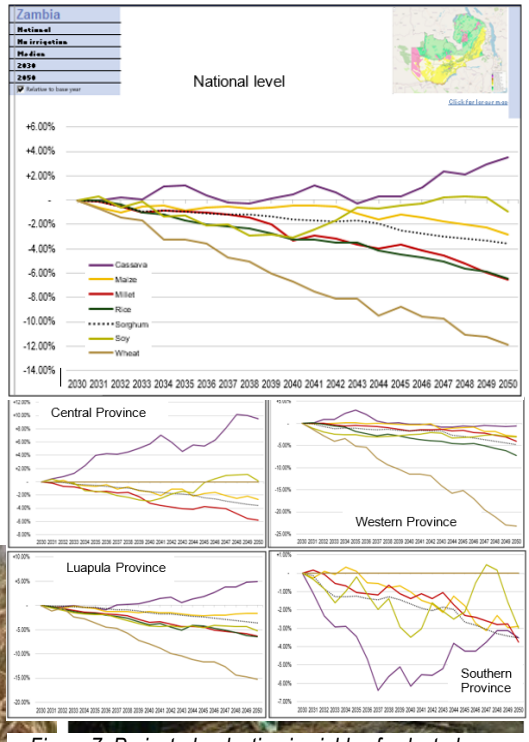


Figure 7: Projected reduction in yields of selected crops

44. Production of maize, one of the most climate-vulnerable of Zambia's staples, is predicted to undergo minor or moderate decreases depending on the choice of varieties. Long-maturing varieties are predicted to undergo particularly negative impacts resulting from climate change, where it is predicted that annual production may decrease from ~33- 35% (Luapula, Northwestern) up to ~80-90% (Copperbelt, Muchinga). Production of beans, one of the most important subsistence crops, is predicted to undergo a decrease in annual production in all provinces, ranging from ~20 – 28% (Northwestern, Muchinga, Northern, Copperbelt,

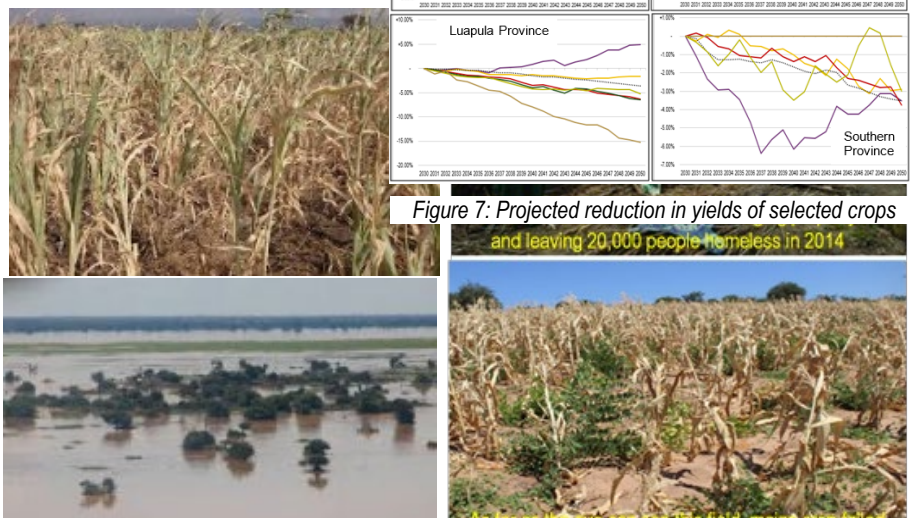


Figure 8: Examples of impacts of extremes events in Zambia in the past 1-3 rainy seasons (crop failure, property and infrastructures damages, displacement

[26] Ngoma et al., 2019; Hamududu and Ngoma, 2019; Verhage et al., 2018; Mulenga et al., 2017

[27] Developed by IFAD, the Climate Adaptation in Rural Development (CARD) assessment tool uses data that is based on the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP) Fast Track output. Simulations use the greenhouse gas emission scenario RCP8.5, an emission scenario that leads to around 4°C global warming by 2100. The graph shown uses a no-irrigation scenario, with 2020 as the baseline year.

[28] Hunter et al. 2020. Research Highlights – Climate Change and Future Crop Suitability in Zambia. University of Cape Town, South Africa, undertaken in support of Adaptation for Smallholder Agriculture Programme' Phase 2. IFAD, Rome.

and Luapula) up to 50 – 65% (Eastern, Southern, Western). Conversely, certain climate-resilient species such as finger millet, sorghum, cowpeas and groundnuts are comparatively less affected by the predicted climate changes. They may serve as appropriate alternative staples to be promoted in areas where production of traditional staples is expected to become marginal or unsustainable. Valuable oil crops such as sunflowers and soyabeans are anticipated to maintain widespread areas of good or excellent suitability, while in the case of cassava, results indicate that some provinces may experience positive changes to potential production of cassava.[29] In addition to the size of the population affected increasing (from about 1.23 million in 2004/05 and 1.44 million in 2006/07), the affected areas have changed – the 2006/07 flood affected 41 districts of the nine provinces. Recent years have also seen droughts within the rainy seasons, particularly in 2000/01, 2001/02 and 2004/05 and 2018/19.[30] The 2017/2018 rainfall season had prolonged dry spells, affecting mainly the southern half of the country. The intense drought in 2015/2016, due to a strong El-Niño, affecting most countries in Southern Africa, weakened the coping capacity and lowered many farmers' resilience towards ongoing dry spells. In Zambia, there have been floods in some places and droughts in others (see Figure 8).

Barriers to Climate Change adaptation in the Context of Climate Vulnerability

45. In the context of this project, the principal challenges and barriers that communities face to adapt to the challenges of climate variability and change are bifurcated into: i) lack of livelihood options evidenced through community reliance and specialisation in the exploitation of natural resources for their livelihoods, and ii) lack of innovative financing systems to build capacities to address challenges in climate-sensitive sectors.

Limited livelihood options and community reliance on the exploitation of natural resources

As has been noted, territorial and demographic disparities in wealth distribution and economic development in Zambia have left rural areas lagging behind. Additionally, rural livelihoods, including socio-cultural and traditional activities, almost entirely revolve around exploiting natural resources, principally land and forests and associated resources. In the words of Dewees et al,[31] Zambian forests are a pharmacy, a supermarket, a building supply store, and a grazing resource, providing consumption goods not otherwise easily available, particularly in subsistence economies. All these environmental affordances hinge on the integrity of forests to maintain or improve the stocks and flows of ecosystems that underpin livelihoods.

46. It should be noted that the relationship between land and forest resources and rural livelihoods is socioeconomic that is intimately engraved in the cultural and traditional context of the people – built over years of interaction with the environment and structured and organized in traditional knowledge.[32] Therefore, the disruption of the socioecological context due to rising temperatures, floods in some areas and droughts in others, poor soil fertility status and human and animal disease outbreaks, among other factors, seriously threatens communities socioeconomically, culturally and traditionally. The overreliance on the exploitation of natural resources for survival is inevitable for rural communities because communities have lean asset portfolios. In other words, they have specialized in natural resources-based livelihood income streams in the face of a climate change context that demands diversification to survive. Given the frequency and intensity of extreme weather events together with animal and crop (associated with changes in temperature rise and delays in rainfall onsets) and human disease outbreaks, it has become increasingly a matter of 'specialize and die or diversify and survive'[33] the effects of climate variability and change – considering that diversification of livelihood activities is a survival strategy.[34]

[29] Hunter et al. 2020. Research Highlights – Climate Change and Future Crop Suitability in Zambia. University of Cape Town, South Africa, undertaken in support of Adaptation for Smallholder Agriculture Programme' Phase 2. IFAD, Rome.
[30] World Bank. (n.d.). *Zambia: Vulnerability*. Climate Change Knowledge Portal.
[31] Dewees, P.A et al (2010). Managing the Miombo Woodlands of Southern Africa: Policies, incentives and options for the rural poor. Journal of Natural Resources Policy Research, 2(1), 57–73.
[32] Chilombo, A. (2021). Questioning the narrative of land marginality in large-scale land acquisition deals: case study of Nansanga Farm Block in Zambia, Journal of Land Use Science
[33] Chilombo, A. & van der Horst (2021). Livelihoods and coping strategies of local communities on previous customary land in limbo of commercial agricultural development: Lessons from the farm block program in Zambia. *Journal of Land Use Policy*
[34] Tesfaye, Y. et al (2011). Livelihood strategies and the role of forest income in participatory-managed forests of Dodola area in the bale highlands, southern Ethiopia. *Journal of Policy Econ.* 13, 258–265.

Limited financing systems to build community adaptive capacities in climate sensitive sectors

47. Linked to limited livelihood options and community reliance on the exploitation of natural resources is the limited financing systems to build community adaptive capacities in climate-sensitive sectors. Access to financial services, is one of the biggest challenges that smallholder farmers face in rural Zambia. Smallholder farmers produce on customary land that cannot be collateralized to access financial services. Additionally, credit availability is a challenge in some geographically isolated rural communities. Therefore, smallholders cannot afford up-front cash outlays (e.g., input costs) and investment costs (e.g. seedlings, improved climate tolerant seeds, labor costs for construction of soil conservation structures, machinery and tools, vaccinations and pest control) associated with the implementation of climate-resilient farming practices, adoption of adapted varieties and improved breeding, crop diversification and agroforestry options. Plant and animal breeding are a powerful instrument but requires large investment over very long periods – beyond the reach of most smallholder farmers. Smallholders are increasingly aware of the impacts of climate change on their productivity and in some cases have some knowledge, albeit limited, of potential climate change adaptation options. The lack of financial resources and limited access to these resources by most smallholders is, therefore, a key constraint to building their resilience to climate change.

48. Past IFAD interventions in Zambia, other funders' experiences, and from a sectoral analysis of constraints and opportunities show that progress on building sustainable rural finance access can only be achieved through a holistic approach, involving several actors at different points in both the financing and product value chains. In this regard, it requires: (i) a flexible approach, through which financial institutions will be supported to try out and test new, promising avenues for expansion of services to the un- and under-banked rural population; (ii) addressing knowledge gaps through capacity building over time; (iii) addressing existing gaps in regulation and supervision through capacity improvement over time (iv) documenting and scaling up of innovative practices existing in Zambia and elsewhere and (v) providing international expertise to share best practices with the local counterparts.

49. Additional stakeholder consultations have jointly been facilitated by the government of Zambia and IFAD to engage more stakeholders and to learn from other projects by development partners. From a UNDP-implemented project Strengthening Climate Resilience of Agricultural Livelihoods in Agro-Ecological Regions I and II in Zambia (SCRALA), the following lessons have been drawn from rural-implemented savings for change model:

- *Community ownership and trust*: The success of savings for changes often depends on strong community ownership. Members' collective trust and accountability create a reliable system for saving and borrowing. This shared responsibility reduces the risk of default and fosters a culture of financial discipline.
- *Accessibility for rural populations*: Savings for changes have demonstrated that bringing financial services closer to rural communities effectively bridges the gap created by the lack of formal banking infrastructure. They offer access to savings, loans, and financial literacy in areas where formal financial institutions are absent.
- *Economic empowerment*: These models have particularly empowered women and marginalized groups by enabling them to access small loans for income-generating activities. This leads to improved livelihoods and household welfare.
- *Sustainability challenges*: While effective in promoting savings and credit, sustainability often hinges on consistent capacity building and support. Weak institutional structures or inadequate training can undermine the long-term viability of savings for changes.
- *Social cohesion and group dynamics*: The group-based lending approach builds social cohesion and mutual support. However, it also highlights the need for careful group composition, as interpersonal conflicts or unequal participation can hinder effectiveness.
- *Adaptation to local contexts*: Models tailored to local socio-economic contexts are more likely to succeed. For instance, incorporating agricultural cycles into repayment schedules addresses the unique needs of rural farmers.
- *Impact of external support*: Initial external support, such as capacity building from NGOs or government programs, often helps establish savings for change. However, over-reliance on external inputs can limit the self-reliance and adaptability of the groups in the long term.

- *Financial literacy and skills*: Members often require continuous training in financial management and record-keeping to ensure the effective functioning of the savings for change model. Without this, the risk of mismanagement and loss of funds increases.
- *Scalability and linkages*: Linking savings for changes to formal financial institutions can enhance access to larger credit facilities and financial services. However, scaling up requires careful management to preserve the community-driven nature of the model.
- *Resilience against economic shocks*: The model has shown potential in building resilience against climate change shocks, such as droughts resulting in crop failures, by providing a safety net through savings and accessible credit.

50. Based on this conceptual underpinning, the project clusters activities by agro-ecological zones. For example, crop production interventions are concentrated in agro-ecological zone I and some districts in agroecological zone II. Horticulture interventions are also primarily focused on these agro-ecological zones. This approach directly addresses adaptation challenges associated with drought-prone districts within agro-ecological zones I and II. In agroecological zone III, given the abundance of freshwater resources and reliance on fishing, the fish value chain is focused on districts within this particular agroecological zone. While agroecological zone III is more prone to floods than droughts, it also experiences persistently high poverty levels, averaging 83%, with populations relying on exploiting natural resources, sometimes depleting resources such as fish (a detailed description of the zones is in annex 4).

Project Area and Target Group

51. CALRF will be implemented in 15 districts in five provinces, representing three agro-ecological zones. With varying degrees, agriculture is the main socioeconomic activity common to all the provinces – highlighting the dependence of rural communities on land and forests for their livelihoods. These agricultural activities involve crop and animal production and fishing. Maize, being Zambia's staple food, is grown in all the five provinces.

52. The absence of alternative and diversified income sources in the face of climate change, specifically extreme weather events, combined with the depletion of ecosystem services through deforestation and land degradation, undermines the adaptive capacities and resilience of rural communities, particularly those with limited asset portfolios. It should be noted that the climate-related risks to agricultural households in each province are a function of both the impact of climate change on crop production, as well as the adaptive capacities of each community to manage and respond to climate risks.[35]

53. Rural communities have a vulnerable context that needs to be addressed through broadening their socioeconomic base by diversifying livelihood options, but also improving their access to innovative financing services and capacity to make better informed investment decisions in climate-sensitive sectors. These include agricultural production systems, sustainable capture fisheries, aquaculture, infrastructure, among others. Other areas of interventions include the promotion of off-farm livelihood opportunities to lessen the reliance and overexploitation of natural resources.

54. The design of CALRF has largely been informed by lessons from the IFAD-financed Rural Finance Expansion Programme (RUFEP) that closed in last year, particularly component 2 on improving the financial inclusion of rural communities and their ability to invest in climate-sensitive sectors. Building upon RUFEP that has been supporting community access to financial services across Zambia, the implementation of CALRF will target the Central, Luapula, Southern and Western provinces. CALRF has been designed to capitalize upon existing interventions such as RUFEP , particularly with regard to community saving groups and financial institutions in the project area. In addition, CALRF will capitalize on existing institutional arrangements at national and sub-national levels, involving project partners such as community-based organizations and financial service providers in 15 districts CALRF and RUFEP districts overlap, creating opportunities for synergies in some cases and scaling up best practices in others. CALRF will build synergies with a new IFAD project, the Financial Inclusion for Resilience and Innovation Project for Rural Zambia (FIRIP), currently under design. In particular, FIRIP will provide improved access to a diverse range of

[35] Hunter et al. 2020. Research Highlights – Climate Change and Future Crop Suitability in Zambia. University of Cape Town, South Africa, undertaken in support of Adaptation for Smallholder Agriculture Programme' Phase 2. IFAD, Rome.

financial services enabling rural smallholders and Micro, Small Medium Enterprises (MSMEs) to better manage risks, increase productivity, and invest in green and climate-resilient technologies. FIRIP will foster the expansion of client-centred financial services at scale by combining capacity strengthening of Financial Service Providers (FSPs) with improvements in the enabling environment.

55. In this regard, the choice of CALRF's districts has been underpinned by:

- The vulnerability of the socioecological systems in the districts and poverty levels that constrain people's ability to cope with the extreme weather events that Zambia has been experiencing in the past years;
- The viability and sustainability of alternative and diversified livelihood options that CALRF is proposing to build adaptive capacities and strengthen people's resilience;
- The gravity of experienced and projected level of floods and droughts – evidenced by the number of affected people, the spatial and temporal scale of the impacts on land, food security, water supply and disease outbreaks; and
- The existence and or proximity of extension services and other partners to support the delivery of services and activities of CALRF, particularly component 2.

56. **Target group**: The project seeks to support the diversification of livelihoods of rural communities in vulnerable socio-ecological contexts triggered by climate change (extreme weather events, animal and crop disease outbreaks associated with changing temperatures and rainfall patterns), anthropogenic factors (deforestation, land degradation, unsustainable production systems, poor and or non-infrastructure development), and generalized lean asset portfolios, which do not enable them to adapt to the impacts of extreme weather events and devastations of animal and crop disease outbreaks. In rural areas, where financial inclusion is significantly lower at 55.9% compared to the national average of 69.4% (an increase from 59.3% in 2015), the target population faces challenges accessing financial services. The growth is mainly attributed to increased uptake of mobile money services (Finscope, 2020). Access to formal credit for small-scale agricultural producers is, however, extremely low. The cost of credit is very high; most of the available credit is short-term and credit is not yet extensively distributed as a digital financial service, which would lower its cost. This affects rural communities, and women are particularly more affected compared to the men folk. De-risking market entry, cost sharing, market research, capacity building; and piloting new products and delivery mechanisms remain important areas to improve the current context of financial inclusion.

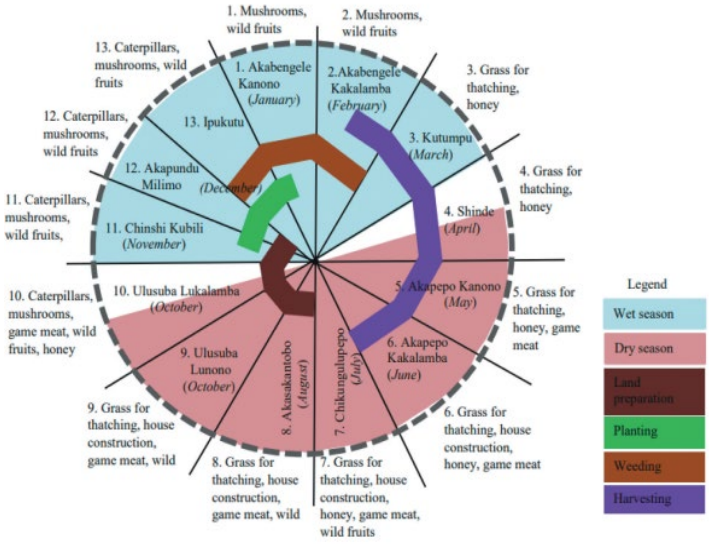


Figure 9: Community use of land and forest resources January-December

57. The target rural populations almost entirely depend on the use of natural resources, which are under immense pressure from both natural factors and anthropogenic impacts. Figure 9[36] shows a typical calendar of rural communities in central Zambia during the year (from January to December) -highlighting the lack of alternative livelihood income streams. This overreliance also reveals limited or non-existence of socioeconomic opportunities to diversify and depend less on the use of natural resources through agricultural activities – lack of diversified and off-farm livelihood opportunities locks vulnerable and poor communities in further socioeconomic doldrums.

[36] Chilombo, A. (2021). Questioning the narrative of land marginality in large-scale land acquisition deals: case study of Nansanga Farm Block in Zambia, *Journal of Land Use Science*

58. It should be emphasized here that the specialisation in the use of natural resources in a rural context of economic scarcity characterizes people's vulnerability. The natural resources on which they almost depend for their survival are the mercy of the vagaries of extreme weather events, particularly droughts and floods. Droughts negatively impact productivity per area cultivated (and the sizes of land cultivated are already small, barely more than 2 ha – cultivated using primitive tools such as hoes and axes and only during the season which has also begun shrinking due to climate change) and availability of wild fruits which play a critical role as food in times of scarcity.

59. Regarding floods, rebuilding life after property has been destroyed due to flash floods is a far-fetched dream for rural communities. The asset portfolio of selected districts as rural communities is too lean to enable people to rebound from extreme weather events easily. Therefore, building and increasing their resilience to unlocking vulnerability, it is important to support diversified and resilient livelihoods options. Diversification is key to avoid 'having all their eggs in one basket', which is their reliance on the exploitation of natural resources, which are also subjected to both climate change and anthropogenic pressures.

60. Generally, livelihoods in the prioritized districts are largely agricultural, and reduced rainfall has led to crop shortages in recent years. For example Western (where Mwandi and Sesheke are CALRF districts) and Southern Provinces (where Monze, Choma, Sinazongwe, Kalomo and Kazungu are CALRF districts) are located in semi-arid regions, with mean annual rainfall ranging between 600 mm– 800 mm. Western Province, Zambia's largest administrative jurisdiction (with 14 districts), is where the country's logging and rice industries are concentrated. Southern Province is a maize- and sugar-producing region of Zambia and home to the country's premier tourist attraction, Mosi-oa-Tunya (Victoria Falls), which is shared with Zimbabwe. As throughout Zambia, a majority (~ 85%) of households employed in the agriculture sector in these districts are smallholder farms, with maize being the dominant agricultural crop, grown by over 82% of households. Both provinces have experienced rainfall anomalies over the last decade, including a particularly profound drought beginning in 2018–2019 that has persisted through 2020–21. Limited infrastructure and support for climate-responsive agricultural practices have also rendered these districts particularly susceptible to poorer crop yields in times of drought. Fewer than half (45%) and 40% of Zambian

farmers do not use fertilizer on their fields and plant hybrid maize seeds, respectively, rendering agricultural outputs particularly vulnerable to rainfall anomalies.[37]

61. The project recognizes the differential access to socioeconomic opportunities between rural communities and urbanites, but also cultural biases that limit women's access to building their resilience and adaptive capacities through equitable access to natural resources, financial services and decision-making processes regarding the management and governance of resources and livelihood options. In a similar vein, the project is cognizant of the role of the youth so that rural areas can reap the demographic dividend – however, opportunities for them to participate in socioeconomic activities are extremely limited, and in some cases, simply non-existent. Therefore, acknowledging the challenges of women and the youth, the project will be deliberate about engaging rural communities to ensure women and the youth get a fair share of the socioeconomic benefits of the project while playing their role in the implementation of the project to achieve its development objective. This will particularly be critical to ensure financial inclusion of women and the youth, and build their financial capacities and literacy alongside men. It should be mentioned that women have been shown to be more likely to make long term investments than men and lessons learnt in financial inclusion, show that women are more likely to repay debt than men.

62. In terms of the number of beneficiaries per province and district, the project will directly impact 43,400 people or 8,680[38] households as detailed in **Table 1** below:

Table 1: Overview of the characteristics of the population in the targeted districts

Province	District	Est. beneficiaries		Total per province (% of pop.)	# of households	District population	Provincial head count poverty[39]
		Male	Female				
Central	Chibombo	4,500	4,500	9,000 (2%)	1,800	250,702	57%
	Luano					36,082	
	Mkushi					182,171	
Northern	Lunte	1,200	1,200	2,400 (25%)	480	9,480	83%
Luapula	Chiengi	6,000	6,000	12,000 (2.3%)	3,200	150,892	83%
	Mwansabombwe					57,879	
	Nchelenge					203,432	
	Kawambwa					113,881	
Southern	Monze	8,000	8,000	16,000 (1.6%)	2,400	224,680	59%
	Choma					217,385	
	Kalomo					277,172	
	Sinazongwe					127,053	
	Kazungula					154,995	
Western	Mwandi	2,000	2,000	4,000 (4.7%)	800	31,265	84%
	Sesheke					54,717	
Total	15	21,700	21,700	43,400	8,680	2,082,306	Av. 73.2%
			Grand total				

Project Objectives:

63. It has been shown that Zambia has experienced several extreme weather events, including droughts and prolonged dry spells, seasonal and flash floods and extreme temperatures - droughts in some areas and floods in others and temperature rise are projected to increase in frequency and intensity; potentially threatening food and water security, energy sources and livelihoods of communities. Almost entirely dependent on degrading natural resources, these rural communities hardly have any adaptive capacities to cope with extreme weather events owing to their lean asset portfolio. It should be reminded that the situation has been even direr given the COVID-19 pandemic to which the already meagre national financial resources were allocated at the expense of ensuring preparedness programs

[37]Rosen, J.G., Mulenga, D., Phiri, L. et al (2021). "Burnt by the scorching sun": climate-induced livelihood transformations, reproductive health, and fertility trajectories in drought-affected communities of Zambia. BMC Public Health

[38] Estimates based on Zambia Statistics Agency, Ministry of Health (MOH) Zambia, and ICF. 2019. 2018 Zambia Demographic Health Survey Summary Report. Lusaka, Zambia: Zambia Statistics Agency, MOH, and ICF – who have estimated that the average household size in Zambia is 5.0 persons

[39] Estimates based on Mphuka, C. et al (2017). Economic growth, inequality and poverty: Estimating the growth elasticity of poverty in Zambia, 2006-2015

against climate change-related events. With an average poverty level as high as 73.2% of the population in the five target provinces, communities can hardly cope with external shocks on their already vulnerable and precarious socioecological context. The project's primary objective is to increase the resilience and build adaptive capacities of rural populations through access to finance for investments in adaptation solutions and best practices, enhanced by institutional and financial innovation mechanisms (products, systems). Empowering people in communities with relevant knowledge to shift towards investment in climate change adaptation is integral to the primary objective.

64. Within this complex vulnerable context, the overall objective of the project is to build and enhance resilience and adaptive capacities of 43,400 people (8,680 households) to cope with extreme weather events through promoting diversified, resilient and sustainable community livelihood options and facilitating access to finances for investments in climate-sensitive sectors.

Project Components and Financing:

Project/ Components	Expected Concrete Outputs	Expected Outcomes	Amount (USD)
Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options	Output 1.1. National and district-level extension agencies are capacitated to support uptake of resilience measures and sustainability of Grant Facility Output 1.2. Communities are aware and have capacity to trigger behavioural change to support the uptake of resilience measures Output 1.3. Supply of locally-adapted resilient seeds, fish fingerlings and feed is established **Output 1.4: Improved market access through crossing points rehabilitation and construction**	Outcome 1. Fostered national and local level technical capacity to support the uptake of resilience measures	2,967,400
Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options	Output 2.1. Grant Facility is established and operational to finance resilient sub-projects in the aquaculture, capture fisheries and agriculture sectors Output 2.2. Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects	Outcome 2. Promoted and diversified livelihood options strengthen the resilience and build adaptive capacities of vulnerable communities to climate change-related extreme weather events in five provinces in Zambia (Luapula, Northern, Central, Southern and Western)	7,136,600
Component 3. Enhancing knowledge management for evidence-based adaptation planning	Output 3.1. Creation of a Knowledge Dissemination and Management Strategy (KMS) to sustain the uptake of climate-resilient fish and agricultural production Output 3.2. Long-term and locally led adaptation planning is secured	Outcome 3. Enhanced availability of reliable data and information to sustain fish and fruit value chains	454,000
Project activity cost (A)			10,558,000
Project Execution costs (including M&E) (B)			**1,105,691**
Total Project Costs (A+B)			**11,663,691**

Project Cycle Management Fees charged by the Implementing Entity (if applicable) (8.5%) (C)	**991,412**
Total Amount of Financing Requested (A+B+C)	**12,655,103**

A. Projected Calendar:

Milestones	Expected Dates
Start of Project Implementation	January, 2026
Mid-term Review (if planned)	September, 2028
Project/ Closing	June, 2030
Terminal Evaluation	September, 2030

PART II: PROJECT JUSTIFICATION

65. The project is designed to build the resilience and adaptive capacities of rural populations in a complex vulnerable context characterised by lean asset portfolios, continued resource degradation, isolation from political powers, limited financial resources to invest in socioeconomic climate-sensitive activities – and areas experiencing extreme weather events in terms of floods in some areas and droughts in others – and these are projected to continue in terms of frequency and intensity. To address the complex context in five provinces, the project proposes a set of concrete adaptation interventions, primarily meant to build the so much required socioecological resilience and adaptive capacities of affected poor communities, by enabling access to grant finance and technical assistance. Finally, the project acknowledges the critical role of community capacities and institutional arrangements as enablers to sustain the transformative impacts of concrete interventions.

66. Consistent with the barriers that have been identified as hampering adaptation efforts, the project is structured around three main components:

1. Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options
2. Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options
3. Component 3. Enhancing knowledge management for evidence-based adaptation planning

Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options

Output 1.1. National and district-level extension agencies are capacitated to support uptake of resilience measures and sustainability of Grant Facility

Activity 1.1.1 Development of recommendations report and update of relevant sectoral training manuals and technical guidelines

First under this activity, the project will undertake an assessment of institutional processes, knowledge processes, communication channels and materials across national extension structures. A gap analysis and an assessment of inter-institutional collaboration for top-down adaptation planning will be carried out, with a view to identifying gaps in the delivery of extension services to crop and fish producers. The objective of this activity is to support functional institutional alignment and delivery of extension services. The PMU will procure international and national consultants to carry out this analysis. Based on the findings of this analysis, training manuals and technical guidelines on sustainable horticulture, fisheries and aquaculture will be updated and made available in collaboration with the Ministry of Agriculture and the Ministry of Fisheries and Livestock. This will ensure that the extension officers have access to relevant and up-to-date extension techniques tailored to the local agro-ecological conditions and adaptation options.

This activity will contribute to expand the knowledge base and tools used by national and district-level extension officers while streamlining and increasing the efficiency and effectiveness of extension service delivery in the target districts and beyond. The training to be provided to national and district-level extension officers under Activity 1.1.2 will be based on best practices and updated technical guidelines in agriculture, livestock and fisheries, thereby enhancing the quality of extension services and as a result the adaptive capacity of communities benefitting from extension services. The expected impact will be the availability of updated technical guidelines and training tools for 1,500 camp extension officers, and enhanced institutional processes for climate adaptation and sectoral planning at the national level for line ministries.

As part of this activity and in alignment with the Gender Action Plan, the assessment will include a training needs assessment for women extension officers,and will see the development of a Gender Strategy for extension service delivery.

Activity 1.1.2. Delivery of training and capacity building for national extension services

This activity will offer a comprehensive refresher training course on sustainable horticulture, agroforestry, aquaculture and fisheries targeted at 1,500 camp extension officers from the 15 districts (approx. 100 people trained per district) from the Ministry of Agriculture and the Ministry of Livestock and Fisheries. Quarterly workshops will be organised in each district in Year 2. This training will equip them with the necessary knowledge and skills needed to provide effective extension services to farmers in a practical manner to support the long-term sustainability of sub-projects financed by the Grant Facility to be established under Component 2. Extension agents trained will provide pre- and post-grant technical assistance for grantees by advising on the technical specifications, operations and maintenance of projects (under Component 2). Local extension agents have a comparative advantage of understanding the local sociocultural, environmental, and language context, therefore ensuring effective communication and fostering buy-in from communities.

Moreover, to overcome the camp extension officers' mobility limitations, about 500 of them will participate in a rural mobility pilot and be equipped with sturdy bicycles. It will also help to decarbonise the local transport system. For this, about 250 extension officers each will be identified by the Ministry of Agriculture and the Ministry of Livestock and Fisheries as having high benefit potential in terms of increasing their outreach with better mobility. The bicycles will be affordable, heavy-duty, durable, simple so that not many parts can break, and easy to repair with local tools. Such bicycle exist in the market in Zambia. A local maintenance service will be established, which will involve technical and business training about 25 youth selected by the communities as bicycle mechanics and providing them with basic tools and spare parts. The pilot will be implemented by an agency with solid experience in rural mobility packages, combining the supply of bicycles according to the above specifications and the establishment of a sustainable rural repair structure. A study[40] of a comparable community mobility initiative in Zambia has shown that community health works with bicycles served 63% more households than those without.

Under this activity, the concrete adaptation impact will be the increased capacity for 1,500 camp extension officers in best practices for resilient agricultural, livestock and fisheries production, which will directly support the implementation of sub-grants under Component 2 and the delivery of high-quality extension services during the project lifetime and beyond. Further, 500 extension officers will be equipped with bicycles to facilitate and accelerate the delivery of extension services in less accessible areas thereby supporting the uptake and close monitoring of resilience measures.

Gender-responsive activities undertaken as part of 1.1.2 will include the organization of training sessions to accommodate women's schedules and responsibilities; and the inclusion of a gender-sensitive lens in training manuals on the specific needs and vulnerabilities of women smallholders.

Output 1.2. Communities are aware and have capacity to trigger behavioural change to support the uptake of resilience measures

[40] https://worldbicyclerelief.org/wp-content/uploads/2024/10/WBR-Endline-Report-2024.pdf

Activity 1.2.1. Conduct consultations with communities and traditional leaders to collect information on needs and priorities for district-level adaptation planning

This activity will support Activity 3.1.2. for the development of district-level adaptation strategies especially considering women and youth's needs and priorities. Data would be gathered across the 15 target districts through focus groups and community-wide workshops to inform the district-level adaptation strategies from the bottom-up. This would secure buy-in from communities and traditional leaders, and ensure the strategies are locally appropriate.

Concrete adaptation activities under Activity 1.2.1 will be the organization of 15 workshops (one in each target district) targeting approximately 10,000 direct beneficiaries to conduct consultations by gathering communities including smallholders involved in agriculture, livestock and fisheries, women, traditional authorities, youth and vulnerable and marginalized groups. National consultants will facilitate the consultations in the appropriate local language (as relevant depending on the district) and seek to identify priority adaptation actions and vulnerabilities from communities. This activity will generate significant adaptation results including the collection and inclusion of communities' needs and priorities in district-level adaptation planning tools (under Activity 3.1.2). This process will result in greater community ownership and engagement to support adaptive actions tailored to local ecosystems and landscapes.

Gender-responsive activities will include the inclusion of discussion on GBV as part of the 15 workshops, as well as gender-responsive adaptation. Additionally, gender-sensitive priority adaptation actions identified by women will be documented for inclusion in the district-level adaptation planning strategies.

Activity 1.2.2. Awareness raising and delivery of training to communities and traditional leaders based on updated information in training manuals, technical guidelines

In this activity extension agents from the Ministry of Agriculture will provide training to communities including traditional leaders using the updated technical guidelines and training materials (developed under 1.1.1) for sustainable agriculture, livestock production, capture fisheries and aquaculture. It is envisaged that 45 training sessions will be organized across the 15 target districts (one for each thematic area – agriculture, livestock and/or fisheries as relevant) in each district, representing approximately 2,500 direct beneficiaries. The training materials and updated technical guidelines will be adjusted in a way that is context-appropriate to match the technical level of the target audience. This training will foster the uptake of resilience measures to be implemented under Component 2 by capacitating communities at large and potential sub-grantees to sustain resilience measures and investments.

Further, a Training of Trainers approach will be utilized for ward- or sector-level community farmer champions who could support farmers at the local level, whereby approximately 30 farmers per district will be selected to be training champions. This approach would help bridge the gap in extension services at the grassroots level while also enabling access to reliable information on sustainable agriculture, livestock and aquaculture production practices to communities in the most remote areas.

To ensure gender-responsiveness, training sessions will be organized in accordance with women's schedules and responsibilities. Further, an overall target of 30% training beneficiaries will be women, and 50% of selected Training Champions.

Output 1.3. Supply of locally-adapted resilient seeds and fish fingerlings and feed is established

Activity 1.3.1. Support to resilient seed production at the local level through the creation of demonstration plots and training of farmers

Under this activity, the project will leverage on key partnerships, mainly the Seed Control and Certification Institute (SCCI) and Zambia Agriculture Research Institute (ZARI) and seeds producing companies such as Kamano Seed Company to facilitate the production of climate-resilient seeds in the 15 target districts, ensuring that farmers can access

high-quality seeds tailored to their local conditions. The project will establish demonstration and seed production plots covering approximately 2,500 ha across the 15 target districts, and train selected local farmers as seed growers, enabling them to produce and supply climate-resilient seeds within their communities, which will support sub-grants under Component 2. Concrete adaptation outputs generated by this localized approach include the establishment of a reliable seed supply chain that will ensure consistent access to seeds for farmers, increasing the resilience of agricultural production to identified climate change drivers of droughts and extended dry periods. Further to this end, this activity will facilitate the formation of 15 Community Seed Banks (one per target district) within the seed producer groups to enhance the accessibility and availability of diverse inputs to smallholder farmers in drought-prone areas. Community Seed Banks will play a vital role in ensuring seed security and ultimately food and income security. This activity will address the insufficient supply of climate resilient inputs particularly legumes and small grains such as cowpea, groundnuts, and sorghum.

In accordance with the Gender Action Plan, 30% of seed growers trained will be women, and 50% of community seed banks (at least 7) will be managed by women.

Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations
So far, there is a significant shortfall in the supply of fingerlings essential for aquaculture in the province. The sole government-run Fiyongoli Hatchery is struggling to meet demand, exacerbated by the Fisheries Act of 2011, which prohibits the use of fingerlings from other regions. It has been reported as part of stakeholder consultation that pond owners sometimes have to wait 18 months for fingerlings to be received. Additionally, as natural fish stocks dwindle, local fish traders are increasingly importing fish from southern regions to meet local consumption needs. This underscores the urgent need for new hatcheries in the target project area to support communities engaged in fish farming, and those who will engage in aquaculture production as incentivized by the Grant Facility under Component 2. Further, existing pond owners struggle to reliably obtain fish feed, which is imported and needs to be transported over large distances. As a result, fish pond owners reduce the feed intake, and fish does not grow at the expected rate, resulting in longer production timeframes and reduced yields and income.

To appropriately ensure the sustainability of its outcomes, and to support the uptake of aquaculture production as an alternative to capture fisheries, the project will finance the construction of two hatcheries and two fish feed plants, located in Nchelenge district, which is centrally located among the northern districts where the majority of aquaculture production is taking place, and as to optimise transport and operational costs. These facilities will secure the supply of essential inputs for aquaculture production, whereby grant recipients under the Grant Facility will have access to the inputs required for their enterprise, while constituting a national stock of fingerlings and feed to support the creation of other small-scale hatcheries and feed plants.

It is expected that after the project ends, the hatcheries and feed plants will be endorsed and managed by the district-level extension services under the Ministry Fisheries and Livestock, as demonstrated in the sustainability plan. During the design phase of the proposed project, the Copperbelt University (CBU) has supported the development of indicative technical specifications. The CBU will be a key technical partner under this activity, to ensure the appropriateness of the hatchery according to design specifications, and as providers of technical assistance for aquaculture production under the TA arm of the Grant Facility (Component 2).

Prior to construction, the project will finance the necessary preparatory studies such as site surveys, technical specifications and design plans. Indicatively, the hatcheries will include the following components (Table 2):

Table 2 Hatchery components

Components	Items
Greenhouse Structure	• Frame: Steel or aluminum frames are common. • Covering: Polyethylene film or polycarbonate panels. • Climate Control: Ventilation fans, heaters, and cooling systems.
1 x 5 Room and 1 x 1 Room Structures	• Office: For administrative tasks. • Meeting Room: For discussions and planning. • Storeroom: For storing equipment and supplies.

	• Ablution: Restroom facilities. • Fingerlings Packaging & Loading Bay: For packaging and loading fingerlings. • Guard Room: For security personnel.
Solar Power System	• Solar Panels: Photovoltaic panels to generate electricity. • Inverters: To convert solar energy to usable electricity. • Batteries: For energy storage to ensure a constant power supply. • Installation: Professional installation and setup.
Borehole, Water Reservoirs, Stand and Water Reticulation	• Drilling and Installation: To provide a reliable water source. • Storage Tanks: For storing water from the borehole. • Pipes and Stands: For distributing water throughout the hatchery. • Septic System: For waste management.
Breeding and Rearing Units, Fishponds, Sedimentation ponds	• Hapas: Net enclosures for breeding. • Nursery Tanks: For fry and fingerling rearing. • Broodstock Ponds: Two ponds for housing broodstock. • Sedimentation Pond: For treating hatchery effluents.
Water Systems	• Tanks: Fiberglass or concrete tanks for breeding and rearing. • Pumps: For water circulation and aeration. • Filtration: Mechanical and biological filters to maintain water quality.
Perimeter fence	• Fencing: To secure the hatchery premises.
Monitoring and Maintenance Equipment	• Water Quality Test Kits: For monitoring pH, ammonia, nitrites, etc. • Thermometers and Hygrometers: For temperature and humidity control.

It is anticipated that the fish feed plants will be built next to or near the hatchery facilities. Indicative components and associated items are described below (Table 3):

Table 3 Fish feed plants components

Components	Items
Feed processing equipment	• Grinders: For grinding raw materials. • Mixers: For blending ingredients. • Extruders: For shaping and cooking the feed. • Dryers: For reducing moisture content. • Coolers: For cooling the feed after drying. • Packaging Machines: For packing the finished feed.
1 x 4 and 1 x 1 Room Structures	• Feed Making Plant: For processing and producing fish feed. • Storeroom for Feed and Ingredients: For storing raw materials and finished feed. • Storeroom for Equipment: For storing machinery and tools. • Feed Loading Bay: For loading and dispatching the finished feed. • Office: For administrative tasks. • Guard Room: For security personnel.
Solar Power System	• Solar Panels: Photovoltaic panels to generate electricity. • Inverters: To convert solar energy to usable electricity. • Batteries: For energy storage to ensure a constant power supply. • Installation: Professional installation and setup.
Borehole, Water Reticulation, Septic Tank and Soaker Way	• Drilling and Installation: To provide a reliable water source. • Pipes and Stands: For distributing water throughout the plant. • Septic System: For waste management.
Perimeter fence	• Fencing to secure the plant premises
Monitoring and maintenance equipment	• Quality Control Equipment: For testing feed quality. • Maintenance Tools: For regular upkeep of machinery

Output 1.4: Improved market access through crossing points rehabilitation and construction

Activity 1.4.1: Rehabilitation and construction of five culverts to enable rural communities to access aggregation centers, inputs, social services and markets during and after extreme weather events

In addition to strengthening institutional and community capacities, Component 1 will also address the physical and infrastructural barriers that limit the uptake of resilient livelihoods and services. Following consultations with the Ministry of Green Economy and Environment as detailed in Annex 5, output 1.4 will help rural communities adapt to extreme weather events through the rehabilitation or construction of five 6 to 12m reinforced concrete culverts in selected flood-prone crossing points across five districts—Kalomo, Monze, Kazungula, Sesheke, and Luano. Each site represents a critical bottleneck in the rural road network that becomes inaccessible during extreme weather events, particularly floods, significantly disrupting mobility, market access, and livelihoods. The aim is therefore to help rural communities adapt to extreme weather events and ensure year-round connectivity between productive zones, aggregation centers, markets, input suppliers, and essential services such as health and education. These investments have been proposed by the consulted Ministry of Green Economy and Environment and directly respond to community-identified priorities and complement institutional strengthening and extension services supported under Outputs 1.1 to 1.3. The crossing points constitute partially unidentified sub-projects (USPs) in as much as the activities are defined but the exact locations will result from technical feasibility studies, consultations with district-level authorities, traditional leaders, extension officers and local producers, ensuring community ownership and alignment with district development plans.

With a total cost of USD 1.25 million (USD 250,000 per site), this output will directly support the long-term viability of investments financed under Component 2, by ensuring producers and entrepreneurs retain consistent access to markets and services.

Location of Crossing Points

Province	District	Nature/ Type	Estimated Cost (USD)
Central	Luano	Culvert	250,000
Southern	Kazungula	Culvert	250,000
Southern	Monze	Culvert	250,000
Southern	Kalomo	Culvert	250,000
Western	Sesheke	Culvert	250,000
			1,250,000

Estimated cost per crossing point

The estimated cost per culvert/crossing point is about USD 250,000 broken down as follows:

Item	Cost in USD
Site Survey/ Technical Feasibility Studies/ Design	20,000
Civil Work	200,000
Supervision and Community Coordination	30,000
Total	250,000

Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options

To unlock the fish and fruit tree value chains, the project will focus on addressing the barriers that affect smallholder value chain profitability, particularly women and youths, and hamper adaptation from taking place. These challenges include limited access to inputs, finance, training, and poor infrastructure for market access. This is particularly the case in Zambia, where it has been established that poor liquidity and low levels of financial inclusion constrain smallholder farmers – and this leads to lower output, lower sales, and less likely participation in market policies like the Food Reserve

Agency. Building on the liquidity constraints among smallholders farmers, the scientific basis of component 2 is the understanding that lack of formal financial access impacts small-scale farmers' ability to deal with and recover from shocks, including extreme weather events, and that increasing farmers' access to financial services at community level will not only raise their productivity, e.g. improve access to inputs but also their resilience.

Lack of financial resources to invest in climate-resilient production systems is one of the most serious hurdles that vulnerable communities face. This is compounded by the fact that the private sector is risk-averse to smallholder production systems and does not offer adequate financial mechanisms and solutions for them. Additionally, there is limited knowledge about innovative investments in specifically climate-sensitive sectors, or how to appropriately conduct the due diligence of these investments.

While rural communities in the target districts live below the poverty line, they are also faced with extreme weather events that erode even the meagre means of livelihoods and coping strategies they have. In this context, it is impossible for them to (re)build their resilience and adaptive capacities by investing in production landscapes and other sectors sensitive to climate change and climate variation. These barriers call for the establishment of a demand-based grant facility to support the uptake of resilient projects in the target districts.

The decision regarding the potential list of investments and interventions has partly been informed by asset portfolios (including infrastructure development, crop production systems, among others) in the target districts, level of community awareness of the climate risks in their areas and the potential of the options to enhance the resilience and build adaptive capacities. Regarding asset portfolio, the project will support hardware interventions in infrastructure to support the diversification process of livelihoods by looking at both on and off-farm opportunities. Off-farm livelihoods can spur a non-farm rural economy with important positive knock-on effects that can trigger a more rapid poverty reduction than focusing on farming alone – further strengthening people's resilience and adaptive capacities. The project will support infrastructure development and raise awareness – the rationale is embedded in the understanding that rural adaptation cannot be separated from dealing with existing rural development problems, since the causes of those problems are also highly likely to be barriers to successful adaptation, especially for poor people.

It can be expected that coupled with interventions under Components 1 and 3, a "snowball" effect will occur whereby the economic viability and profitability of resilient projects in the agriculture, fisheries and aquaculture sectors will be demonstrated, encouraging further individuals and community groups to seek technical assistance and financing, and triggering behavioural change that will be sustained through the improved delivery of extension services and the integration of community needs and priorities into district-level adaptation strategies.

Output 2.1 Grant Facility is established and operational to finance resilient sub-projects in the aquaculture, capture fisheries and agriculture sectors

In recent years, the use of unsustainable fishing gear has surged alongside a fourfold increase in the number of fishers in Luapula Province. This growth has exerted significant pressure on capture fisheries, which involve harvesting fish and other aquatic organisms directly from natural water bodies such as rivers and lakes, leading to further depletion of fish stocks and destruction of local aquatic habitats. Climate change is poised to exacerbate these issues, increasing the vulnerability of communities reliant on fishing. While Zambia has some capacity to address these challenges, climate change remains a formidable obstacle, with the potential to severely affect fish populations. By financing sub-projects in the capture fisheries thematic area, the project will trigger behavioural change and enable the adoption of sustainable fishing practices to relieve pressure on fragile and vulnerable ecosystems. The objective is not to increase fishing intensity but to alleviate pressure to avoid overfishing, hence the focus on existing fishers only.

In line with this, the project aims to promote aquaculture as a sustainable alternative source of fish, and will focus on endemic fish species found in the target areas, such as the cichlid species (notably Oreochromis macrochir and Coptodon rendalli) that hold significant market value in the target districts. This strategy will enhance the adaptability of fishing communities to the effects of climate change. It aligns with the National Fisheries and Aquaculture Policy of 2022-2026,

which includes key objectives such as promoting sustainable fish production, improving market access, preventing environmental degradation, and addressing crosscutting issues within fisheries and aquaculture.

The highlighted impacts of reduced fish catches are likely to leave the local people socio-economically vulnerable to the risks of climate change. For example, the projected impacts of climate change on fisheries will lead to low fish catches, undermine household incomes and exacerbate the already high poverty levels. Given the proportion of people that depend on the capture fishing industry in the province, there is an urgent need to increase the resilience of these communities to the shocks of climate change by building their capacity in fish farming practices as an alternative source of their fish needs. Unfortunately, lack of access to fingerlings and high cost of fish feeds remains the major problems among fish farmers in the province. Therefore, by financing sub-projects in the aquaculture thematic area, the project will increase the production of high-value fish therefore increasing both income and food security. The promotion of aquaculture to produce milkfish will incentivise local communities to diversify and improve their livelihoods while protecting ecosystems fragilized by resource depletion and climate change.

Zambia's climatic conditions are favourable for the production of fruits. For example, Mango (Mangifera Indica) is a fruit that is widely produced in all rural districts of Zambia, yet over 80% of the fruit goes to waste every year due to its highly perishable nature and the lack of appropriate technologies to preserve, process, add value to the raw fruit and commercialize it across the prioritized districts. It is estimated that rural small-scale farmers in Zambia produce about 19,000 tons of mango annually. Of this, less than 2,000 tons are sold every year due to lack of market linkages despite the high demand, but also a large portion of the fruit rots as fresh fruit on the ground. With so much potential to contribute to community income streams, the community members lack basic, affordable equipment and technical know-how to preserve the fruit for sale. IIn addition, there is a growing market for mango juices, nectars and snacks in Zambia and in Southern African Region. Others include macadamia nuts and Hass avocado trees that will be focused more in Luano Valley in Luano district. Luano Valley, is ideal for macadamia nut cultivation, attracting small-scale farmers due to the high market value and global demand for the nuts. However, the initial costs of establishing orchards are high, requiring significant investment in seedlings, irrigation, and agricultural inputs. Proper processing facilities are needed to prevent post-harvest losses, which are currently an issue in rural areas. The global demand for macadamia nuts, driven by their health benefits, presents an opportunity for small scale farmers and establishing local solar-powered processing facilities can increase the crop's value. Through the financing of sub-projects in the horticulture/agriculture thematic area, the project will contribute to the restoration and rehabilitation of the landscapes in the target districts while fostering sustainable agricultural practices and increasing agricultural outputs for food and high-value crops. This will ultimately result in increased income and food security for communities.

Activity 2.1.1 Establishment and operationalisation of the Grant Facility

To support the uptake of resilience measures in the horticulture, fisheries and aquaculture sectors, and to incentivise existing producers to change their production methods to combat overfishing, soil degradation and low yields exacerbated by identified climate change impacts, this activity will see the establishment and operationalisation of a Grant Facility. The combined delivery of technical assistance and financial support in the form of sub-grants will promote lasting behavioural change among vulnerable smallholders, by enabling access to targeted design and operational support for resilience measures, and by unlocking financing for on-farm adaptation activities that are too small or perceived as too high risk by commercial lenders. The Facility will support interventions and investments in the three thematic areas by enabling the technical assessment, design, costing and O&M of sub-projects, including E&S assessments and plans, O&M plans and technical specifications in compliance with AF's requirements and policies on partially Unidentified Sub-Projects (USPs) and the ESG Policy. A description of the governance and institutional arrangements, screening procedures of the Grant Facility are provided in the Section on implementation arrangements.

The outreach documentation to be developed to raise awareness of the Grant Facility will include specific provisions to enable women's access to the TA and financing offered. Outreach materials will be reviewed and tailored by a hired Gender consultant who will see the provision of gender-responsive TA throughout the implementation of the GF.

This mechanism will be composed of two operational arms:

Technical Assistance

The TA Facility will provide pre- and post-sub-grant support for candidate grantees, including women and youth, to ensure the accessibility of the offering to all. The pre-grant support will have the objective of developing resilient, climate and locally appropriate sub-projects that display high impact potential and sustainability. The post-grant support will pertain to technical assistance in production systems and methods, operational management of the infrastructure and equipment financed, as well as their maintenance and sustainability. This package of assistance will enable the design, development and implementation of viable, profitable sub-projects in the 15 target districts, ultimately resulting in an increase in the adaptive capacity of vulnerable communities and individuals through increased resilience of ecosystems and production landscapes, increased income, and poverty alleviation.

To deliver the technical assistance, CALRF will partner with lead technical partners at the Copperbelt University on fisheries and aquaculture, and HODI and ReSEI on fruit tree value chain development. Identified Financial Service Providers (FSPs) will support capacity building in financial literacy, business management and accounting, while external consultants may be called on case by case basis, for example to support the development of Environmental and Social Management Plans.

Financing Facility

The Grant Facility will award an estimated 220 grants, split in 195 individual grants (representing 975 beneficiaries including 30% women) and 25 community grants (representing 1,250 people including 30% women-led community groups) for a maximum funding amount of USD 25,000 and USD 50,000, respectively. The estimated total number of grantees is therefore 2,225 people (of which 30% women) who will benefit from targeted technical and financial support for resilience measures, thereby demonstrating the climate and economic sense of resilient production. The profiles of beneficiaries targeted by the Facility are (all from vulnerable households):

- Existing fishers engaging in capture fisheries (freshwater)
- Existing and new aquaculture producers
- Existing and new farmers engaging in crop, fodder and fruit production in plot and agroforestry systems

The Grant Facility will aim to award an estimated 30% of sub-grants to women in vulnerable households.

The targeted thematic areas for eligible investments and interventions are:

- **Capture fisheries:** these sub-grants will primarily focus on financing the acquisition of sustainable gear to reduce the impact of overfishing, with the decline in fish populations exacerbated by the impacts of climate-driven drought. Boats or outboard engines will not be financed.
- **Aquaculture:** sub-grants falling under this category will pertain to the climate-proofing, upgrade or rehabilitation of existing aquaculture facilities, or to the establishment of new facilities to produce fish fry, fingerlings, feed, and fish.
- **Agriculture:** sub-grants in this category will pertain to the upgrade or installation of resilient agroforestry and agropastoral systems for the production of crops, fodder and fruits in identified value chains (mango, oranges, lemons, avocado, papaya and avocadoes)

Candidate grantees can select a number of interventions and investments in the relevant thematic area of their sub-project, up to the maximum grant funding amount. The list of eligible interventions and investments (Table 4) has been informed by prioritization exercises conducted by the GoZ as well as stakeholder consultations during the design of the proposed project.

Table 4 Indicative list of eligible GF investments and interventions

Target sectors	Eligible interventions or investments
Capture fisheries	- Provision of sustainable fishing gear and nets
Aquaculture	- Establishment of small-scale hatcheries, enabled by the newly established hatcheries under Activity 1.3.2

	- Establishment of on-farm and small-scale fish feed mills and plants, to use farm by-products (as above, enabled by the construction of fish feed plants under Activity 1.3.2) - Construction of small-scale ponds - Climate-proofing and/or rehabilitation of existing ponds - Provision of solar driers - Purchase of production and start-up equipment (water filters, solar pumps, fish fry and feed)
Horticulture / agricultural production	- Agroforestry: provision of fruit trees, seeds and seedlings to support the production of mangoes, oranges, lemons, papaya and avocadoes, and fodder (velvet beans, cowpeas, red sun hemp, Rhodes grass and *panicum maximum* - Community sub-projects: establishment of nurseries for the production of tree seedlings. Priority will be given to multi-purpose tree species, including Acacia *spp, Moringa oleifera, gliricidia sepium, faidherbia albida, Sesbania sesban*, and *Pericopsis angolensis* - Establishment of cost-efficient and low-cost processing units for transforming fruits (drying, juicing, preserving, packaging etc.) using solar power - Irrigation and rainwater harvesting systems: solar-powered pumps, cisterns, drip and sprinkler systems, gravity-fed systems - Storage facilities

Activity 2.1.2 Launch of awareness campaign and call for expression of interest

This activity will roll out an awareness raising campaign to promote the offering of the Grant Facility. Campaign materials will be tailored to target the appropriate audience i.e. farmers, fishers, associations and relevant community-based groups and leaders eligible to access the Grant Facility. Special care will be taken to ensure women and women's groups are appropriately targeted to promote their meaningful engagement in the Facility.

This activity will be carried out prior to the launch of each expression of interest (in years 2, 3 and 4). In-person engagement will take place at the community-level to enhance the understanding of the offering and its opportunities and to provide initial guidance on how to access and apply. This approach will ensure greater buy-in and increase the number and quality of applications.

The outreach documentation to be developed to raise awareness of the Grant Facility will include specific provisions to enable women's access to the TA and financing offered. Outreach materials will be reviewed and tailored by a hired Gender consultant who will see the provision of gender-responsive TA throughout the implementation of the GF. Additionally, specific in-person workshops will be organised as part of the expression of interest process to ensure dedicated access and support for potential women candidates and grantees, in order to realise the target of 30% of women grantees under Output 2.2.

Output 2.2 Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects

Activity 2.2.1 Pre-grant support to candidate grantees to develop viable, context-appropriate sub-projects in the selected sectors

This activity will pertain to the provision of pre-grant support to candidate sub-projects eligible for technical assistance post-screening at EOI stage.

Indicative list of pre-grant support:

- Business management to enhance entrepreneurial capabilities of grantees
- Financial and accounting literacy, administrative support
- Market study and development of business plans, marketing strategies and maintenance plans

- Support for technical specifications of investments and selection of interventions
- Compliance and integration of E&S and Gender Safeguards
- Estimating and monitoring adaptation impact
- Alignment with Adaptation Fund's review criteria and Grant Facility eligibility criteria
- Application drafting support

The technical assistance needs of each sub-project will be determined through the screening process conducted by the PMU with final validation by the Project Steering Committee (please see the section on implementation arrangements for more detail). This exercise will help identify areas where assistance is needed to comply with the eligibility criteria of the Grant Facility, the USP policy and ESG policy of the Adaptation Fund, and prevent the risk of maladaptation by tailoring investments to the local context and market.

If the sub-grant is deemed to be a medium risk project (Category B) the PMU will deploy an independent contractor to conduct an Environmental Impact Assessment (EIA) and associated E&S Management Plan (ESMP) for the project based on the proposal received.

The technical assistance will be provided by extension agents trained under Activity 1.1.2 and by lead technical partners from HODI and RESEI (fruit tree value chains) and CBU (fisheries and aquaculture value chains. Additional external support from hired consultants with specific areas of expertise (E&S safeguards, engineers) will be sought. In alignment with the Gender Action Plan, 30% of all grantees will be women or women-led groups (for community grants).

Grant appraisal process: The grant applications will have the AF ESP principles screening applied to them by the Project Steering Committee. The screening will be done through a checklist review of the applications to, inter alia, ensure that for example the list of plants proposed comply with the permitted indigenous plants and species (to ensure invasive species are not introduced in the habitats), that the maps provided are not in or near protected natural areas and areas of cultural heritage. In the event that this may be the case, then the plans will need to provide detailed information to explain why this cannot be avoided, the extent of the expected impact and what mitigation measures are being taken to minimise any adverse impact. This will be reported and monitored through the ESMP. Any grants that do not comply with the ESP checklist will not be approved and applicants informed of adjustments that need to be made.

1. The grant applications will be appraised using the screening checklist below.

Table 5 Grant screening criteria

#	Evaluation Criteria	Evaluation	
1	Consistency of Grant Recipient with the target group and are either agricultural production systems or horticultural and fish value chains as per activities below	Yes	No
2	Consistency of investment proposal with the 15 Environmental and Social Principles of the AF	Yes	No
3	Application identifies relevant applicable law / technical regulation and district procedures for compliance.	Yes	No
4	If applicable grant application includes relevant permit or declaration of conformity	Yes	No
5	Applied grant funds are within acceptable amount	Yes	No
6	All required documents are attached to application	Yes	No
7	Investment project implementation schedule does not exceed the established time limits	Yes	No
8	Availability of environmental review document (if necessary in compliance with the Zambia Environmental Management Agency's regulations)	Yes	No
9	No tax liability for more than three months overdue by the applying cooperative	Yes	No
10	Lack of debt for servicing by commercial banks	Yes	No

11	Grant Recipient has not previously received funds from other government programs, particularly the Constituency Development Fund	Yes	No
12	Proposed expenses for investment project comply with the established expenses type	Yes	No
13	Proposed expenses are not transferable to other cooperatives nor in other districts which have been approved.	Yes	No
14	User rights to land for agricultural investments are clear, and there are no potential claims of exclusion or involuntary displacement.	Yes	No
15	Contribution (in-kind or cash) of the project proponent of at least 10% of the grant amount requested	Yes	No

Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects

Upon award of a sub-grant, a roadmap for post-grant support will be formulated, detailing the needs of the recipients in terms of technical capacity. The training will be provided by extension agents trained under Activity 1.1.1, in collaboration with Copperbelt University (for sustainable fishing practices) and/or by hired specialists depending on the required area of expertise.

Table 6 Post-grant technical assistance training areas

Target sectors	Training to be provided
Capture fisheries	• Sustainable fishing practices • Use of sustainable fishing gear
Aquaculture	• Fingerlings and fish production • Fish health • Fish feed production
Horticulture / agricultural production	• Production of climate-resilient seeds (in collaboration with the Zambia Agricultural Research Institute (ZARI) • Resilient agricultural practices (intercropping, no-till, cover crops etc.) • Integrated pest management (IPM) • Post-harvest methods and processing of product • Weather Index Insurance
Common to all three thematic areas	• Monitoring and reporting of adaptation impact • Implementation of Environmental and Social Management Plans (ESMPs) • Gender mainstreaming and inclusion • Compliance with Grant Facility criteria • Financial literacy

Component 3. Enhancing knowledge management for evidence-based adaptation planning

Vulnerable communities in the target districts experience floods, droughts, change of rainfall season onsets, disease outbreaks – and are able to tell the frequency and intensity of these phenomena. However, this community-level knowledge of climate related changes is based on past experiences of the different phenomena. In terms of planning and improving people's ability to cope, community-level knowledge is not informing enough partly because it is limited to the specific areas of immediate experience. Cognizant of this limitation and the impact that this has on planning, resilience and building adaptive capacities, the project under component 3 will develop key aspects of knowledge required to support well-informed, systematic, evidence-based adaptation activities, raise awareness among the target populations on the impacts of climate change, production landscapes (crop production), and food security and nutrition. The project will also support enhancing capacity for understanding climate change risks, responses and planning approaches, for systematic and effective sub-national planning in the targeted 15 districts.

Additionally, in light of the importance of information to cope with the impacts and or extreme weather events, the project under this output will support incorporation of climate information services in the programming to mitigate the impact of shocks, by transferring knowledge and information to smallholder farmers. This will enable them to make – well-informed easily accessible, timely and relevant decisions to cope with negative effects of increased climate variability, which will ultimately limit the economic and social damage caused by shocks. Access to early warning systems such as climate information is a critical risk reduction strategy that allows vulnerable smallholders to manage climate risks through better choices on inputs and practices. To achieve this, the Ministry of Green Economy and Environment will be at the core of the implementation of this activity in close collaboration with Ministry of Agriculture in providing a comprehensive system of farmer tailored agro-meteorological advisory messages, with seasonal weather and crop forecasts to smallholder famers. Part of this process will include installation of rain gauges to augment the national system, not just for weather information collection but for training farmers in the recording, interpretation, and dissemination. This will form part of the Community Agrometeorological Participatory Extension System that will enhance farmer-to-farmer extension support done through producer groups.

To ensure that the district administrations have improved knowledge and awareness of climate change risks to support effective evidence-based adaptation planning at sub-national levels, the project will focus on the output with its associated activities below. Also, the successful implementation of CALRF, particularly with its USPs, will hinge on the project's knowledge management which will give an opportunity for the project to gather best practices and lessons that will be circulated to stakeholders but also to form basis for adaptive management and the replication of successfully funded initiatives in the three target value chains. Appropriate knowledge management tools, including knowledge dissemination mechanisms will be developed to ensure the project, lessons and best practices reach out to communities, government agents, and other key stakeholders in an effective and timely fashion.

Output 3.1. Creation of a Knowledge Dissemination and Management Strategy (KMS) to sustain the uptake of climate-resilient fish and agricultural production

Activity 3.1.1. Deployment of tools and communication channels to enhance availability and access to climate information at the community and national levels

This activity focuses on the delivery of weather, climate and hydrological, and early warning services to ensure users have access, understand, and use these information services for decision making and risk preparedness. The objective is to deliver user-friendly and tailored weather, climate, and early warning services for climate adaptation, resilience, and disaster preparedness. During consultations, it was clear that most community members recognize that weather patterns have changed, including late yet short rainy seasons, extreme temperatures and frequency in floods. Traditional knowledge for reading seasonal changes can't be relied upon anymore. Therefore, more versatile and easily accessible information systems are required to inform community members with simple phones. Information will be spread through meteorological departments in collaboration with the Ministry of Agriculture and Environment Department – ensuring information on weather changes according to district geographical locations is accurate and reliable. This activity will deploy:

- **Interactive Voice Response (IVR) Systems**: The project will support the creation of a system in partnership with Zamtel to enable farmers to call a toll-free number to receive weather forecasts and agricultural advice in their local languages (Bemba, Lozi and Tonga).. The IVR will be rolled out in the 15 target districts to target all people with access to a mobile phone (a smart phone is not required to access the IVR therefore ensuring maximum inclusiveness and access to information for vulnerable populations). Extension agents will be able to access weather forecasts and agricultural advice, and interpret this information to local smallholders as necessary.
- **Community Radio Broadcasts**: Riding on the existence of local radio stations in target districts, the project will support regular weather and climate updates broadcasted in local languages through community radio stations. This service will ensure that even those without mobile phones or internet access receive crucial information to ensure total coverage and access to climate and weather information in the 15 target districts.

The concrete adaptation result to be delivered with this system includes increased availability and access to climate and weather information for enhanced adaptation and agricultural planning among vulnerable communities and district-level extension agents.

Activity 3.1.2. Organisation of knowledge exchange platforms

This activity will pertain to the organisation of 4 national-level workshops gathering key project stakeholders and partners. These platforms will serve as a hub for knowledge exchange, resource access, and collaboration, enabling smallholder farmers to secure financing, access markets, and adopt innovative practices. Decision-makers will leverage insights from the platform to shape policies and programs that support rural communities and their livelihoods. By bridging gaps among stakeholders, the platform will promote resilience, economic growth, and environmental sustainability in priority value chains. Concrete adaptation results under this activity include the creation of positive feedback loops whereby interaction among stakeholders will generate knowledge, enabling access to information; create opportunities for scaling-up financing options for communities; inform the development and implementation of national and district-level adaptation strategies and the delivery of extension services. The result will be the creation of communities of practice gathering farmers, decision-makers, financiers and research organizations to foster the planning and implementation of resilient measures and investments on a national scale. A target of at least 30% of smallholders to participate in the knowledge exchange workshops will be women. Additionally, the PMU gender specialist will ensure that workshop agenda include discussion items on gender-sensitive adaptation measures, women's economic empowerment and access to financing. Workshop reports will include gender-specific outputs and action items.

Workshops will be organised annually from Year 2 to Year 5. These workshops will directly contribute to the sustainability of the Grant Facility as a resource mobilization strategy. Financial Service Providers (FSPs) will have access to economic and financial performance data on awarded sub-grants, and access to relevant stakeholders. Discussions between GoZ, FSPs and other potential funding partners will be held and a roadmap developed to secure the long-term sustainability of the Grant Facility.

Output 3.2. Long-term and locally led adaptation planning is secured

Activity 3.2.1. Development of 15 strategies at district and community-levels to incorporate climate change priorities and support capacities for implementation

Weak institutional and policy gaps at subnational levels limit the ability of communities to receive the support they need to prepare to particularly extreme weather events which tend to be sudden and unforeseen (due to limited warning system in many places). This activity across all participating districts will therefore build an enabling policy and institutional environment to mainstream climate change priorities in district level development planning, including in the use of government-provided Community Development Funds. This activity will also build on the outputs generated under Component 1, namely the capacity assessment of inter-ministerial collaboration and extension service delivery, as well as the community consultations conducted. The activity will therefore entail:

- Conducting a rapid assessment of existing capacities per district to aid the development of tailored adaptation planning strategies
- Based on the assessment and on consultations carried out in Output 1.2, identifying key climate change challenges but also priorities based on their level of vulnerability to set clear adaptation and resilience targets.
- Supporting training workshops of 15 District Development Committees and community leaders on climate change adaptation, mitigation strategies, and policy integration to review and consolidate district development plans to mainstream and prioritize adaptation and resilience targets and allocate sufficient resources to climate adaptation initiatives – this will be critical given low technical capacities at subnational levels for the implementation of climate change adaptation in Zambia. These workshops will focus on understanding climate impacts and developing tailored strategies for each district and community.

- Providing technical support through experts and consultants to assist in drafting and refining district-level climate change strategies. This will include data analysis, climate risk assessments to feed into district-level action plans that align with national climate policies.

In alignment with the Gender Action Plan, the 15 district-level planning strategies will include gender-sensitive climate change vulnerabilities and priorities (building on outputs from 1.2).

B. Economic, social and environmental benefits

67. The project has been designed as to create positive feedback loops whereby the increased technical capacity and access to finance of communities will result in increased income, reduce social inequalities and environmental degradation. Table 6 below offers a summary of the project's economic, social and environmental benefits and co-benefits compared to the baseline.

Table 7 Summary of environmental, social and economic benefits

Activity	Baseline	Expected changes	Economic, social and environmental benefits
Activity 1.1.1 Development of recommendations report and update of relevant sectoral training manuals and technical guidelines	• Inefficient cross-sectoral and interinstitutional collaboration to deliver targeted extension services to communities in need • Absence of strategic plan and roadmap for extension services to support the uptake of resilient livelihood options • Outdated or absent technical manuals and operational guidelines in the three targeted value chains	• Enhanced cross-sectoral integration and interministerial collaboration to deliver extension services • Enhanced dialogue amongst relevant Ministries and extension services from the bottom-up • Provision of recommendations to optimise the delivery of extension services in agriculture, fisheries and aquaculture • Updated, evidence-based technical and operational guidelines	• Enhanced access to evidence-based best practices for extension agents and communities in the three target value chains • Increased adaptive capacity of national institutions to adequately plan, budget, deliver and monitor extension services delivery • Supported decentralization efforts hereby supporting district-level autonomy
Activity 1.1.2. Delivery of training and capacity building for national extension services	• Insufficient technical capacity of extension agents in evidence-based resilient measures in agricultural and fish production • Long delays for communities engaging in agriculture and fish production to receive technical training and operational guidance	• 1,500 extension agents are capacitated to deliver extension services at the district-level • Accelerated provision of extension services to communities in need	• Increased district-level autonomy to deliver extension services • Local-level knowledge generation contributing to decentralization efforts • Cost-effectiveness for delivery of extension services thanks to ToT approach
Activity 1.2.1. Conduct consultations with communities and traditional leaders to collect information on needs and priorities for district-level adaptation planning	• Insufficient integration of communities needs, priorities and knowledge in strategic plans, including of women and vulnerable groups	• Collection of gender-disaggregated information and data on communities' perception of climate change impacts and coping strategies • Definition of communities needs and priorities with	• Availability of information and data on communities needs and priorities to be included in district-level planning strategies • Increased community-buy in and ownership of adaptation planning strategies • Increased endorsement by

Activity	Baseline	Expected changes	Economic, social and environmental benefits
		regards to livelihoods impacted by climate change • Integration of women's and vulnerable populations' dynamics in district-level adaptation planning strategies	communities of necessary measures to combat climate change and environmental degradation
Activity 1.2.2. Awareness raising and delivery of training to communities and traditional leaders based on updated information in training manuals, technical guidelines	• Outdated or absent knowledge and technical capacity of communities in sustainable farming and fish production practices, resulting in environmental degradation, reduced income and increased social inequality	• Communities including women, vulnerable groups and traditional leaders are capacitated to support the uptake of resilient production practices in the three target value chains	• Enhanced community ownership of adaptation measures • Reduced environmental and resource base degradation • Increased ecosystem and landscape-level resilience • Enhanced delivery of ecosystem services • Cost-effectiveness thanks to reduced travel times to deliver extension services thanks to ToT approach
Activity 1.3.1. Support to resilient seed production at the local level through the creation of demonstration plots and training of farmers	• Unreliable supply of seeds for fruit tree seedlings and fruit production • Unavailability of locally-adapted resilient seeds • Communities are unaware, or risk-averse to try improved varieties for tree, fodder and crop production	• The potential of locally-adapted seeds is demonstrated to communities • A steady, local supply of resilient seeds is created, enabled the production of tree seedlings, fodder crops and grains	• Reduced harvest losses thanks to use of locally-adapted seeds • Increased income for farmers due to reduced losses • Increased livelihood diversification strategies i.e. creation of nurseries and seed banks • Increased adaptive capacity of communities to climate change impacts
Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations	• Unreliable supply of fish fingerlings and feed from a single hatchery • Long transport distances and associated costs for shipping fingerlings and feed to aquaculture producers • Long waiting times for producers to procure fingerlings and feed • Unavailability of sufficient funding to finance appropriate aquaculture infrastructure at the district-level • Climate vulnerability of fish resource stocks	• The production of fish fingerlings and feed is enabled in districts with existing aquaculture operations	• Reduced environmental pollution and economic costs due to reduced transport distances • Enhanced cost effectiveness and reduced waiting times for the purchase of fingerlings and feed for aquaculture operations • Reduced resource base degradation through reduced fishing pressure • Enhanced traceability and fish health • Creation of income diversification opportunities (small-scale hatcheries and feed mills)
Activity 1.4.1 Rehabilitation and construction of five	• Inaccessibility of roads and crossing points in	• Rehabilitation/construction of five culverts in priority	• Improved access to markets and social services, leading to increased

Activity	Baseline	Expected changes	Economic, social and environmental benefits
culverts to enable rural communities to access aggregation centers, inputs, social services and markets especially during and after extreme weather events	target districts, particularly during rainy seasons and extreme weather events like floods. • Limited or no access to markets, inputs, social services, and aggregation centers for rural communities due to damaged or missing culverts. • High post-harvest losses and reduced income due to inability to transport produce on time.	districts (Kalomo, Monze, Kazungula, Sesheke and Luano) identified through participatory consultations. • Improved connectivity all year long between productive zones and aggregation centers/markets. • Structural and environmental safeguards integrated through detailed assessments and site-specific Environmental and Social Management Plans.	income and reduced poverty among rural communities. • Reduced post-harvest losses and spoilage due to timely transport. • Increased resilience to extreme weather events, especially flooding, through climate-resilient infrastructure. • Improved community mobility and access to health and education services year-round.
Activity 2.1.1 Establishment and operationalisation of the Grant Facility	• Low revenue and income for farmers, fishers and aquaculture producers • Risk-averse financial institutions to invest in smallholders and vulnerable communities • Unavailability of financial products • Insufficient coverage and access to technical assistance • Inability of GoZ to allocate funding for resilient adaptation options	• Enabled access to technical assistance and financing for new and existing farmers, fishers and aquaculture operations to support resilient investments	• Reduced environmental degradation of natural resource base • Demonstration of economic viability of horticulture and aquaculture operations • Increased revenue and income for farmers, fishers and aquaculture producers • Increased availability of nutritious food • Enhanced animal welfare
Activity 2.1.2 Launch of awareness campaign and call for expression of interest	• N/A	• Communities are aware of the Grant Facility offering and criteria to access technical assistance and funding	• Enhanced access of communities to technical assistance and financing to develop and operate adaptive investments and interventions in the three target value chains
Activity 2.2.1 Pre-grant support to candidate grantees to develop viable, context-appropriate sub-projects in the selected sectors	• Limited or no access of communities to administrative, design, financial literacy and management support	• Dedicated, expert-led support is made available to candidate grantees	• Enhanced access of new and existing farmers, fishers and aquaculture producers to expert-led technical support for project development
Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects	• Limited or no access of communities to operational, technical and management support for agriculture, fisheries and aquaculture operations	• Dedicated, expert-led support is made available to grantees	• Enhanced access of new and existing farmers, fishers and aquaculture producers to expert-led technical support for agriculture, fisheries and aquaculture operations
Activity 3.1.1. Deployment of tools and communication channels to enhance	• No access to reliable, weather and climate information services for	• Weather and climate information tools and channels are enabled in the	• Increased adaptive capacity and enhanced coping strategies of communities in the face of climate

Activity	Baseline	Expected changes	Economic, social and environmental benefits
availability and access to climate information at the community and national levels	farmers • Limited coverage of existing communication channels for early warnings	15 target districts • Large-scale coverage and dissemination of climate and weather information through radio broadcasts	change events • Enhanced crop planning hereby reducing crop losses and low yields
Activity 3.1.2. Organisation of knowledge exchange platforms	• Limited exchange and communication among stakeholders i.e. communities and FSPs, policy-makers • Limited or no compiling and dissemination of economic, environmental and social data relating to resilient measures and investments implemented nationally	• Dedicated platform for knowledge exchange and intersectoral dialogue is established, fostering adaptation planning and uptake of resilient investments	• Enhanced adaptive capacity of communities and policy-makers through enhanced access to climate and sector data and information
Activity 3.2.1. Development of 15 strategies at district and community-levels to incorporate climate change priorities and support capacities for implementation	• Absence of district-level adaptation planning strategies that include	• Development of locally-led adaptation planning strategies that integrate women's and vulnerable groups needs and priorities	• Increased integration and consideration of communities' needs and priorities, including women and vulnerable groups in adaptation planning strategies • Enhanced decentralization efforts through district-level adaptation planning strategies • Reduced social inequalities in climate change adaptation planning and implementation

C. Cost-effectiveness of the proposed project

68. In the Seventh National Development Plan (NDP), the estimated loss of annual economic growth in Zambia due to climate change is 0.4% of GDP. Rainfall variability alone could lead to a loss of 0.9% of GDP growth.[41] This is about $223[42] per capita that will be lost annually. For the total number of direct beneficiaries of this project (43,400 individuals or 8,680 households), the loss associated with climate variability would be about $9,678,200 annually. In this project, addressing climate variability and change focusing on diversifying livelihood options (monetary and non-monetary terms) that will enhance resilience and build community adaptive capacities beyond GDP parameters, the cost is $6.5 m – demonstrating the high cost-effectiveness of the proposed project compared to a business-as-usual scenario.

69. In light of the above, by focusing and prioritizing concrete adaptation measures over soft interventions (and this is reflected in the project activity costs allocated to components 1 and 2 compared to component 3 which is focused on soft interventions), the project is overall seeking:

- Avoiding and mitigating future costs associated with damage and loss of property and environmental degradation owing to the impacts of climate change and extreme weather events;
- Identification of priority activities and vulnerable people and their socioecological systems to ensure more targeted interventions that respond to the specific challenges related to climate change and extreme weather events;

[41] Makondo et al. 2014, MTENR 2007, Sishekanu 2013

[42] This is based on the current population estimation of Zambia (~19.2 million people) and the projected loss in GDP over the next decade.

- Building capacity of direct beneficiaries and district level institutional structures to strengthen partnerships for sustainability – building local level structures and partnerships will reduce the need for additional capacity development in the future to address the impacts of climate change;
- Community involvement in concrete activities for the project will ensure that the technical selection of interventions reflect pragmatism (what communities are capable of managing with minimum or no additional technical support beyond the life of the project), and cost effectiveness.

70. Lastly and as has already been noted, CALRF builds on the successes and lessons of RUFEP that has been working with different partners at national and subnational levels to promote the rural poor and vulnerable people's access to sustainable financial services and products. From the onset, it has a choice from a network of over 50 proven partners to 'ride on and hit the ground running.' This will significantly shorten the learning period and facilitate community mobilisation. Building on RUFEP in this regard, will therefore, prove to be cost-effective in that no additional costs in terms of financial resources and time will be required for identification of partners. Experience has shown that completely new areas require more community mobilization and engagement, advocacy for the project, stakeholder identification and social buy-in and acceptance. To varying levels, these social and participatory processes have financial and time costs. In the case of CALRF, these processes will not have the same level of complexity, thus contributing to project cost-effectiveness. It has already been mentioned that in the consultation processes, stakeholders (e.g. Zambian Rainbow Development Foundation in central province) who were involved in RUFEP have been involved in the design of CALRF – and that has been an opportunity to share experiences regarding community engagement, socioeconomic and ecological vulnerability contexts of target communities, among others. CALRF consolidates the achievements of RUFEP, and scales its interventions to primarily address the adaptation challenges at micro level – communities. *The alternative scenario* would have been duplicating what RUFEP has done in the target districts and collaborating with a new cohort of partners, some of which may not be based in the target districts. The duplication would be a waste of financial resources, while collaborating with other new partners would have lengthened the learning curve. In project management, controlling for time, knowledge level of partners and financial costs can make a huge difference in cost-effectiveness of the project. RUFEP, using the proposed model, was able to reach over 708,641households at a cost of USD 34per household.

71. The cost effectiveness of the proposed project interventions is further demonstrated using an options analysis below.

Activity	Expected changes	Benefits generated	Alternative options or measures
Activity 1.1.1 Development of recommendations report and update of relevant sectoral training manuals and technical guidelines	• Enhanced cross-sectoral integration and interministerial collaboration to deliver extension services • Enhanced dialogue amongst relevant Ministries and extension services from the bottom-up • Provision of recommendations to optimise the delivery of extension services in agriculture, fisheries and aquaculture • Updated, evidence-based technical and operational guidelines	• Enhanced access to evidence-based best practices for extension agents and communities in the three target value chains • Increased adaptive capacity of national institutions to adequately plan, budget, deliver and monitor extension services delivery • Supported decentralization efforts hereby supporting district-level autonomy	• Provision of extension services using outdated training manuals and guidelines which do not reflect best practices in regenerative and climate-smart agriculture • Application of a vertical, highly centralized approach that does not take stock of the local context, reducing the expected impact of extension services
Activity 1.1.2. Delivery of training and capacity building for national extension services	• 1,500 extension agents are capacitated to deliver extension services at the district-level	• Increased district-level autonomy to deliver extension services	• Sole focus on national-level training, resulting in a slow trickle-down effect of knowledge

Activity	Expected changes	Benefits generated	Alternative options or measures
	• Accelerated provision of extension services to communities in need	• Local-level knowledge generation contributing to decentralization efforts • Cost-effectiveness for delivery of extension services thanks to ToT approach	• Traditional delivery of training that does not emphasise the transmission and replicability of the training content • Provision of training by external operators or companies, resulting in increased costs that have a one-off impact
Activity 1.2.1. Conduct consultations with communities and traditional leaders to collect information on needs and priorities for district-level adaptation planning	• Collection of gender-disaggregated information and data on communities' perception of climate change impacts and coping strategies • Definition of communities needs and priorities with regards to livelihoods impacted by climate change • Integration of women's and vulnerable populations' dynamics in district-level adaptation planning strategies	• Availability of information and data on communities needs and priorities to be included in district-level planning strategies • Increased community-buy in and ownership of adaptation planning strategies • Increased endorsement by communities of necessary measures to combat climate change and environmental degradation	• Implementation of landscape-level restoration plans based on 'best practices' that fail to take into account the local evidence based as well as local knowledge and needs, resulting in low community buy-in for the proposed measures and inefficiencies • Blind application of restoration measures to gender-specific needs and priorities, failing to take into account climate change's disproportionate impact on women and their livelihoods
Activity 1.2.2. Awareness raising and delivery of training to communities and traditional leaders based on updated information in training manuals, technical guidelines	• Communities including women, vulnerable groups and traditional leaders are capacitated to support the uptake of resilient production practices in the three target value chains	• Enhanced community ownership of adaptation measures • Reduced environmental and resource base degradation • Increased ecosystem and landscape-level resilience • Enhanced delivery of ecosystem services • Cost-effectiveness thanks to reduced travel times to deliver extension services thanks to ToT approach	• Traditional, 'one-off' delivery of training that does not emphasise the transmission and replicability of the training content to other trainers • Hiring of external operators or companies to provide training to communities, resulting in higher costs compared to local, in-house trained extension agents • Implementation of ecosystem restoration measures by procured third parties, resulting in higher costs and low community ownership of the project outcomes, negatively impacting sustainability
Activity 1.3.1. Support to resilient seed production at the local level through the creation of demonstration plots and training of farmers	• The potential of locally-adapted seeds is demonstrated to communities • A steady, local supply of resilient seeds is created, enabled the production of tree seedlings, fodder crops and grains	• Reduced harvest losses thanks to use of locally-adapted seeds • Increased income for farmers due to reduced losses • Increased livelihood diversification strategies i.e. creation of nurseries and seed banks • Increased adaptive capacity of communities to climate change impacts	• Provision of non-native seeds which are not adapted to the local growing conditions • Reliance on external provision of seeds for farmers, increasing vulnerability to external shocks, price variations, dependency and higher farmer-supported costs • Provision of seeds without associated training in seed multiplication and storage, impacting farmers adaptive capacity to climate change

Activity	Expected changes	Benefits generated	Alternative options or measures
			impacts
Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations	• The production of fish fingerlings and feed is enabled in districts with existing aquaculture operations	• Reduced environmental pollution and economic costs due to reduced transport distances • Enhanced cost effectiveness and reduced waiting times for the purchase of fingerlings and feed for aquaculture operations • Reduced resource base degradation through reduced fishing pressure • Enhanced traceability and fish health • Creation of income diversification opportunities (small-scale hatcheries and feed mills)	• Provision of fish fingerlings from existing national hatcheries, adding further pressure on supply and leading to increased costs, waiting times, thereby reducing cash flow and incomes for aquaculture operators • Building of 'conventional' fish hatcheries that do not follow best practices in terms of animal health and traceability • Provision of fish fingerlings caught in natural settings, or support to small-scale fisheries, resulting in environmental degradation and increased pressure on local ecosystems
Activity 1.4.1 Rehabilitation and construction of five culverts to enable rural communities to access aggregation centers, inputs, social services and markets especially during and after extreme weather events	• Rehabilitation/construction of five culverts in priority districts (Kalomo, Monze, Kazungula, Sesheke and Luano) identified through participatory consultations. • Improved connectivity all year long between productive zones and aggregation centers/markets. • Structural and environmental safeguards integrated through detailed assessments and site-specific Environmental and Social Management Plans.	• Improved access to markets and social services, leading to increased income and reduced poverty among rural communities. • Reduced post-harvest losses and spoilage due to timely transport. • Increased resilience to extreme weather events, especially flooding, through climate-resilient infrastructure. • Improved community mobility and access to health and education services year-round.	• No rehabilitation of crossing points, impeding access to market for farmers supported, resulting in loss produce and income • No rehabilitation of crossing points results in high-risk of floods and vulnerability to extreme weather events, preventing market access and posing a safety risk to users • Conventional rehabilitation of crossing points that fails to integrate E&S safeguards and provisions as well as climate-aware design specifications, resulting in low durability and higher risk of environmental damage and pollution
Activity 2.1.1 Establishment and operationalisation of the Grant Facility	• Enabled access to technical assistance and financing for new and existing farmers, fishers and aquaculture operations to support resilient investments	• Reduced environmental degradation of natural resource base • Demonstration of economic viability of horticulture and aquaculture operations • Increased revenue and income for farmers, fishers and aquaculture producers • Increased availability of nutritious food • Enhanced animal welfare	• Provision of unpersonal 'blanket' technical and financial support with low ownership, accountability and therefore lower adaptation impact potential. Dilution of project funding, lower traceability of project outcomes
Activity 2.1.2 Launch of awareness campaign and	• Communities are aware of the Grant Facility offering	• Enhanced access of communities to technical	• Launch of the Grant Facility without a promotion campaign,

Activity	Expected changes	Benefits generated	Alternative options or measures
call for expression of interest	and criteria to access technical assistance and funding	assistance and financing to develop and operate adaptive investments and interventions in the three target value chains	resulting in low engagement and awareness from communities of the GF offering
Activity 2.2.1 Pre-grant support to candidate grantees to develop viable, context-appropriate sub-projects in the selected sectors	• Dedicated, expert-led support is made available to candidate grantees	• Enhanced access of new and existing farmers, fishers and aquaculture producers to expert-led technical support for project development	• Financing of sub-grants without dedicated technical assistance support for project preparation (technical specifications, economic analysis, marketing etc.) would result in project pipeline of varying quality with unclear expected results and impacts
Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects	• Dedicated, expert-led support is made available to grantees	• Enhanced access of new and existing farmers, fishers and aquaculture producers to expert-led technical support for agriculture, fisheries and aquaculture operations	• 'Hands-off' financing of grants would negatively impact the GF's cost-effectiveness and investment impacts due to the absence of operational support to farmers and aquaculture operators, and would result in slower progress in terms of income generation and food access
Activity 3.1.1. Deployment of tools and communication channels to enhance availability and access to climate information at the community and national levels	• Weather and climate information tools and channels are enabled in the 15 target districts • Large-scale coverage and dissemination of climate and weather information through radio broadcasts	• Increased adaptive capacity and enhanced coping strategies of communities in the face of climate change events • Enhanced crop planning hereby reducing crop losses and low yields	• Absence of tools and communication streams for weather and climate information exacerbate vulnerability to climate change impacts, thereby increasing crop losses and decreased income, food security and nutrition
Activity 3.1.2. Organisation of knowledge exchange platforms	• Dedicated platform for knowledge exchange and intersectoral dialogue is established, fostering adaptation planning and uptake of resilient investments	• Enhanced adaptive capacity of communities and policy-makers through enhanced access to climate and sector data and information	• No multi-stakeholder consultation or organisation of knowledge exchanges in silos e.g. with project stakeholders only, does not foster learning and reduces the replicability and scalability potential of the proposed measures
Activity 3.2.1. Development of 15 strategies at district and community-levels to incorporate climate change priorities and support capacities for implementation	• Development of locally-led adaptation planning strategies that integrate women's and vulnerable groups needs and priorities	• Increased integration and consideration of communities' needs and priorities, including women and vulnerable groups in adaptation planning strategies • Enhanced decentralization efforts through district-level adaptation planning strategies • Reduced social inequalities in climate change adaptation planning and implementation	• Vertical adaptation planning cannot take the local evidence base as well as the needs and priorities of vulnerable groups into account, reducing local buy-in, effectiveness and sustainability of adaptation measures • Vertical adaptation planning that is not integrated does not include sufficient budget provisions for sub-national adaptation planning and implementation, which reduces the quality and cost-effectiveness of resilience measures implemented locally, if any

D. Project consistence with national or sub-national sustainable development strategies

72. The GRZ has demonstrated its commitment towards achieving the Sustainable Development Goals (SDGs). In the 8th National Development Plan (NDP), the GRZ strategic interventions are economic transformation and job creation, human and social development, environmental sustainability and good governance environment. It also reflects the prioritization of Zambia's international and regional commitments under various frameworks, including the last decade of action towards the realization of the SDGs and the African Union Agenda 2063. The project will contribute towards the attainment of these interventions by creating jobs, capacity building, supporting the development of food value chains and gender mainstreaming in agriculture and aquaculture among target groups. Overall, this will contribute towards the attainment of SDGs 1, 2, 3, 5, 8, 12, 13, 14 and 15.

73. The GRZ national agriculture policy is focused on improving support for small-scale farmers and creating conditions for them to contribute to the growth of the agriculture sector more effectively, this pillar on the Government's commitment to implement a comprehensive agriculture support programme (CASP) beginning in the 2022/2023 farming season. To bridge economic transformation and agricultural production, the Government has prioritized the promotion of value-addition in agriculture and agricultural mechanization. The Government also promotes farm block development with special focus on diversification of crops and expansion of the livestock and fisheries sub-sectors.

74. The GRZ National Fisheries and Aquaculture Policy (NFAP) was developed to provide a governing framework for the implementation of fisheries and aquaculture programmes in Zambia. This Policy will lead to a fisheries and aquaculture transformation which is key to boosting productivity and increasing fish production. Through this transformation the subsector will contribute to accelerating economic growth, ending hunger and malnutrition. The Policy will also be a building block for attaining the long-term Vision 2030, , which aims to provide opportunities for improving the well-being of all, embodying values of socio-economic justice, underpinned by principles such as gender responsive sustainable development. In line with the Vision 2030, this project will inculcate strong entrepreneurial capabilities, self-reliance, outward looking and enterprising, where target groups take advantage of potential and available opportunities in the fisheries sector. To do this, the project will increase access to improved fingerlings and quality fish feeds, aquaculture financing and extension services

75. National priorities on climate change have been elaborated through several key documents, between 2007 and 2023. The National Policies and Strategies Consistent with CALRF are listed in Table 7 below:

Table 8 CALRF alignment with national priorities

National Document	Description	Alignment with CALRF
Zambia 8th National Development Plan (8NDP) 2022–2026	The 8NDP serves as Zambia's overarching development framework, focused on economic transformation, job creation, human and social development, environmental sustainability, and good governance. It identifies climate change as a cross-cutting risk requiring mainstreamed resilience measures across key sectors. Strategic targets include reducing rural poverty from 76.6% to below 70% by 2026 and increasing rural financial inclusion by 25%.	CALRF supports the 8NDP by operationalizing rural financial inclusion through the establishment and operationalization of the Grant Facility, strengthening technical capacities in climate-resilient agriculture and aquaculture, and building local institutional resilience to climate risks, contributing to national poverty reduction and financial access targets.
National Adaptation Programme of	The NAPA outlines Zambia's urgent and immediate needs for climate adaptation, emphasizing community-driven, low-cost	CALRF advances NAPA's priority adaptation interventions by supporting diversification of rural livelihoods through climate-resilient agriculture

National Document	Description	Alignment with CALRF
Action (NAPA, 2007)	interventions in agriculture, water, health, and infrastructure. Priority actions aim to enhance food security, safeguard water supply, and strengthen disaster preparedness among vulnerable communities.	and fisheries, enabling access to adaptation finance via the Grant Facility, and strengthening extension services to build climate risk management capacities among smallholder communities.
National Climate Change Response Strategy (NCCRS, 2010)	The NCCRS defines Zambia's coordinated response to climate change, focusing on resilience-building in agriculture, forestry, and water sectors. It targets strengthening institutional capacity for climate governance, increasing climate-resilient agricultural practices by 30%, and enhancing national climate finance access mechanisms.	CALRF contributes to the NCCRS by scaling climate-resilient agricultural and aquaculture practices through technical support and grant financing, strengthening institutional frameworks for rural adaptation planning, and enhancing local knowledge management systems for sustained climate resilience.
National Policy on Climate Change (NPCC, 2016)	The NPCC provides policy direction for mainstreaming climate change into all sectors of Zambia's economy. Strategic objectives include achieving sectoral climate mainstreaming by 2026, promoting sustainable land management, expanding renewable energy deployment, and building public awareness of climate risks.	CALRF supports the NPCC by operationalizing climate mainstreaming at local levels through grant-supported projects, promoting sustainable agricultural and aquaculture practices, and enhancing institutional capacities for integrated adaptation planning.
Nationally Determined Contribution (NDC, 2015 and 2020 update)	Zambia's NDCs reaffirm the country's commitment to climate-resilient, low-carbon development. Adaptation priorities focus on agriculture, water, forestry, and energy, aiming to reduce vulnerability across 90% of rural communities and increase climate-resilient agricultural production by 40% by 2030.	CALRF aligns with Zambia's NDC adaptation targets by financing climate-resilient agricultural and fisheries investments, promoting climate-smart technologies, strengthening farmer and fisher capacities, and integrating adaptation tracking mechanisms into local institutional frameworks.
National Agriculture Policy (2016–2020)	The National Agriculture Policy seeks to transform agriculture into a sustainable, diversified, and competitive sector. It sets targets to diversify 30% of national agricultural production into climate-resilient crops and promote sustainable land management practices on 50% of smallholder farms.	CALRF supports the Policy by diversifying rural agricultural systems through grant-funded investments, promoting sustainable land management techniques, and building extension service capacities to mainstream climate-resilient agricultural practices.
Second National Agricultural Policy (2022–2026)	The updated Policy reinforces agricultural transformation and climate resilience. Strategic objectives include enhancing productivity growth in smallholder agriculture by 20%, increasing access to rural financial services by 30%, and expanding adoption of conservation agriculture across 40% of farming households.	CALRF supports the Policy's objectives by expanding access to rural financial services through the Grant Facility, scaling climate-smart agricultural practices, strengthening farmer organizations, and promoting inclusive value chain commercialization pathways.
Fisheries Policy (2018)	The Fisheries Policy aims to sustainably manage Zambia's fisheries and aquaculture resources. Strategic targets include increasing aquaculture production to 70,000 metric tonnes annually by 2030 and strengthening community-based fisheries	CALRF aligns with the Fisheries Policy by promoting sustainable aquaculture development through grant financing and technical support, rehabilitating hatchery infrastructure, enhancing fish feed systems, and supporting governance

National Document	Description	Alignment with CALRF
	management systems across all major water bodies.	frameworks for community fisheries management.
National Water Policy (2010)	The Water Policy provides the framework for equitable, sustainable water management. Strategic targets include expanding access to safe water for 80% of the rural population and integrating climate resilience into 50% of new water resource infrastructure projects by 2030.	CALRF contributes to the Water Policy by strengthening watershed management practices linked to agricultural production, promoting integrated water resource use in aquaculture, and supporting ecosystem-based adaptation measures that protect rural water supplies.
Vision 2030	Vision 2030 aspires for Zambia to become a prosperous middle-income country by 2030. Climate resilience and environmental sustainability are core pillars, with targets including reducing poverty levels below 20% and achieving universal access to sustainable water and sanitation services.	CALRF contributes to Vision 2030 by promoting sustainable livelihoods through climate-resilient agriculture and aquaculture investments, expanding rural access to finance, and strengthening institutional and community capacities to manage climate risks and enhance environmental sustainability.
National Forestry Policy (2014)	The Forestry Policy aims to sustainably manage and conserve Zambia's forest ecosystems. Strategic goals include reversing the national deforestation rate and promoting community forestry across 20% of forest reserves.	CALRF supports the Forestry Policy indirectly by promoting sustainable land use practices through climate-resilient agriculture, strengthening ecosystem-based adaptation interventions, and supporting landscape-level resilience building in rural communities.
National Disaster Management Policy (2015)	The Disaster Management Policy strengthens national disaster risk governance and community preparedness. Strategic targets include establishing functional early warning systems in all 116 districts and integrating disaster risk reduction into 75% of national development plans.	CALRF aligns with the Disaster Management Policy by enhancing local climate risk management through capacity building, strengthening community-based adaptation strategies, and supporting the integration of disaster risk considerations into rural development activities.
National Biodiversity Strategy and Action Plan (NBSAP-2, 2015)	NBSAP-2 aims to conserve Zambia's biodiversity and enhance ecosystem resilience. Strategic objectives include maintaining or restoring 17% of terrestrial ecosystems and integrating biodiversity management into 50% of agricultural and forestry programs.	CALRF contributes to NBSAP-2 objectives by promoting sustainable land management under climate-smart agriculture initiatives, supporting agroecological production systems, and strengthening local governance mechanisms that protect ecosystem services.
National Gender Policy (2014)	The National Gender Policy advances gender equality and women's empowerment. It targets achieving 50% female participation in decision-making structures and ensuring gender-responsive budgeting across sectors, including agriculture and climate adaptation programs.	CALRF promotes the Gender Policy objectives by ensuring strong gender inclusion in access to financial services under the Grant Facility, targeting women-headed households for climate-resilient agricultural support, and integrating gender-responsive approaches across project activities.
Technical Standards and Guidelines for Sustainable	These guidelines support the adoption of climate-smart agricultural practices. Strategic targets include training 60% of smallholder farmers in conservation agriculture by 2026 and scaling up	CALRF advances the Technical Standards by scaling conservation agriculture practices through technical training, promoting agroforestry adoption among smallholders, and financing climate-smart agricultural investments through the Grant

National Document	Description	Alignment with CALRF
Agriculture (2021)	agroforestry practices across farming zones.	Facility.
Draft Aquaculture Development Strategy (2023)	The Draft Strategy outlines pathways for expanding Zambia's aquaculture sector sustainably. Strategic objectives include doubling aquaculture productivity by 2030, improving hatchery capacity, and strengthening climate-resilient aquatic value chains.	CALRF supports the Strategy's objectives by investing in aquaculture development through the Grant Facility, strengthening hatchery systems, promoting sustainable fish feed production, and enhancing farmer capacities in climate-resilient aquaculture practices.
National Adaptation Plan (NAP, 2023)	Zambia's NAP provides a medium- to long-term framework for integrating climate adaptation across sectors. Strategic priorities include increasing adaptation investment by 30%, embedding adaptation actions into 80% of district development plans, and establishing a national adaptation monitoring and evaluation system.	CALRF operationalizes the NAP's priorities by embedding climate adaptation into rural investment activities, financing adaptation projects through the Grant Facility, strengthening district-level capacities for adaptation planning, and contributing to national adaptation monitoring efforts.

76. E. Relevant national technical standards

77. In addition to details that have been provided in the table above, CALRF has been prepared to remain compliant with the following policies provisions that are linked to rural financial policies:

78. The Water Resources Management Act No. 21 of 2011: The Act further outlines the requirement for the sustainable use of the water resources and ensure that the right to draw or take water for domestic and commercial purposes, without any change in quality of water. The support towards irrigation systems will have to seek clearance from the Water Resources Management Act provides for the establishment of the Water Resources Management Authority (WARMA) – this will be done by the service provider, and the procurement processes will ensure adherence to national procurement standards overseen by the Zambia Public Procurement Authority.

79. The Occupational Health and Safety Act, No. 36 of 2010: The Act requires that health and safety committees are formed at workplaces in order to manage the welfare of workers. The Act also stipulates the requirements that the employer should adhere to in order to manage such risk. The Act also outlines the duties of the manufacturers, importers and suppliers in relation to managing occupation Health and Safety risk. This will be required for the project given works on crossing points and infrastructure development. The service provider will directly ensure safety as a social safeguard issue. The service provider will also ensure that employees respect labour laws, including exclusion of child labour and paying at least minimum wage to employees.

80. The Town and Country Planning Act: The Act provides for the preparation, approval and revocation of development plans, for the control of development and subdivision of land, for the assessment and payment of compensation in respect of planning decisions, for the preparation, approval and revocation or modification of regional plans. The project will be compliant for activities related to infrastructure development.

81. The Environmental Management Act No.12 of 2011: This Act provides for sustainable management of natural resources and the protection of the environment. The Act further provides for prevention and control of pollution and it establishes the functions of the Zambia Environmental Management Agency (ZEMA) such as screening and providing guidance of environmental and social impact assessment.

82. The Environmental Management (Licensing) Regulations, of 2013: This regulation provides for the control of any discharges of water pollutants, air emissions, pesticides and other toxic substances and ozone depleting substances into the natural environment.

83. Plant Pest and Diseases Act, Cap 231: This Act provides for the eradication, and prevention of the spread of plant pests and diseases in Zambia and for the prevention of the introduction into Zambia of plant pests and disease,

and other matter hereto. The Act further provides guidance for designation of certain pests and diseases vectors that require destruction.

84. *Food Safety Act 7, 2019*: Implemented by the Food Safety Coordinating Committee, the Food Safety Act, 2019 provides for the protection of the public against health hazards and fraud in the manufacture, sale and use of food; provide for a streamlined process for regulatory clearances for regulatory health requirements for food premises; establish the Food Safety Coordinating Committee and provide for its functions and powers; provide for health inspection reports and report notices; establish the National Food Laboratory; repeal the Food and Drugs Act, 1972 and sections 79 and 83 of the Public Health Act, 1930; and provide for matters connected with, or incidental to, the foregoing. Adhering to the Act and the Fisheries regulations[43] will have several important implications for the project. The project will not only ensure compliance with the Food Safety Act but will also enhance the overall quality and safety of fish, benefiting both the producers and consumers:

- *Enhanced food safety and quality:* By following the prescribed steps, the project ensures that the fish and its products are safe for consumption, reducing the risk of foodborne illnesses. High-quality, safe products are more likely to be accepted in both local and international markets, potentially increasing sales and profitability.
- *Improved handling and processing practices:* Proper harvesting times and initial cleaning reduce contamination risks, ensuring the fish remains fresh and safe. Effective chilling, freezing, smoking, and sun-drying techniques help maintain the fish's quality and extend its shelf life.
- *Compliance with safety standards regulatory requirements:* Compliance with Safety Standards ensures that all value-added activities meet food safety regulations, including handling, processing, packaging, and storage practices to protect consumer health. It also helps avoid legal penalties, fines, and potential shutdowns due to non-compliance. Regular inspections and certifications ensure ongoing adherence to food safety standards, building trust with consumers and regulatory bodies.
- *Capacity building and training*: Providing training to farmers and processors on safe processing techniques that meet national food safety requirements, will enable them to produce market-ready products. Educating farmers on sustainable practices ensures long-term adherence to food safety and practices improves their skills and knowledge, leading to better handling and processing of fish.
- *Certification and quality control*: Assisting farmers in obtaining necessary certifications and conducting quality control measures to guarantee compliance with food safety standards, will facilitate market access.
- *Economic and social benefits:* Meeting food safety standards can open up new markets, both locally and internationally, increasing revenue. Providing safe, high-quality fish contributes to the overall health and well-being of the community.
- *Environmental impact:* Adhering to regulations often includes sustainable practices that minimize environmental impact, promoting long-term ecological balance.

85. *The National Strategy on Financial Education for Zambia (2019–2024 NSFE II)*: The Strategy sets out a framework for improving financial education in Zambia. The primary objective of the strategy is to empower Zambians with knowledge, understanding, skills, motivation and confidence to help them to secure positive financial outcomes for themselves and their families. The implementation of the Strategy involves the provision of financial education for all age groups, including children, youth, and adults.[44]

86. *The National Financial Sector Development Policy (2017):* The Policy aims at having a well-developed, competitive, and inclusive financial system that supports efficient resource mobilisation and access to financial services and products by all. This takes cognizance that a well-developed and functioning financial sector would support the attraction and mobilisation of savings and investments, allocate resources for development, and build the trust and confidence of a wide and diversified consumer base. The Policy aims to achieve the following as objectives: to develop a competitive and resilient financial sector; to develop and maintain an enabling regulatory environment for the financial sector; to make the financial sector more inclusive and deepen the financial markets; to develop

[43] Government of the Republic of Zambia (2011): Fisheries Regulations.

[44] Government of Zambia (2019): The National Strategy on Financial Education for Zambia.

MSMEs and rural finance; to enhance financial infrastructure in accordance with international best practices; to increase financial literacy and strengthen consumer protection, and to facilitate effective and sustainable partnership in the provision of financial products and services.[45]

87. *The Second National Financial Inclusion Strategy (2024–2028):* The vision for financial inclusion in Zambia is to have universal access to and usage of a broad range of quality and affordable financial products and services through widespread and accessible delivery channels; diverse, innovative, customer-centric products; finance for SME and agricultural sector growth, and financial consumer protection and capability. The implementation of the strategy focuses on 'high priority, high impacts' interventions that include: migrating government-to-person and person-to-government payments to digital platforms; issuing agency and mobile banking regulations; designing, test, and launch simplified and tailored products for unserved and underserved consumers, including via mobile-based channels; reviewing and finalizing the credit reporting bill; promoting utilization of the movable property security interest register to increase asset-based lending, especially to SMEs; and building capacity of regulators to undertake financial consumer protection supervision.[46]

88. *Zambia's Public Finance Management Act 2018*:The Act provides for an institutional and regulatory framework for management of public funds; the strengthening of accountability, oversight, management and control of public funds in the public financial management framework; responsibilities and fiduciary duties of controlling officers and Controlling bodies; enhancement of cash management systems to ensure efficient and effective utilization of cash for the Government; the processes for efficient production of the Financial Report for the Republic; the management and control of public assets and stores. The project will ensure adherence to the Act, particularly with regards to the Savings Group model in component 2.[47]

89. *The Rural Finance Policy and Strategy of (2012)*: The policy acknowledges that increasing access to financial services by rural households in Zambia is cardinal for the country to reduce poverty, create employment and wealth and attract meaningful industrial development in rural areas that can lead to sustainable economic growth for the entire country. Rural financial services in Zambia are underdeveloped, with few rural financial service providers. Most microfinance institutions operate in urban or peri-urban settings only, while cooperatives ceased to play their erstwhile predominant role in rural financing and commercial banks have closed many rural branch offices citing operational costs. With the vision to have a vibrant and well-resourced rural communities that enjoy prospects of sustained socioeconomic development, the policy seeks to: develop and maintain an enabling, predictable and coherent policy, legislative and regulatory environment for rural finance that supports national development priorities; ensure a soundly based regulatory and supervisory system for all financial services; facilitate the provision of affordable and easily accessible rural finance products and services; endure policy coherence with regard to rural finance across the government; facilitate effective and sustainable partnership with the private sector and other non-state actors in the provision of rural finance; and ensure that there is equity in access to rural finance focusing on bridging existing geographical, social and gender gaps in access to resources.[48]

90. *The Micro, Small and Medium Enterprise Development Policy (2008)*: This Policy provides for the active support and participation of all key stakeholders in the development of Micro, Small, and Medium Enterprises (MSMEs). The hallmark of this Policy is partnership and an enabling environment. The objectives of the Policy include: creation and development of viable MSMEs that contributes towards annual employment creation and towards Gross Domestic Product; increasing utilization and value addition of local raw materials in identified regional areas; strengthening forward linkages between MSMEs and large scale companies by facilitating an annual increase in subcontracting of MSME by large scale companies; improve productivity in the MSME sector; and enhancing Local Economic Development thereby stimulating broad based economic growth.[49]

91. *Urban and Regional Planning (Development Plans Guidelines and Exempted Development Classes) Regulations (2023)*: These Regulations consisting of 21 articles organized into five Parts aim to categorize different land uses and

[45] Government of Zambia (2017): National Financial Sector Development Policy
[46] Government of Zambia (2017): National Financial Inclusion Strategy
[47] Government of Zambia (2018): The Public Finance Management Act, 2018
[48] Government of Zambia (2012): National Financial Inclusion Strategy
[49] Government of Zambia (2008): The Micro, Small and Medium Enterprise Development Policy

specifies the conditions under which planning authorities may grant development permits and regulate the following main topics (i) diagrams and plans concerning requirements for land use maps, including utilities, transportation layout, and information needed on maps. As per the cited planning regulations the project will be in compliance with respect to the construction and rehabilitation of culverts at crossing points as detailed in output 1.4 by seeking consent from the Ministry of Water or Transport for the widening or deepening of a water course.

F. Duplication of project with other funding sources, if any

92. There is no duplication with other funding sources. On the contrary complementarity is established through the choice to ride on investments already made by other projects in the country – ensuring synergies, complementarities and drawing lessons from community engagements to build and strengthen resilience while reducing vulnerability. CALRF has drawn lessons from the tabulated projects below, and will continue to seek complementarity from them to avoid duplication and waste of resources particularly with regards to sharing lessons for activity implication.

93. Table 8 shows CARL's alignment with past and ongoing projects for complementarity

Table 9 CALRF complementarity with baseline projects

No.	Project title	Project description	Areas of complementarity and justification
1.	Rural Finance Expansion Programme (RUFEP) – IFAD-implemented	The Programme is aimed at promoting access to and usage of sustainable financial services and products by poor rural men, women and youth in Zambia. The program is structured around (i) Strategic Partnerships; (ii) Innovation and Outreach Facility (IOF) and (iii) Knowledge Management and Programme Implementation.	The project will build on networks and partnerships in the finance space within the target districts. CALRF will therefore work with various service providers which will include new and already existing partners of RUFEP network.
2.	Strengthening climate resilience of agricultural livelihoods in Agro-Ecological Regions I and II (SCRALA) – IFAD-implemented	The project is USD 32 million GCF-funded to indirectly support three million small-scale farmers in building climate resilient lives. Implemented by the Ministry of Agriculture, the project is helping farmers in 16 districts across five provinces (predominantly in the south) cope better with climate change threats through modern technology, sustainable growing techniques and better understanding of climate issues. To broaden the reach of weather updates, the project partners with community radio stations to interpret and broadcast weather information in local languages and intends to train the presenters on how to better interpret the information	In terms of communicating weather updates, SCRALA collaborates with radio stations to disseminate information in local languages but also to train journalists. Building on this focus, CALRF will train communities in target districts in using climate-related information to prioritize concrete adaptation options, develop the taxonomy of viable climate change adaptation investments options and support district level to enhance climate change and systematic adaptation planning
3.	Zambia Strengthening Climate Resilience (PPCR Phase II) - World Bank-implemented	Financed by the Climate investment Funds and implemented by the World Bank and African Development Bank, the project seeks to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin	PPCR II focuses in Western province, particularly in the Barotse sub-basin. CALRF will build on PPCR II's lessons particularly regarding participatory adaptation and management of community adaptation sub-grants to build resilience and build adaptive capacities.
4.	Zambia Integrated Forest Landscape Project (ZIFLP) - World Bank-implemented	This project is supported by the Zambian government in partnership with World Bank meant to improve landscape management and increase environmental and economic benefits for the targeted rural communities in Eastern province. It is designed around improving an	ZIFLP is implemented in Eastern Zambia. CALRF will complement ZIFLP's lesson regarding community engagement to enhance conservation of ecosystem services while simultaneously improving rural

No.	Project title	Project description	Areas of complementarity and justification
		enabling environment for livelihood investments, improving rural livelihoods, conservation of ecosystems and reducing emissions and providing assistance in case of emergency relief or disaster	livelihoods – including local-level institutional arrangements that support the achievement of both goals.
6.	Transforming Landscapes for Resilience and Development (TRALARD) - World Bank-implemented	This is a $100 million World Bank-funded project in Northern, Muchinga and Luapula provinces that is supporting the sustainable use of natural resources for livelihoods, and help the government of Zambia respond adequately and timely to a crisis or emergency	CALRF's approach has drawn on community mobilization and targeting strategy in TRALARD which has also focused more on cooperatives and service providers on the ground than individuals. Focusing on cooperatives or groups of people offers a better multiplier effect of a project's achievement. It should be noted that TRALARD and CALRF overlap in terms of geographical coverage in Luapula province.
7.	UNEP Ecosystem-based Adaptation project UNEP - Implemented	UNEP is now supporting the Government of Zambia to improve the climate resilience of local people living near wetlands by strengthening the capacity of local communities and local governments to implement ecosystem-based adaptation interventions. This is being achieved by piloting ecosystem-based adaptation measures in sites across the Bangweulu and Lukanga wetlands (and adjacent forest ecosystems) and by providing training to the local and national governments on adaptation planning and implementation.	The idea of CALRF to use practices such as agroforestry and crop mixed systems is drawn from NbS in the UNEP project understanding that NbS are more cost-effective to create multiple benefits for humans and the environment.
8.	Climate Smart Agriculture, executed by Save the Environment and People Agency (SEPA)	SEPA is working with traditional leaders, women, youths, farmers and extension officers to try and deepen the understanding on how the community can best protect the environment through building the capacity of communities and deepening their understanding of sustainable environmental protection and sustainable natural resources management as well as close gaps between good and bad environmental practices.	Building on this focus, CALRF will train communities in target districts in entrepreneurship, capacity building, tree planting, sustainable agriculture, water and sanitation, climate change issues in the project areas. CALRF's inspiration from SEPA relates to community engagement mechanisms to strengthen community ownership.
9.	Smallholder Productivity and promotion Programme (S3P) – IFAD implemented	S3P was designed and implemented to sustainably achieve food and nutrition security and increased incomes among targeted beneficiaries through attainment of the Programme Development Objective of increased productivity, production and agricultural sales. It was implemented in Luapula, Muchinga and Northern Provinces of Zambia and it closed on 31.12.2019	CALRF will build on the capacities created by S3P in the two provinces targeted for implementation. S3P promoted environmentally friendly agricultural practices, such as Conservation Agriculture, organic farming (that included composting and discouraged use of chemicals), agro-forestry and system for crop intensification. S3P has a legacy in Luapula where it will overlap with CALRF

No.	Project title	Project description	Areas of complementarity and justification
10.	Enhanced-Smallholder Livestock Improvement Programme (E-SLIP) – IFAD implemented	The development objective of ESLIP is to sustainably improve the production and productivity of major livestock among targeted household beneficiaries (female and male smallholders) in selected provinces and districts though the Programme has a national scope. The Programme prioritizes districts that are prone to outbreaks of Contagious Bovine Pleuro-pneumonia (CBPP), and/or East Coast Fever (ECF).	Drawing on E-SLIP, CALRF will support producers with fodder production using Velvet beans, Cowpea and Red Sunhemp, Rhodes grass and *Panicum maximum.*
11	Support to Climate Adaptation through Rural Finance (SCARF) – IFAD implemented $20 m (Funded by the Global Agriculture and Food Security Program)	The project seeks to build resilience and adaptive capacity of the project beneficiaries in response to global food crisis and persistent climate change challenges through increased productivity and production of basic food commodities. The project will boost food and nutritional security and household incomes particularly for vulnerable households (youth and female headed households) adversely affected by the global food crisis.	CALRF will be scaled up and catalysed through SCARF particularly with regards to activities promote resilient seed varieties, and capacity development in all the 15 districts.
12.	Zambia Growth Opportunities Program (ZAMGROW)	This is World Bank-$300 million funded Program with foci on: i) enhanced policies and institutions for accelerating diversified, resilient and inclusive agricultural growth; ii) improved services for accelerating diversified, resilient and inclusive agricultural growth; and iii) improved rural infrastructure and assets for accelerating diversified, resilient and inclusive agricultural growth. The program seeks to promote agricultural diversification, sustainability and jobs in the agri-food sector in Zambia.	CALRF is designed to be partly implemented through extension officers at the Ministry of Agriculture, and Ministry of Livestock and Fisheries will create gender-responsive job opportunities through crop and fish value chains to complement ZAMGROW.

94. In terms of fish value chains, the design of CALRF has ensured there is no duplication with other funding sources, while also presenting numerous opportunities for synergies and complementarity. Specifically, this project will build on the recent efforts of other internationally funded initiatives through the Department of Fisheries. These projects include:

- Zambia Aquaculture Enterprise Development Project (ZAEDP)50: Funded by the African Development Bank (AfDB), this project was implemented in high-potential zones such as Siavonga, Chipepo, Bangweulu, Kasempa, Rufunsa, and Mungwi from 2017 to 2021. It aimed to stimulate a viable aquaculture subsector in Zambia, focusing on economic diversification, food security, and sustainable employment generation.
- Zambia Aquaculture Project Technical Assistance (ZAP-TA)51: This grant-funded initiative by the European Union runs from August 2022 to July 2026. It aims to reduce rural poverty and malnutrition while improving rural livelihoods.
- Sustainable Fisheries and Aquaculture in Zambia Project52: Funded by GIZ - this project supported the implementation of the Zambian government's National Aquaculture Strategy from July 2019 to June 2023. It aimed to enhance food security and reduce poverty by supporting sustainable fish production in Luapula Province (Northern Zambia) and Eastern Province.

[50] Ministry of Fisheries and Livestock Zambia. Zambia Aquaculture Enterprise Development Project (ZAEDP).
[51] Ministry of Fisheries and Livestock Zambia. Zambia Aquaculture Project.
[52] Sustainable Fisheries and Aquaculture in Zambia.

95. The proposed fish value is designed to overcome the challenges experienced by the above projects at implementation and this primarily the inadequate supply of fish fingerlings and fish feed in Luapula region. The synergies and complementarity to the above projects will include; supply of fish fingerlings and fish feed that are in short supply even for the above funded projects in the target project area thus the continued sustenance of aquaculture groups established by the above projects.

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned

96. Component 3 on enhancing district-level planning and awareness-raising for evidence-based resilience and adaptive capacity building is dedicated to ensuring that the project more effectively captures, stores, shares and utilizes relevant information and best practices. Better knowledge management for the project will lead to more informed decision making, increased efficiency, and improved outcomes. Effective knowledge management will enable the project to synergize better with other projects. This will foster a culture of continuous improvement and innovation, allowing the project to adapt to changing circumstances and better manage the complex and dynamic environment of natural resources as they get affected by different factors such as extreme weather events.

97. The project under component 3 will develop key aspects of knowledge required to support well-informed, systematic, evidence-based adaptation activities, and raise awareness among the target stakeholders on the demonstrated economic and operational performance of resilient investments. Output 3.1. will see the development of a weather and climate information system in partnership with Zamtel, which will support communities' access to reliable weather and climate information on-demand whereby enhancing their ability to cope with climate change events. Further under Output 3.1, knowledge exchange platforms will be organised in the form of workshops gathering key project stakeholders, with a view to generate linkages, partnerships, and knowledge exchange to foster the scale-up and multiplication of resilient investments and interventions in the three target sectors. Finally, under Output 3.2 the project will support systematic and effective sub-national planning in the targeted 15 districts through the development of district-level planning strategies, directly informed by rounds of consultations and gathering of information from communities.

98. To ensure that relevant project stakeholders, particularly the target population have improved knowledge and awareness of climate change risks to support effective evidence-based adaptation planning at sub-national levels, some of the knowledge products will include training guides and manuals in financial and market literacy, agricultural and aquaculture production, and business management among other topics, developed as part of the pre- and post-grant support of the Grant Facility. The project will organize knowledge information hubs as one stop shops, website for the project, Videos and multimedia, knowledge-sharing platforms – and reports which will be shared in the print media and TV in collaboration with ZANIS. It should be pointed out that training materials, reports, video and multimedia will include translations into local languages to ensure the information is close to the people and they are able to understand it correctly.

99. In terms of learning and knowledge management, CALRF will ensure these standard project aspects are fully operationalized as part of the implementation strategy. To this effect, the project will develop a knowledge management strategy (KMS) during design and early project implementation. The KMS will spell out and provide guidance regarding processes for generating, capturing, sharing and disseminating lessons. The KMS will also set out how lessons from the project will be integrated with existing knowledge and how this will inform adaptive management of the project itself. The project KMS will adopt a three-thronged approach that focuses on knowledge generation, knowledge use and enabling environment.

100. The project interventions will generate a number of knowledge products such as training manuals, training reports, practical guidelines and manuals on resource access, use and management in climate change vulnerable contexts, market literacy, community engagement and response to extreme weather events, and district-level adaptation plans. Videos and photos from the fields where the project activities will be implemented will be useful tools. Good practices and key lessons from project interventions will be identified, documented as case studies,

bulletins, pictures, and videos. In addition, the project will also produce learning documents, evaluation reports and a policy recommendations report. Knowledge generation will be the responsibility of the project management team.

101. Considering the capacity needs, the project management team will receive training on knowledge management to facilitate collection, analysis and dissemination of evidence, good practice and lessons. Different methods will be used to collect evidence and lessons, which include key-informant interviews, surveys and focus group discussions. Collection of evidence and lessons learnt will be included as regular part of M&E and thus will be done during annual reviews, mid-term and end of term project evaluation. The lessons learnt will assist in replication and scaling up of activities but also to facilitate intra and inter-district sharing of lessons – particularly important given the different agro-ecological zones of the target districts.

102. The lessons and knowledge from the project will be captured through specific activities that will complement the monitoring and evaluation system of the project. Under component 3 on project management, coordination, and monitoring, all activities related to KMS will be structured to ensure lessons are captured, disseminated and inform the adaptive strategy of the project – including strengthening the capacities of relevant stakeholders to implement project adaptation activities effectively and build socioeconomic but also ecological resilience.

103. Channels of dissemination will include social media platforms, print media, TV talks and radio programs as for the project learnings to reach the widest possible audience. Finally, the knowledge generated will also be disseminated through IFAD's website.

H. Consultative process, including the list of stakeholders consulted

104. The development of this proposal has gone through two stages: the first stage constituted the design of the Concept Note that was approved by the Adaptation Fund Board. The development of the concept note was a product of substantive consultations with different stakeholders. Consultative meetings were held with National Designated Authority (NDA), the Ministry of Agriculture at national level (including Zambia Agricultural Research Institute), Zambia Development Agency (ZDA) and the Ministry of Commerce, Trade & Industry, and with community. A wide stakeholder meeting took place during the RUFEP supervision mission in November 2021. The meeting was an online planning meeting, and the invitees were able to discuss version 0 of the Concept Note.

105. Several stakeholders have been involved at different levels in the development of the document, building on initial engagements at Concept Note. These have included the Ministry of National Development Planning, which previously hosted the NDA, District Development Coordinating Committees (DDCCs) which include the district councils and all relevant government line departments (i.e., fisheries, forest, agriculture, community development & social welfare, chiefs and traditional affairs, and local civic leaders). Other institutions consulted include women and youth groups. At district level, meetings were held with all key members of the DDCC to discuss the climate change adaptation needs in different locations.

106. The development of the current version has benefitted from consultations with FSPs to understand their level of involvement in the agriculture sector, particularly with regards to the smallholder farmers who are financially constrained and do not have any collateral assets. Besides the private sector, additional consultations have been had with other government agencies to confirm their roles in the implementation of the project activities. These have included the Ministry of Health, the Ministry of Finance and National Planning, Ministry of Agriculture, Ministry of Green Economy and Environment, Ministry of Fisheries and Livestock, Ministry of Small and Medium Enterprises (MSME) and the Bank of Zambia.

107. The main inputs received from the consulted communities were the confirmation of the vulnerabilities of their livelihoods to climate change. Some communities, particularly those in Luapula province are dependent on fisheries mainly from the lakes and projected impacts of climate change on fisheries will lead to low fish catches, undermine household incomes and exacerbate the already high poverty levels. Household incomes in fishing-dependent communities are further compromised by reduced market value of the fish due to poor post-harvest handling. Therefore, climate smart fish farming provides an opportunity for building the resilience to climate change. Other

communities are dependent on crop and small-ruminant production – productivity dwindling due to rainfall variability both in terms of quantity and onset shift (with some delay estimated at one to two months), land degradation but also frequent crop and animal disease outbreaks. Communities therefore called for building their skill base in CSA, reduction in post-harvest losses and livelihoods diversification to cushion the socioeconomic burdens imposed by the impacts of climate change on the sectors that support their survival.

108. Preliminary consultations with rural communities, constituting the vulnerable and marginalized community members have therefore, inspired the design of this project. The community meetings were held in the afternoons to allow women to participate as they are occupied with other responsibilities in the mornings, particularly working on farms, collecting firewood or drawing water from water sources, which usually are far away from homesteads. In addition, separate meetings were held with women and youth to ensure effective participation.

109. The second stage of engagement with different stakeholders followed after the approval of the Concept Note – that is, stakeholder consultations to support the full development of the proposal. As during the Concept Note development stage, the mechanisms and techniques for holding consultations with stakeholders were tailored to stakeholder types or categories. For example, to ensure meaningful women participation and involvement in the consultations, two strategies were used in communities: first, women were met separately from men to allow them to speak freely and propose activities that were culturally-responsive to their roles as women, including proposing how they can be more effectively be involved in a cultural context that does not cause problems with their spouses. Second, the time chosen to hold community meetings with women was 'off-peak' vis-à-vis their drudgeries to ensure that they did not have to choose between attending the project group meetings and staying home to cook, or draw water or work in their fields.

110. For an adaptation project such as CALRF, participatory engagement of women has been critical. This is because the impacts of climate change affect women in different ways than men. For example, drought, specifically, threatens agricultural productivity, resulting in heightened food insecurity and diminished household incomes; these processes can catalyze other downstream risks, like early marriage and transactional sex, associated with poverty.[53] That is, the consultation process took into account the understanding that the impacts of climate change as well as the coping strategies and access to natural resources are gendered. Women and children dominate the collection and sale of mushrooms, vegetables, and fruits within households, while men dominated honey collection and charcoal production.[54]

111. To ensure presence of the vulnerable (specific reference here is being made to women, the youth, the differently-abled and the poor with no socioeconomic survival capital in communities), communities were first sensitized through traditional leaders. Traditional leaders supported consultations, and the process rode on the respect that they are accorded in communities to ensure that the vulnerable were not excluded.

112. At national, provincial and district levels, consultations were facilitated by the Ministry of Finance and National Planning, Ministry of Environment and Green Economy and the Ministry of Agriculture that have presence at all the three administrative tiers. They were the locator stakeholders that helped to convene other stakeholders to participate in the consultations. For these, consultations took a hybrid format where some officers and other partners were physically present in one room, while others joined virtually. The first stakeholder consultation for the full development of CALRF was opened and closed by the Director from Ministry of Agriculture. It should be pointed out that CALRF has received great support from the Government of Zambia, and it is hoped that the level of commitment demonstrated hitherto will be useful in ensuring the sustainability of the project outcomes.

[53] Rosen, J.G., Mulenga, D., Phiri, L. et al (2021). "Burnt by the scorching sun": climate-induced livelihood transformations, reproductive health, and fertility trajectories in drought-affected communities of Zambia. *BMC Public Health*

[54] Kalaba et al. (2013). Contribution of forest provisioning ecosystem services to rural livelihoods in the Miombo woodlands of Zambia. *Journal of Population and Environment*

Table 10 Stakeholders contribution to project design

#	Stakeholders	Contribution to the proposal development
1	Government authorities: NDA, Ministry of Green Economy, Ministry of Finance and National Planning, Ministry of Agriculture, Ministry of Fisheries and Livestock, Ministry of Commerce, Trade & Industry, Zambia Development Agency	• To ensure the project proposal remains consistent with Government development priorities and policies, particularly in addressing adaptation challenges. • To identify current challenges and opportunities for synergies.
2	Development partners: FAO, World Bank, the EU, USAID, WFP, WWF, IFAD-funded programmes (RUFEP, E-SAPP, E-SLIP)	• To identify ongoing interventions in the areas of climate change adaptation and rural finance to avoid duplication of effort. To ensure the project's rationale and proposed approach are technically soundand identify opportunities for synergies.
3	Private sector: RUFEP's current network of financing partners and potential partners to be selected through a competitive selection process	• To identify opportunities for private sector engagement in financing adaptation activities.
4	Civil society: CHAZ, NACRO, Zambia Rainbow Development Foundation	• To take stock of ongoing activities related to adaptation and rural finance and identify opportunities for scaling up successful approaches.
5	Smallholder farmers and farmer' groups: beneficiaries from IFAD-funded programmes	• To identify needs and current challenges affecting potential beneficiaries at individual and farmer' group levels.
6	Vulnerable groups in communities located in all the target districts of the five priority provinces.	• To assess the vulnerabilities of the livelihoods with respect to climate change, gather information on current strategies of coping with climate change and assess needs of communities to improve their resilience to climate change. • The communities in these districts are among the potential beneficiaries of the economic benefits, and their contributions during consultations have shaped the activities of the project. • The community members will be involved in project activity implementation and their capacities developed at various levels, including in the monitoring and evaluation of the progress of the project
7	Implementing Partners, The Copperbelt University, HODI and RESEI	• Identify value chains and develop them within priority districts for implementation for meaningful impact in terms of addressing adaptation gaps.

113. Various issues were discussed that related to community involvement in the life of the project starting from planning and implementation. One issue relevant to safeguards was raised where particularly communities in cooperatives/producer groups raised concerns over benefit sharing mechanisms. One way that will be overcome as a challenge is to digitize financial systems of cooperatives and producer groups to increase transparency. Beneficiary sharing mechanisms will be strengthened in all cooperatives that the project will support. This will be critical to curb community-level 'elite capture.' Related to this was with the private sector that communities felt would not support them with financial services because they are too poor to have anything to be collateralized for them to access financial services. In response, financial service providers will conduct assessments to enable them to develop products and services that suit the context of smallholders in rural areas. On the part of the financial service providers, they raised a concern on the project's ability to provide insurance on behalf of communities in the first year before the Adapt Fund becomes functional. The premise is to support a people's process for the project to achieve its objective by ensuring that communities buy into the idea of the project and their ownership is enhanced. During consultations, it was understood that some project districts have more vibrant social groups such as cooperatives while in others, these would need to be formed and strengthened. Experience shows that community ownership of projects is through social

groups such as cooperatives where members share a common vision of their contexts. It should be stated here that social cohesion is an extremely important cord that binds people together in achieving goals beyond an individual person or household.

114. The role of social cohesion reflected by individual willingness to belong to a group such as a cooperative should not be downplayed in understanding enabling community-level social dynamics for project success. Therefore, the needs of cooperatives will need to be assessed, and based on the assessment, their social structures will need to be strengthened and their capacities developed to ensure project absorption at community level. This will strengthen and sustain community involvement in the project through planning, executing activities and monitoring of project activities. Given the predominance of youth and young population within the prioritized districts, it will be imperative to deliberately involve young women and men during the community level project consultations and planning, and identify opportunities for their engagement during implementation and monitoring; as well as in the knowledge dissemination and awareness-raising aspects of the project.

115. Stakeholder consultations also informed rapid vulnerability assessment with community members to identify vulnerabilities and prioritize activities to address the vulnerability with community inputs. The outcomes of the consultations have been integrated in the project, and relate to the proposed activities, community benefits, the role of women and other vulnerable groups and how the project will be deliberate in ensuring their inclusion in project implementation. Other issues raised during the consultations included the challenges that communities have had to contend with due to COVID-19 pandemic, difficulties in access markets for the produce, physical and economic isolation from government systems to support communities in times of difficulties such as extreme weather events, and limited extension worker support.

116. CALRF seeks to work closely with communities in their socioecological and economic context. The project will do so by closely working with other partners who are already in the target districts. Even at design stage, CALRF has collaborated with these community-level partners to conduct stakeholder consultations with communities. For example, CALRF has collaborated with The Zambian Rainbow Development Foundation (ZRDF) - an organisation working in Luano and Mkushi Districts (CALRF-targeted risks) (see Annex 3 of community consultations). ZRDF focuses on livelihood and food security, Economic Empowerment, Education support and Health support. The organisation promotes community-led and owned development project and uses participatory approaches in all of its interventions.

117. In the implementation of project activities related to the value chains, the project will collaborate with The Copperbelt University, HODI and ReSEI – as important implementing partners in their areas of expertise. The Copperbelt University will partner with CALRF on fisheries, and HODI and ReSEI will collaborate with the project on fruit tree value chain development.

118. At national level, issues raised by stakeholders present during the consultation process included the ones in the Table below. Consultations in pictures, including lists of attendees are in annex 4 of this document.

119. Table 10 provides a summary of key issues raised during stakeholder consultations.

Table 11 Key issues raised during stakeholders consultations

Issues raised	How issues how have integrated in the project
Soil and land degradation affecting both crop and livestock production	The project intends to: i) rehabilitate and restore degraded land using mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds on 2,500 ha.
High poverty levels in rural isolated areas that make it difficult for climate change affected households to cope with the extreme events	The project intends to: i) support tailored financing solutions for agricultural mechanization and climate smart technologies e.g. Decentralized Renewable Energy sources, Solar Irrigation systems, Solar Cooling Systems, climate tolerant seed varieties and livestock breeds, improved storage and agro-processing units.
Traditional customs and practices that keep women from playing	The project intends to: i) conduct a targeted climate sensitive capacity needs assessment to support the selection of farmer groups and households (ensuring

certain key roles in society, including the manner of using natural resources.	participation of women, youth and other vulnerable community members). ii) support the adoption of sustainable agricultural practices (including mulching, procuring more productive and drought-tolerant seeds) on 1,500 ha; aquaculture; crop diversification; install composting and mulching facilities; provide soil testing services; bee-keeping; among others to benefit 1,000 households (50% of which will be female-headed and 30% youth or households where the youth are the bread-winners).
Rural areas are cut off from the socioeconomic hubs, which makes it difficult for people to access socio-economic opportunities, including markets for their produce, meagre as this call.	The project intends to: i) identify and prioritize to repair 5 critical crossing points to facilitate market linkages between producer groups and buyers. ii) support local level processing and marketing (branding and labelling) of selected crop products, including enhancing phytosanitary services. ii) support the procuring and installation of small crop processing and storage facilities, smallholder irrigation systems, water supply and sanitation infrastructure, among others.
'Elite capture' that keeps away women, youth and the differently-abled and other vulnerable people from meaningful participation in project implementation activity and inequitable distribution of benefits.	The project intends to: i) Promote diversification livelihood strategies beyond farm level interventions (promotion of off-season production using irrigation–rainwater harvesting systems - agro-forestry – linked to nurseries at community level on 1,000 ha for the benefit of women, youth and other vulnerable people. ii) Conduct a targeted climate sensitive capacity needs assessment to support the selection of farmer groups and households (ensuring participation of women, youth and other vulnerable community members).

I. Justification for funding requested, focusing on the full cost of adaptation reasoning

120. The Implementing Entity confirms that the proposed CALRF project activities are relevant in addressing its adaptation objectives and that its expected adaptation impact will be delivered without additional funding from other donors (co-financing), using only AF funding. All activities under the proposed CARL project will be financed using AF funding, contributing to the project's overall objective to build and enhance the adaptive capacities of vulnerable smallholder farmers through resilient livelihood options and access to finance for investment in three target sectors in five provinces in Zambia.

121. Further, the justification for funding requested, in the absence of alternative sources of funding for adaptation actions, is as follows:

122. The climate crisis is the latest in a series of challenges that have affected the Zambian economy. In November 2020 the country defaulted on its sovereign debts and started the process of renegotiation. Since then, Zambia has dealt with the effects of the Covid-19 pandemic, a dramatic slump in the output and performance of the mining sector which accounts for a significant share of government revenue, the impact of conflicts, and now the climate crisis. These challenges have, among other things, impacted the cost of living, the cost of doing business, and introduced volatility in key macroeconomic indicators. Although the 2025 Budget projects increases in domestic revenue to finance its ambitious expenditure targets, available resources for climate change adaptation and environmental protection are limited, especially in light of fragile economic performance. Indeed, much of the budgetary focus has been on crisis response and supporting the most vulnerable in society when disasters hit. Since 2020, the GoZ has increased spending on social protection, with allocations to the Social Cash Transfer, Cash for Work Programme, and the Food Security Pack. Overall, the budget for social protection has increased by 67% from K9.67 billion for 2024 to K16.12 billion for 2025. However essential these measures are for protecting the most vulnerable, direct financial support for climate change adaptation and adaptation planning are needed.

123. In this new budget, the Government has made an allocation of K15.4 billion (USD 55.1 million) towards agriculture, fisheries and livestock sub-sectors for 2025. In terms of government allocation in agriculture, the GoZ has pledged to invest to develop large-scale farming operations after the sector performance declined in 2024. However, smaller-scale and smallholder farming, which account for 80% of the country's agricultural output, remains largely underserved. Those who rely on rain-fed agriculture for income as well as food security will not be targeted

by these measures, albeit indirectly through improved economic activity. In terms of the fisheries sector, the Government aims to support fisheries production through the establishment of three new fish hatcheries in Kasempa, Mushindamo, and Samfya districts to further increase fingerling production. Taken together, these initiatives constitute positive developments to support a more resilient agricultural and fisheries sector, however they fall short in light of the financing needs to bring about sustainable change for the millions of Zambians who depend on agriculture and fisheries for their livelihoods and food security. The justification for this request of funding to the AF lies in the inability of the GoZ to finance the necessary adaptation investments and measures in these sectors for the most vulnerable, in times of high economic uncertainty, price volatility and extreme climate events.

124. Therefore, this proposal seeks 100% concessionality from the AF for urgent adaptation actions relating to the three target value chains. Without the proposed project, maladaptive coping strategies instead of resilient adaptations actions will continue to increase the vulnerability of Zambians engaging in small-scale agriculture, fisheries and aquaculture. As a result, ecosystem degradation will persist, reducing fisheries production and increasing exposure to climate related food insecurity in the longer-term. Further, unsustainable agricultural practices will continue to result in poor yields and income, jeopardizing national food security and limiting the diversification of income sources for the most vulnerable members of the community.

Business as usual scenario	**Adaptation Fund additionality**
Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options	
In a business-as-usual scenario, farmers in the target districts would continue to engage in resource-depleting agricultural practices such as slash and burn thereby continuing the negative cycle of maladaptive coping strategies. As 90% of domestic food supply is produced by smallholder farmers, urgent attention is needed to transform Zambia's agriculture sector from low-scale farming to a more structured sector with facilitated market linkages, enhanced practices, and access to inputs including locally adapted seeds. Insofar, small-scale farmer poverty is stuck in a cycle of recurring droughts and floods of increasing intensity and occurrence, which prevent farmers from generating sufficient income to invest in their means of production. Access to inputs is costly and local seed keeping and multiplication has remained at the household level. For fishers, temperature rise induced by anthropogenic climate change has resulted in a dramatic decline in inland fish populations, which significantly impacts income and food security in districts such as Luapula where 50% of the population relies on inland capture fisheries for income and food, as capture fisheries contribute to 56% of Zambia's fish production. In a business-as-usual scenario, fishers would continue to engage in inland fishing, further depleting the resource base also impacted by climate change, disrupting fragile ecosystems, and ultimately resulting in the destruction of fish stocks, jeopardizing income and food security. Climate-induced impacts of droughts and floods affect fish habitat and necessitate the expansion of aquaculture to meet the growing demand for fish.	AF funding will be additional through its significant contribution to the creation of an enabling environment at national and community levels to secure the uptake of resilience measures and adaptation planning processes over the long run. Specifically, the AF additionality is demonstrated through the following project outputs: - Development of a recommendations report and subsequent update of sectoral (agriculture, capture fisheries and aquaculture) training manuals for extension officers, to support enhanced functional alignment and the delivery of extension services that follow evidence-based best practices in climate-resilient agriculture and aquaculture - 1,500 camp extension officers (approx.. 100 per district) will be trained using the updated manuals and guidelines, resulting in the enhanced delivery of extension services which in turn will strengthen the adaptive capacity of beneficiary communities to climate shocks such as droughts and floods - Provision of mobility package to 500 camp extension officers, to pilot the use of bicycles with the objective of decarbonizing the local transport system and enabling access to more remote areas to provide extension services to communities in need. The pilot will also include the establishment of a local maintenance service of 25 youth who will be trained in mechanics - Organisation of 15 workshops gathering more than 10,000 beneficiaries from the target districts to collect data and information on communities' needs, priorities and vulnerabilities to inform the

For existing aquaculture operators, access to inputs such as fry, feed and fingerlings is costly due to important transport costs and waiting times for orders to be shipped from the few hatcheries that are operating in-country. Climate-induced droughts and floods also pose a serious risk to aquaculture operations as the suitability of farmed fish species declines. In a business-as-usual scenario, aquaculture operations would not reach the scale needed to be a sustainable income and food source for communities. Farmers, fishers and aquaculture operators face difficulty to access markets to sell produce due to long transport times and crossing points that regularly become flooded.	development of district-level adaptation planning strategies under Component 3. This participatory process will foster community ownership of the local level adaptation plans and ensure the inclusion of local voices into adaptation planning strategies - Delivery of 45 training lessons (one per thematic area in each of the 15 target districts) using updated technical guidelines and training manuals, also channelling a Training of Trainers approach to capacitate farmers champions to disseminate the acquired knowledge beyond the training sessions - Establishment of 2,500ha of demonstration plots to create a supply of sustainably-produced and locally adapted seeds for crop production, increasing the resilience of farmers to extended dry periods long-term, organized in Community Seed Banks to foster a participatory approach to resilient agriculture production - Building of two hatcheries and two fish feed plants in collaboration with key technical partners at CBU to enable a localised supply of fish fry, fingerlings and feed for existing and new aquaculture operators in fisheries-dependent districts - Rehabilitation of 5 critical crossing points to facilitate year-round mobility, market access and resilience to extreme climate events Taken together, these outputs will provide the tools, infrastructure and technical abilities to project stakeholders – communities, extension officers, local authorities and technical partners – to sustain the uptake of resilience measures to be financed by the Grant Facility, and support the availability of inputs necessary for resilient agriculture and aquaculture production at large.
Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options	
The agriculture sector is composed of a majority (80%) of smallholders who are not organized into cooperatives or farmers groups; lack a reliable access of agricultural inputs and productive assets; and face difficulty to reach markets due to poor market linkages. Effectively, the majority of farmers sell their production surplus and have no capacity to grow dedicated crops to sell to generate further income. This fragile equilibrium makes these smallholders particularly vulnerable to climate change impacts, being only one drought or flood episode away from crop failure which would translate to loss income and food insecurity.	For Component 2, AF funding will be instrumental in addressing long-standing barriers that hamper smallholders' profitability and food security. Further, AF funding will enable the implementation of measures to halt resource degradation in the 15 target districts by demonstrating the economic relevance of climate-smart agricultural practices and aquaculture production. More specifically, the AF additionality is demonstrated through the following outputs: - Establishment of a Facility with a financial and technical offering to foster the sustainability of financed sub-grants

Currently, access to financial services is one of the biggest challenges that smallholder farmers face - therefore, they cannot afford up-front cash outlays (e.g., input costs) and investment costs (e.g. seedlings, improved climate tolerant seeds, labor costs for construction of soil conservation structures, machinery and tools) associated with the implementation of climate-resilient farming practices. Rural credit schemes have been deployed to vulnerable communities but showed mixed results due to the absence of continuous support in financial management to beneficiaries which impacted the sustainability and transformational impact of these financing instruments. Without AF funding, the default rural credit model will continue to offer one-off financial support while not addressing core barriers to farm sustainability such as technical and knowledge gaps; reliance on external and costly inputs; and high climate-risk profiles of supported farming and fishing activities. The increasing intensity and recurrence of droughts and flood episodes will continue to feed into a negative feedback loop, whereby farmers and fishers' coping strategies to climate change further exacerbate land, ecosystem and forest degradation, resulting to aggravated income losses and food insecurity.	- Targeted outreach campaign to vulnerable communities - Provision of pre-grant support to ensure accessibility to all and enable candidate grantees to develop viable business projects displaying high impact potential - Provision of rural finance alongside post-grant technical assistance to support the operational and technical capacity of grantees in areas such as financial literacy, accounting, technical applied knowledge i.e. pest management, agricultural inputs, post-harvest techniques, marketing etc. The Grant Facility will award an estimated 220 grants, divided in 195 individual grants and 25 community grants, enabling the financing of resilience measures in the target districts and demonstrating the economic sense of climate change adaptation for crop and fish production - Training of extension agents to provide pre- and post-grant support to grantees based on revised guidelines and technical manual - Taken together, these outputs will result in the implementation of an innovative financing model that will enable the uptake of resilience measures in the agriculture and aquaculture sectors by sustaining financial and operational support to grantees over the long term. In turn, vulnerable communities will benefit from increased agricultural production and food security, reduce natural resource degradation and increased incomes from climate-resilient livelihoods.
Component 3. Enhancing knowledge management for evidence-based adaptation planning	
Vulnerable communities in the target districts experience floods, droughts, change of rainfall season onsets, disease outbreaks – and are able to tell the frequency and intensity of these phenomena is increasing. However, this community-level knowledge of climate related changes is based on past observational experiences of the different phenomena. In terms of planning and improving people's ability to cope, community-level knowledge is not informing enough partly because it is limited to the specific areas of immediate experience. Further, this ability does not translate into enhanced coping strategies when faced with adverse climate change events. On the other hand, adaptation planning remains vertical with little to no financing being allocated for district-level adaptation planning and a limited dissemination of knowledge and learnings from national to district-level authorities and among other stakeholders such as industry associations, research institutions and finance providers. Without AF funding, vulnerable communities will continue to depend on subjective climate and weather	The AF additionality under Component 3 is demonstrated through the following key outputs: - Deployment of Interactive Voice Response (IVR) Systems for farmers to receive weather forecasts and agricultural advice in local languages for free - Diffusion of community radio broadcasts to disseminate weather forecasts and climate updates to ensure those who do not have access to a phone can still receive the information - Organisation of 4 national-level workshops gathering project stakeholders and partners, to create communities of practices and foster the scalability and sustainability of CALRF outcomes - Development of a resource mobilisation strategy with Financial Service Providers (FSPs) for the Grant Facility - Development of 15 district and community level adaptation planning strategies

observations to plan their livelihoods strategies. Further, different ministries and national authorities will continue to work in silos failing to adequately capacitate agriculture extension services.	- Training of community leaders on climate adaptation policy integration to mainstream resilience targets at the local level Taken together, these outputs will enable community to adequality plan and respond to future climate impacts, while enhancing collaboration and knowledge exchange among project stakeholders.

J. Sustainability of the project outcomes

125. This project builds on the achievements and institutional arrangements of RUFEP that has been promoting access to and usage of finance for agricultural value chains by men, women and youth across Zambia, including in the CALRF districts. The design of CALRF is taking advantage of all these institutional arrangements and partners to ensure: i) a participatory approach in the identification of project priorities, communities and activities; ii) social license that will ensure effective collaboration, ownership and sustainability of project activities and outcomes; and iii) cost effectiveness. The active participation of beneficiaries and local public and private entities throughout the project cycle: design, implementation, monitoring/ supervision and evaluation will ensure the project's sustainability at the level of its activities and results.

126. Given the extreme nature of climate change events hampering adaptation efforts in Zambia at large and in the 15 target districts in particular, the GoZ is currently unable to provide adequate financing to support the creation and multiplication of resilient measures and enterprises. Specifically, the GoZ is unable to finance the required infrastructure to support the scale-up of the fruit and fish value chains, such as hatcheries, feed processing plants and processing facilities for mangoes, lemons, macadamia and avocadoes. The progressive depletion of the resource base coupled with land degradation due to unsustainable fishing and farming practices will unavoidably result in economic losses, the results of which would impact national economic stability. Under this project, AF funding would act a transformational trigger to incentivize local communities to engage in climate resilient practices for food and fish production, while capacitating national institutional partners to sustain these efforts.

127. The sustainability of the project outcomes is an inherent part of the proposed activities and demonstrated in the following ways:

128. **Recommendations report and roadmap for the delivery of extension services**: As part of Activity 1.1.1, the project will work with the Ministry of Agriculture and the Ministry of Livestock and Fisheries at the national and district levels to carry out a gap assessment on the delivery of extension services. Insofar extension agents have had difficulties to reach the most vulnerable communities in need, and their knowledge base lacks up-to-date information on resilient agricultural practices, sustainable fishing methods, and resilient aquaculture production. The provision of training for 1,500 extension agents will sustain local access to technical and operational knowledge for communities during and after the project ends.

129. **Updated training manuals and technical guidelines**: As explained above, the project will support the creation or update of technical manuals and guidelines in the three target value chains. These manuals and technical guidelines will be instrumental for the delivery of technical assistance under the Grant Facility, and will serve as knowledge tools for the training of future additional extension agents. These materials will be made available as part of the project KMS to be used by research, policy or regional stakeholders.

130. **Consultation with communities for enhanced district-level adaptation planning**: These consultations to be carried out under Activity 1.2.1 will inherently guarantee the sustainability of the district-level planning strategies to be developed under Activity 3.2.1. The knowledge and information generated as part of these consultations will underpin the development of the district-level strategies, thereby securing community buy-in and endorsement of the

measures. This will be supported through the development of an associated recommendations report for policy makers to be made aware of communities' needs and priorities for climate change adaptation.

131. **Delivery of training to communities in selected value chains:** Under Activity 1.2.2, target communities including traditional leaders will receive training based on the updated training manuals and technical guidelines in the three value chains. Using a Training of Trainers approach, the project will designate training champions who will be able to transfer the knowledge gained among their communities. In addition, these training champions will complement the work carried out by extension agents, thereby fostering the sustainability of the provision of reliable extension services and access to information on resilient production practices.

132. **Demonstration plots and creation of supply of locally-adapted seeds and seed banks:** Under Activity 1.3.1, the project will establish demonstration plots with a view to experiment with, and produce locally-adapted resilient seeds. In addition, the project will create seed banks whereby seeds will be made available to local communities and farmers. Securing a local supply of resilient seeds inherently supports the sustainability of nearby agricultural activities, by improving access to inputs, but also through the improvement of yields, the reduced impacts of pests and diseases, and ultimately through improved food security and income.

133. **Construction of fish hatcheries and feed processing facilitie**s: Activity 1.3.2 will see the construction of two hatcheries and two fish feed processing facilities. Stakeholder consultations have indicated that insofar aquaculture operators sometimes have an 18-month delay to receive fish fingerlings ordered from existing national hatcheries. Further, the fingerlings have to travel long distances by road to reach aquaculture operators at a high environmental and financial cost. Establishing a district-level supply of fingerlings, fry and feed will directly contribute to the sustainability of existing and future aquaculture operations, including those supported by the Grant Facility.

134. **Rehabilitation of crossing points:** The sustainability of the crossing points under Activity 1.4.1 is embedded in both the technical design and institutional arrangements supported by the CALRF project. These culverts, to be constructed in five priority districts (Kalomo, Kazungula, Monze, Luano and Sesheke), have been selected through participatory consultations with local stakeholders including district authorities, community leaders, extension officers, and farmers, thereby ensuring community buy-in, ownership, and long-term maintenance commitment. The culverts will be constructed using durable materials suited to local hydrological conditions andin accordance with findings of the E&S assessments and feasibility studies that will be prrepared for each site, ensuring environmentally sound operation and community stewardship.

135. **Grant Facility:** *sub-grants sustainability* - Each sub-project to be financed under the grant facility will have to include a maintenance and financial plan with clear allocated resources and responsibilities, to demonstrate how the financed infrastructure or equipment will be sustained over the long-term. Through the provision of technical assistance (including in the development of business plans, financial and administrative literacy), the PCU will ensure that sub-grant applicants meet the necessary sustainability requirements in terms of operational, financial, and maintenance aspects. In light of this, the income that will be generated from the sale of agricultural produce will provide sustained income sources for grantees to implement the maintenance plans during and beyond project end.

136. *Facility sustainability* - Consultations carried out during the project design indicate strong interest of the Ministry of Agriculture and the Ministry of Livestock and Fisheries to take on the operational and financial management of the Grant Facility. Knowledge hubs to be organised under Activity 3.1.2 will gather project stakeholders including line ministries, Financial Service Providers and institutional partners, where the future of the Grant Facility will be discussed. A resource mobilization strategy and associated roadmap will be developed as an output to these workshops. Other avenues for the sustainability of the Grant Facility over the longer-term include financial commitments from the Community Development Fund (CDF) which has seen its endowment significantly increase for the latest Budget 2025.

137. **Climate and weather information systems**: As part of Activity 3.1.1., the project will roll out weather and climate information systems in the form of Automated Voice Systems and radio broadcasts. These information tools

will enhance access to up-to-date, reliable weather forecasts and extreme climate warnings for farmers, thereby supporting enhanced crop planning and management and overall coping strategies**.**

138. **District-level adaptation planning strategies**: The community-level consultations underpinning the development of the 15 district-level planning strategies will directly contribute to the sustainability of these plans once implemented. Further, the collection and integration of information from traditional leaders into these strategies will strongly support community buy-in and endorsement of the measures over the long-term.

139. Finally, to consolidate CALRF's efforts in terms of infrastructure and installations, the current government has embarked on a decentralization process to make resources more accessible to local communities through what is known as the Community Development Fund (CDF). CDF funds projects include sustaining viable development projects in districts through capacity development of community members, additional infrastructure or refurbishing dilapidated ones, among others. Funded projects and initiatives through CDF are decided by community committees that are pooled from different villages and local structures. Therefore, given the socioeconomic viability and importance in terms of empowering local communities in target districts, CALRF's pieces of infrastructure and installation have another viable mechanism of sustainability. It should be mentioned that the local authorities mentioned above are part of the core team that supports the prioritisation and disbursement of CDF resources to development projects in districts and wards based on community expressed needs. This is done through active and participatory engagement with traditional leaders and community members. Therefore, based on the government-established development structures at national, provincial, district and ward levels, and the direction that the government has taken to decentralize community funds, there are guaranteed opportunities for sustainability of CALRF's infrastructure and installations.

K. Overview of the environmental and social impacts and risks

The proposed project activities have been designed in consultation with different stakeholders to ensure that the outcomes are overall positive and contribute to enhancing resilience and building adaptive capacities of the most vulnerable people in 15 districts facing serious challenges of extreme climatic events, poverty and degradation of the resource base. Where activities have not been identified at design stage, such as in the case of Unidentified Sub-Projects under Component 2, further risk assessments will be undertaken at the project implementation stages, which include the Adaptation Fund principles checklist. The Adaptation and Sustainability, Gender and Social Inclusion Specialists, M&E Specialist, Natural Resources Management Specialist will be involved to support the process. At this stage of proposal development, the project indicates that activities during implementation will be screened against the 15 principles of the Adaptation Fund with participation of relevant stakeholders. If applicable, appropriate frameworks and plans such as Environmental and Social Management Plans will be developed as part of the pre-grant technical assistance package.

a. Overall Risk Categorisation

Based on the environmental and social risks screening against the 15 principles of the Adaptation Fund ESP, the project is categorized as a Category B (moderate risks) project and classified as a moderate risk project (SECAP), with some, potential adverse impacts and risks that are reversible or mitigated. The climate risk classification of the CALRF is substantial risk category as per IFAD SECAP because the target areas have experienced climate shocks such as droughts and floods that have resulted in loss of crops and livestock, damage to infrastructure and adversely impacted livelihoods of the CALRF beneficiaries.

USP ESP Screening

Given the nature of the proposed interventions to respond to the adaptation challenges occasioned by extreme weather events in Zambia, CALRF uses USP modality in line with the Adaptation Fund's guidance on USPs as detailed here. Some of the activities related to the establishment of demonstration plots for resilient seed production and the construction of extreme weather culverts under component 1 (which are partial USPs as per the AF's definition, whereby the exact nature of the intervention is known but not the precise location in the target districts), and financing of resilience

measures for the agriculture, fisheries and aquaculture sectors under component 2 (whereby a list of eligible investments is provided but the exact nature and location of each sub-grants will be determined at implementation, resulting in a partial USP categorization) will require additional screening at implementation to ensure compliance with the AF ESP standards. The required layer of screening of some of the details against AF's ESP has not been possible at development stage, and therefore, the project has proposed mechanisms in the ESMF to address the issue of USPs. The project will prioritize supporting farmer groups and cooperatives as these have a better multiplier effect on investments in communities – including transformational impacts in terms of improving the environment as well as building and strengthening resilience at community level. During the vetting process to deal with USPs, one of the criteria the project will evaluate proposals and expressions of interest will based on women and youth representation in the farmer groups and cooperatives.

140. Table 11 below provides an overview of the assessment against AF principles.

Table 12 ESS risk assessment

Checklist of E&S Principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
1. Compliance with the Law		**Low risk:** Overall, through consultations with different stakeholders, including government agents, compliance with national regulations and standards will be ensured and therefore the risk is low. Through monitoring ensure adequate management verification that safeguards are in place and are a mirror of these principles. In practice, adherence to laws is influenced by institutional capacities, resource availability and socio-cultural practices, among other factors. These are acknowledged but can't be determined at the design stage – and therefore, compliance to national regulations and standards will need screening against the 15 AF ESP principles.
2. Access and Equity		**Low risk:** In promoting access to grant finance particularly, the project will operate in a socio-cultural context that keeps women and the youth from lucrative undertakings. The project will be deliberate and ensure equitable representation of both males and females.Gender quotas have been established where relevant and possible. As a result the project will seek an equitable representation of women in capacity development and access of actual socioeconomic activities. Stakeholder consultations undertaken during the proposal design and development stages have been integrated to ensure that national and district-levels are catered to. The project therefore aims generate adaptation benefits for all categories of stakeholders without discrimination. However, improved livelihoods of locals by facilitating improved participation of women in income-generating activities can also have the negative impact of introducing disturbances to the social fabric that otherwise exists in these communities, especially at the household level. Increased conflict between communities competing for benefits from the project activities including potential for local people being physically assaulted or injured.
3. Marginalized and Vulnerable Groups		**Low risk:** As noted above, the project's target group is vulnerable rural populations thereby ensuring social inclusion is a key consideration in the project particularly providing adaptation options and increasing access to rural finance for these groups. The full design has conducted an analysis of the profiles of the communities and the targeted areas. The profiling improved the targeting of the project, ensuring the inclusion the vulnerable – in the context of the project, the vulnerable include the socioeconomically non-empowered community members, and include women, the youth and the differently abled. Despite this level of consideration, in practice and because of power dynamics within communities, there is a possibility for marginalization of vulnerable groups – therefore, this will need to be screened against the 15 AF ESP principles.
4. Human Rights		**Low risk:** For project interventions pertaining to construction that will require additional labour, issues related to treatment of workers by project staff and contractors will be closely monitored during project execution to ensure no labour or human rights violations.

Checklist of E&S Principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
5. Gender Equality and Women's Empowerment		**Low risk:** The Project has in its objectives gender equality and women empowerment, which should be improved through the project activities. The Gender Action Learning System will be applied and specifically the Household Methodology to ensure results are achieved. It should also be noted that an overall 50% of the direct beneficiaries will be female, with specific targets and quotas for applicable activities.
6. Core Labour Rights		**Low risk:** The project will support activities that will require human labour which may pose health and safety risks to workers and inhabitants around the construction sites (notably for the hatchery and fish feed plants).
7. Indigenous Peoples	**No risks:** Technically, there is no group in Zambia that identifies itself as an Indigenous Peoples or Tribal Groups.	
8. Involuntary Resettlement		**Low risk:** : Some of the project activities will involve infrastructure development such as setting up simple and inexpensive irrigation systems. The areas will be limited in size, and since the primary target will be already existing Cooperatives, the land for introducing sustainable agricultural practices will already be under production or at least some of utilization by Cooperative members. The choice of the particular land for project intervention will be participatory and consultative to ensure community members themselves take a lead in proposing the area for project intervention. It should be noted that Zambia is sparsely populated, and communities in rural areas rarely live in agglomerations. This limits the chance of land scarcity within community contexts to trigger undesirable physical or economic involuntary resettlements. Despite this assurance at the stage of development, during implementation, due diligence will be done through the 15 AF ESP principles. Therefore, activities related to use of land are USPs, particularly as related to specific sites to establish climate resilient seed crop varieties and mixed crop and fish systems, supporting simple local level drying equipment, and the development of strategies to incorporate climate change priorities.
9. Protection of Natural Habitats		**Low risk:** Clearing vegetation to make way for various infrastructure in the project areas will change the land use negatively as it suffers erosion and a change to the wildlife composition in the area. The increased human and vehicular traffic during project implementation and operations will introduce noise, and other disturbances which will cause wildlife to change their behaviour as a result of changed land uses and population growth. Concrete activities will be screened, otherwise should, any of the activities lead to destruction of the natural habitats, full scale social and environmental assessment will be undertaken. At this level, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.
10. Conservation of Biological Diversity		**Low risk:** As noted above, through infrastructure development, the project may contribute to disrupting Conservation of Biological Diversity. However, considering the envisaged level of development, disturbance to Conservation of Biological Diversity will likely be minimal or non-existent. Concrete activities will be screened, otherwise, should any of the activities lead to disruption of the Conservation of Biological Diversity, full scale social and environmental assessment will be undertaken. As above, sub-grants related to land use such as investments in agricultural and aquaculture production systems will need to be screened using the 15 AF ESP principles during implementation.
11. Climate Change		**Low Risk:** The project does not have any negative impact on climate change. The project interventions are actually aimed at addressing adverse effects of climate change. Continued stakeholder consultations will ensure that none of the proposed interventions directly or indirectly increase social and environmental vulnerabilities to climate change. They will also ensure that a robust suite of adaptation measures is implemented. Overall, the project activities will promote climate change adaptation and will not result in any increase in greenhouse gas emissions.

Checklist of E&S Principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
12. Pollution Prevention and Resource Efficiency		**Moderate risk:** Waste generated as part of the construction of new facilities may require the development of waste management plans. During infrastructure development, particularly road rehabilitation, there will be minimal noise and dust. Efforts will be done by the service providers to keep noise and dust to the minimum. These aspects will be included in the service provider contracts.
13. Public Health		**Low risk:** Potential risks include unintended public health impacts such as water and air pollution, insufficient awareness and education efforts, and increased vulnerability to health risks if not properly managed.
14. Physical and Cultural Heritage		**Low risk:** Areas for sustainable agricultural production have not yet identified at project development, and therefore, complete risks cannot be confirmed. All activities related to agricultural production landscapes have USPs, and will need to be screened against the 15 AF ESP Principles.
15. Lands and Soil Conservation		**Low risk:** Sustainable land management and improved soil fertility are part of the project results. The infrastructure development activities will not target areas for agricultural and so as not to compromise soil conservation practices. Thus, if any risks, they will be minimal and localized.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for project implementation

2. The project will build on lessons from interventions by IFAD and other development partners to shorten the learning curve and time. As has been detailed in the component description, the implementation of many activities will be supported by extension agents within the Ministry of Agriculture and the Ministry of Livestock and Fisheries. The project team will be strengthened with expertise in climate change adaptation and other specialists, considering the natural resources and adaptation angles of CALRF, such as HODI, RESEI and CBU.

3. IFAD, as the Implementing Entity, will supervise the project directly; providing continuous technical support and guidance to ensure smooth implementation of activities. In its role as Implementing Entity, IFAD will assume the overall responsibility to report on the project progress to Adaptation Fund while ensuring that the fiduciary practices within the project remain compliant with Adaptation Fund policies and guidelines. This will be a two-way communication between IFAD and Adaptation Fund. At higher level, IFAD will ensure continued engagement with stakeholders, including sharing best practices and lessons from the project at regional or international fora.

4. The project will have a PMU anchored within the Ministry of Green Economy and Environment (MGEE), for operational aspects with support from the Ministry of Agriculture, the Ministry of Fisheries and Livestock (MFL), and the Ministry of Small and Medium Enterprises (MSME). The PMU will be responsible for the day-to-day management of the project, providing directions and guidance to project partners and coordinating the project implementation, and officially engaging with partners in the executing of activities on the ground, and preparing and giving inputs to the project progress reports. The project will have its own manuals for execution, monitoring, evaluation and administrative, financial and accounting management. Thus, its roles will be: a) efficient and effective implementation of project activities; b) efficient coordination with project partners; c) efficient coordination with the MFNP, MA, MGEE, MFL, and MSME for support to the project implementation; d) identify bottlenecks and potential impediments to project execution and raise these with the Project Steering Committee to ensure decisions and action are taken e) identify synergies with potential project partners to add value to project and facilitate cooperation as necessary and f) any other activities, as necessary.

5. Thus, the PMU will be established under MGEE as the ministry mandated to implement agricultural related activities. The Ministry of Finance's role will be limited to grant execution and performance. The MGEE as the DA will provide oversight on project implementation.

6. The PMU team will support the implementation of the proposed project. As noted, given the technical aspects of the project regarding adaptation, natural resources management, access to finances for investments in climate-sensitive areas, the need for gender mainstreaming, entrepreneurship and business development, the PMU will be constituted to reflect the expertise in key thematic areas of the project. However, at this stage, it can be confirmed the PMU will be headed by a National Project Coordinator who will be supported by an M&E Specialist and Financial Controller. Gender is an important cross-cutting theme through all the three components. Therefore, to ensure gender mainstreaming, a Gender Specialist will be employed as full-time staff within the PMU to ensure gender mainstreaming throughout the project activities.

7. *Project Steering Committee (PSC):* The project will have a PSC to provide implementation oversight, policy direction and coordination between key government institutions. The PSC shall be headed by the Permanent Secretary from the Ministry of Green Economy and Environment, and to ensure representation, members of the PSC will be drawn from key stakeholders, including with representatives the Ministry of Agriculture, Ministry of Fisheries and Livestock, Ministry of Finance and National Planning, , Ministry of Small Medium Enterprises, Academia and development partners. Others will include the Zambia Environmental Management Agency, Zambia Alliance of Women, Zambian Women in Agriculture), Youth Development Organization Zambia Agency for Persons with Disabilities, The PSC will review and approve the annual work plan and budget, manual of procedures, schedules, and progress and audit reports of the project. The PSC will have quarterly progress review meetings with a technical orientation planning workshop organized prior to the first session of the Steering Committee.

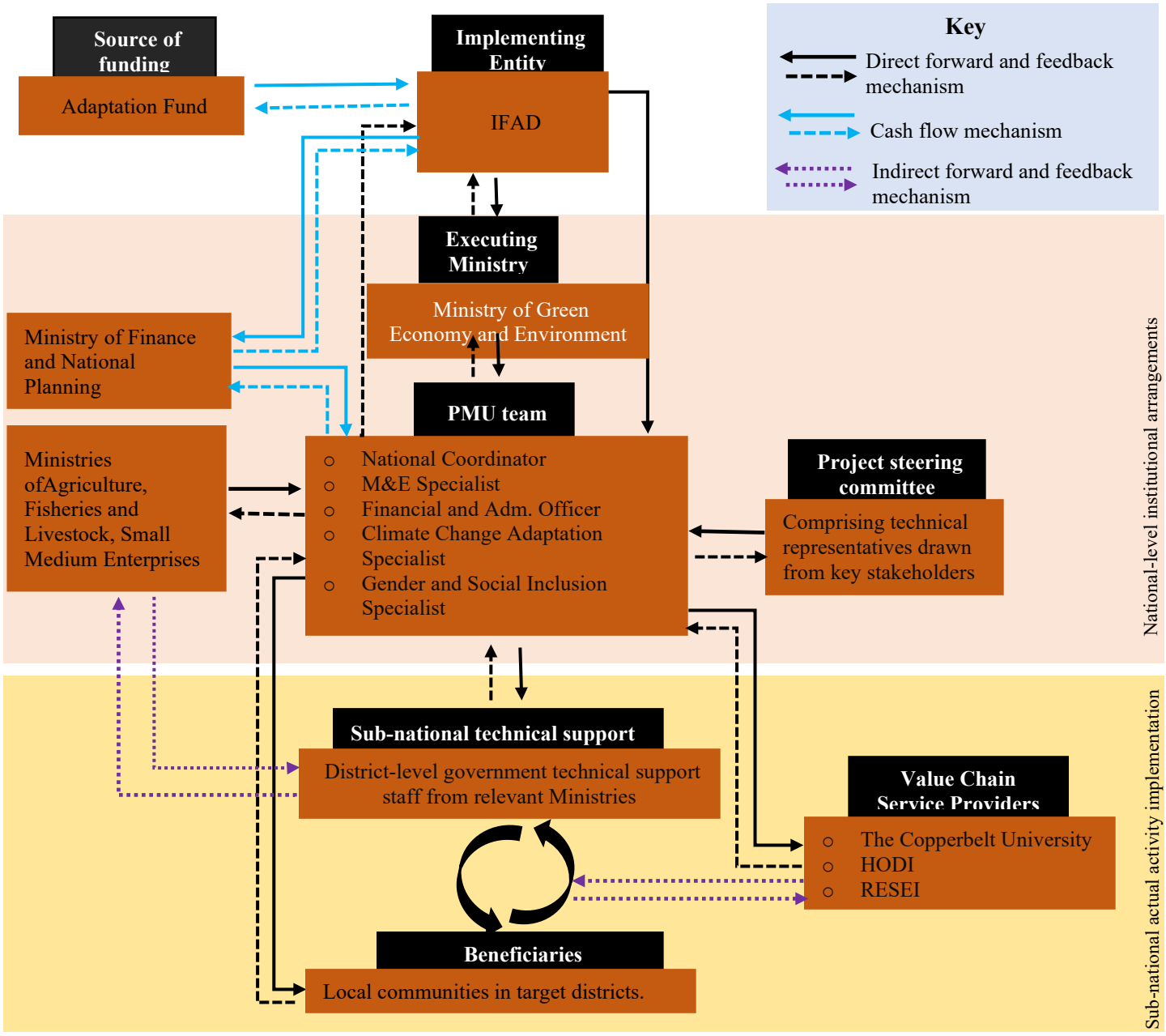


Figure 10 Implementation arrangements

Figure 10 shows the implementation structure of CALRF

8. Based on the project implementation arrangement described above, the table below summarises the description of the roles of key executing entities that have been part of the consultations that have informed the development of the project, but also who will be involved in the implementation of project activities.

Table 13 Description of roles and key Executing entities

Entity	Role	Priority component
Ministry of Green Economy and Environment (MGEE)	Through extension services, the Ministries will be anchors of the implementation of the project to ensure that the activities remain compliant and consistent with government environment and natural resources policy priorities. MGEE will be the chair of PSC and will chair the TAG.	All the three components

Entity	Role	Priority component
Ministry of Agriculture and Ministry of Fisheries and Livestock	No direct execution role in project activities, however closely offer technical and policy directions so that the implementation of the activities . so that the implementation of the activities remain compliant and consistent with government agriculture and fisheries/aquaculture policy and development priorities in the country –as engines of rural development in Zambia. MoA and MoFL will be represented on the PSC and the TAG.	All the components
Ministry of Finance and National Planning (MFNP)	No direct execution role in project activities, however will anchor the project and will closely offer technical and policy directions with regards to government fiduciary obligations to development partners but also tracking climate finance, particularly funding adaptation activities in the country to key priority areas as identified in Zambia's updated NDC and the on-going NAP process. MoFNP will chair the PSC and will be represented on the TAG.	All the components
The Copperbelt University	The university will lead the development of the fisheries aspects of the project to diversify livelihoods but also to strengthen community capacity to adapt to the impacts of climate change and human overexploitation of the resource in the target district. The University's principal role will be to develop fish value chains in the priority districts from cradle to the grave - including understanding the impacts of climate change and human pressure on fresh water fish resources in the target districts – which has not been done to inform more adaptive responses to the loss of fresh water fish resources among fishing communities. CBU will be represented on TAG.	Component 1 and Component 2
HODI and ReSEI	HODI and RESEI will support communities in horticultural activities to develop important value chains fruit tree value chains, including capacity development, technology transfer and linking community fruit enterprises to initiatives such as Forest Africa Zambia[55] that are producing fruit juices. HODI and ReSEI will be represented on TAG.	Component 1 and Component 2
District-level Local Councils	The Local Councils will support supervision of project activities, and will be particularly crucial in the sustainability of project-supported pieces of infrastructure and installation by providing capacity development and maintenance of infrastructure – relying on the Local Councils' responsibility for a range of infrastructure and services, including policing; water and sanitation; fire services; and agricultural support services. Therefore, their role will be during implementation and after the project closure, recognizing that CALRF's supported infrastructure and installations are government property though rural development and enhancing community capacity to adapt to the impacts of climate change.	All the components
Private Financial Services Providers selected using a competitive process	These institutions will be important as sources of technical assistance in financial literacy, accounting and business management to be provided to grantees as part of the pre-grant technical assistance package.	Component 2
Zambia Agricultural Research Institute (ZARI) and Seed companies	The role of these entities will be in the production and making available to beneficiaries climate resilient seeds for different crops based on climatic eco-regions in Zambia to facilitate community access to the seeds, prioritizing maize and cassava because of their role in national food security but also local and national economy.	Component 1
Ministry of Small and Medium Enterprises	No direct execution role in project activities, however will closely offer technical and policy directions so that the implementation of the activities remain compliant and consistent with government MSME policy and development priorities in the country – micro, small and medium enterprises	Component 1 and 2

[55] Forest Africa Zambia is an agro-processing company that produces juices from wild fruits and looking at expanding their production, including product diversification. The link to Forest Africa Zambia and other players in the market will break some important barriers that rural communities face in adding value to wild fruits which usually simply rot. HODI and RESEI are the key that communities need to open doors to various socioeconomic opportunities from fruit tree production.

Entity	Role	Priority component
	being an engine of rural development in Zambia. MSME will be represented on the PSC and the TAG.	
Zambia Alliance of Women (ZAW) and Zambian Women in Agriculture (ZWA),	No direct execution role in project activities, however will closely offer technical and policy directions so that the implementation of the activities remain compliant and consistent with women development initiatives. ZAW and ZWA will be represented on TAG	All components
Youth Development Organization	No direct execution role in project activities, however will closely offer technical and policy directions so that the implementation of the activities remain compliant and consistent with youth development initiatives. They will be represented on the TAG.	All components
Zambia Agency for Persons with Disabilities (ZAPWD) and The Zambia Federation of Disability Organisations (ZFDO)	No direct execution role in project activities, however will closely offer technical and policy directions so that the implementation of the activities remain compliant and consistent with persons with disabilities development initiatives. ZAPWD and ZFDO will be represented on TAG	All components
The Ministry of Health	The project has activities on the production of value chains which will need to be done in compliance with the health regulations and standards that fall under the ministry's charge.	Components 1 and 2
Ministry of Water or Ministry of Transport	As detailed in the Urban and Regional Planning Regulations 2023 the project activities in output 1.4 will be in compliance by submitting the required information as detailed in the said regulations to the Ministry of Water or Transport for the widening or deepening of culverts for Ministerial approval.	Output 1.4

B. Risk Management

Describe measures for financial and project risk management.

9. The PMU will ensure adherence to financial reporting standards, in compliance with IFAD's reporting obligations to the Adaptation Fund. The table below details financial and project risks management.

Table 14 Risk assessment

Identified Risks	Risk Level	Risk Management Measures
Staff turnover within the government delay project implementation	Medium	Relevant government institutions and departments have been involved in the design of this project. Engagements will continue so that the government remains committed to the project's implementation. This will be monitored through project progress reports.
Insufficient capacities of PCU to effectively manage the day-to-day implementation of the project	Medium	The proposed project will benefit from the proven experience of RUFEP, and a needs-assessment will be conducted to identify capacities that need additional training to ensure appropriate management and day-to-day implementation. Additionally, the project will conduct a competitive recruitment process so that the right experts with specific experiences in development project management and financial management procedures, including with appropriate experience in required accounting softwares are recruited. This will be monitored through project progress reports and technical visits to the project sites.
Loss of government support may result in lack of prioritisation of AF project activities	Low	As noted above, the design of this proposed project has benefited from government support, and IFAD remains a trusted partner in Zambia – given the portfolio of IFAD projects focused on rural development of smallholder farmers. Consultations and identification of mechanisms to ensure smooth implementation of the project will continue at all relevant administrative tiers. Recently, GRZ has

		formally expressed interest in the continuation of RUFEP. This will be monitored through project progress reports and technical visits to the project sites.
Communities fail to support project activities and they are not informed	Medium	The project has already engaged some community members, and will continue with awareness campaigns and hold stakeholder meetings to explain the project to the communities. Local leadership will be involved in these meetings to secure a strong buy-in. This will be monitored through project progress reports and technical visits to the project sites.
Competing interests between different stakeholders regarding accessing and use of natural resources	Low	The project will continue being consultative in its approach of engaging stakeholders, and will seek to establish a multi-stakeholder dialogue platform to nurture cooperation and shared interests in the project. This will be monitored through project progress reports and technical visits to the project sites.
Low technology adoption rate by communities	Low	Promotion and demonstration of new technologies and practices, focusing on those that communities can easily adopt, practices that build on what they already have. The roll-out of digital finance technology by RUFEP proves that communities are willing and ready to adapt and can do so quite quickly. This will be monitored through reports and technical visits to the project sites.
Project implementation and financial management procedures do not guarantee sufficient transparency and accountability	Medium	The project will ensure teamwork and clear segregation of duties in the management of financial system so that the entire process is not managed by one single person. In fact, requests for financial resources will have to be approved by the steering committee, and disbursed according to budgeted work plans. Additionally, there will be regular financial audits. This will be monitored through reports.
Occurrence of extreme weather events (floods and droughts)	High	Zambia has been extreme weather events which have intensified and have become an annual phenomenon. In some parts, there are floods (notably southern region), and in others, droughts (other parts of the country). The project is designed to essentially to address these challenges, and will, among others, empower communities with access to financial resources to enable them to invest better in climate-resilient undertaking. The project will also support communities to access climate-resilient seed varieties, developed based on different climatic conditions across the three eco-regions in Zambia. Investments in early warning is another mitigation measure that the project will take, including providing food to 4,000 households. This will be monitored through reports and technical visits to the project sites.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

10. The Zambian government has been working on effecting the decentralization policy which calls for more active role of subnational levels and community participation in the planning, implementation and monitoring of development projects. This is consistent with IFAD's *modus operandi* in all funded and implemented projects and programs which are designed, implemented and monitored in a participatory fashion in compliance with its policies, standards and safeguards. Moreover, IFAD's Strategic Framework calls for ensuring that projects and programmes promote the sustainable use of natural resources, build resilience to climate change and are based upon ownership by rural women and men themselves in order to achieve sustainability. The project has been subjected to environmental and social risk screening using the AF-specific 15 Environmental and Social Principle (ESP) screening and IFAD's the Social, Environmental and Climate Assessment Procedures (SECAP). This is presented in Annex 2. Based on both screening methods, the project has been categorized as a category B.

11. The project has been identified to contain Unidentified Sub-Projects (USPs) that will require specific ESP screening during implementation. This is explained in more detail in the ESMP in Annex 2. Based on the available

information, the proposal has conducted detailed ESP risk assessment in alignment with AF requirements that are summarised in section II – K and explained in detail in the ESMP in Annex 2. Based on this assessment and subject to appraisal of the USPs, the project will pose no social risks and only minor environmental risks that can easily be mitigated. This is why the project has been classified as a category B project. Although expected to be very unlikely, the risks could not be immediately identified for the protection of natural habitats, the conservation of critical biodiversity, and physical and cultural heritage because precise location of activities will be determined in a participatory manner with beneficiaries. The ESMP therefore contains screening, review and reporting processes to avoid, appraise, track and mitigate risks/impacts in these areas.

Mainstreaming of AF ESP and GP into grant design, approval process

12. *Design:* The Adaptation Fund has specific Environmental, Social and Gender Policies that will need to be mainstreamed into the grant design, approval and implementation process to meet the standards. The project design has considered capacity constraints in the target districts and has therefore mainstreamed capacity building and training in the project activities. These will be conducted by subject matter experts through and with the Project Management Unit. Beneficiaries will be made aware of the 15 ESPs and specifically about ESP 9 and 14 on the protection of natural habitats and cultural heritage and any measures that may be needed to be taken to ensure that no adverse impacts result from the project being in or near a protected area or cultural heritage area. Any risk to the ESP 9 will however be mitigated by the restricting of plants and trees to specific indigenous plants.

13. Additionally, consistent with AF Gender Policy, the consultation and inclusion of women has been deliberate – including organizing separate discussions to accommodate women's roles in households. The process of community and women will continue during implementation and monitoring to ensure equitability in all the project phases. The approach will be culturally-responsive to make sure women participate fully in all phases of the project.

14. *Approval:* The financial grants for investments in climate-sensitive sectors will need to submit business plans that comply with the Environmental and Social Principles (ESP) and have received the required permits from the Zambia Environmental Agency, the Forestry Department or the Food Safety Coordinating Committee, as the case may be and as applicable. AF-funding is focused specifically on increasing the climate resilience of rural populations, designed to have minimal adverse impacts and actually have broad environmental and social benefits. The project activities will have the AF ESP principle screening applied to them by the Project Vetting Committee. The screening will be done through a checklist review of the applications to, inter alia, ensure that for example the list of plants proposed comply with the permitted indigenous plants and species (to ensure invasive species are not introduced in the habitats), that the maps provided are not in or near protected natural areas and areas of cultural heritage. In the event that this may be the case, then the plans will need to provide detailed information to explain why this cannot be avoided, the extent of the expected impact and what mitigation measures are being taken to minimise any adverse impact. This will be reported and monitored through the ESMP. Any grants that do not comply with the ESP checklist will not be approved and applicants informed of adjustments that need to be made.

15. The grant applications will need to ensure compliance with the technical specifications as detailed in section II-E of the proposal and the types of activities in the table below.

Table 15 Grant screening criteria

#	Evaluation Criteria	Evaluation	
1	Consistency of Grant Recipient with the target group and are either agricultural production systems or horticultural and fish value chains as per activities below	yes	no
2	Consistency of investment proposal with the 15 Environmental and Social Principles of the AF	yes	no
3	Application identifies relevant applicable law / technical regulation and district procedures for compliance.	yes	no

4	If applicable grant application includes relevant permit or declaration of conformity	yes	no
5	Applied grant funds are within acceptable amount	yes	no
6	All required documents are attached to application	yes	no
7	Investment project implementation schedule does not exceed the established time limits	yes	no
8	Availability of environmental review document (if necessary in compliance with the Zambia Environmental Management Agency's regulations)	yes	no
9	No tax liability for more than three months overdue by the applying cooperative	yes	no
10	Lack of debt for servicing by commercial banks	yes	no
11	Grant Recipient has not previously received funds from other government programs, particularly the Constituency Development Fund	yes	no
12	Proposed expenses for investment project comply with the established expenses type	yes	no
13	Proposed expenses are not transferable to other cooperatives nor in other districts which have been approved.	yes	no
14	User rights to land for agricultural investments are clear, and there are no potential claims of exclusion or involuntary displacement.	yes	no

EXCLUSION LIST

Table 15 below provides criteria based on which sub-projects and activities which will not be eligible for financing under CALRF :

Table 16 Sub-project and Activity Exclusion List.

Negative sub project list
The proposed CALRF programme will automatically exclude sub-projects that:
Require physical displacement of people. Temporary economic activities disruptions can be allowed for and treated in line with the SECAP requirements.
Permanently block the access to or use of land, water points and other livelihood resources used by others
Encroach onto fragile ecosystems, marginal lands or important natural habitats of national or international importance (e.g. ecologically-sensitive ecosystems; protected areas; natural habitat areas, forests and forest reserves, wetlands, national parks or game reserve; any other environmentally sensitive areas)
Impact on physical cultural resources of national or international importance and conservation value
Sub-projects that would involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities

16. The ESMP for the proposed CALRF (see Annex 2), provides guidelines for the management of potential environmental and social aspects at the project sites. The ESMP also identifies parties responsible for monitoring actions, and any training or capacity building needs. Mitigation measures have been identified to reduce present and potential impacts associated with both the existing and new agricultural activities on the proposed project. In addition, mitigation measures are identified as either social or physical measures. Social mitigation includes the measures used to mitigate effects such as noise, land use, and other effects to the human environment. Physical mitigation includes measures that address impacts to the physical environment, such as biological communities, vegetation, air quality, and others.

Checklist of E&S Principles	Potential risks and impacts	Proposed compliance measures
1. Compliance with the Law	**Low risk:** Overall, through consultations with different stakeholders, including government agents, compliance with national regulations and standards will be ensured and therefore the risk is low. Through monitoring ensure adequate management verification that safeguards are in place and are a mirror of these principles. In practice, adherence to laws is influenced by institutional capacities, resource availability and socio-cultural practices, among other factors. These are acknowledged but can't be determined at the design stage – and therefore, compliance to national regulations and standards will need screening against the 15 AF ESP principles.	**Compliance measures:** The project will identify the relevant Laws concerned by contracts with service providers, and include provisions to ensure these Laws are complied with. The project will seek an equitable representation of women in capacity development and access of actual socioeconomic activities. Having mentioned that, it is recalled that the project will primarily target cooperatives and smallholders as potential grantees. It has established selection criteria (see Table of Grant screening Criteria). Though these have been established at development, actual grantees will only be identified at implementation, therefore consisting USPs, calling for a screening assessment against the 15 AF ESP principles.
2. Access and Equity	**Low risk:** In promoting access to grant finance particularly, the project will operate in a socio-cultural context that keeps women and the youth from lucrative undertakings. The project will be deliberate and ensure equitable representation of both males and females.Gender quotas have been established where relevant and possible. As a result the project will seek an equitable representation of women in capacity development and access of actual socioeconomic activities. Stakeholder consultations undertaken during the proposal design and development stages have been integrated to ensure that national and district-levels are catered to. The project therefore aims generate adaptation benefits for all categories of stakeholders without discrimination. However, improved livelihoods of locals by facilitating improved participation of women in income-generating activities can also have the negative impact of introducing disturbances to the social fabric that otherwise exists in these communities, especially at the household level. Increased conflict between communities competing for benefits from the project activities including potential for local people being physically assaulted or injured.	**Compliance measures:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures. Responsibility for the development of these tools will lie with the Gender and Social Inclusion Specialist.
3. Marginalized and Vulnerable Groups	**Low risk:** As noted above, the project's target group is vulnerable rural populations thereby ensuring social inclusion is a key consideration in the project particularly providing adaptation options and increasing access to rural finance for these groups. The full design has conducted an analysis of the profiles of the communities and the targeted areas. The profiling improved the targeting of the project, ensuring the inclusion the vulnerable – in the context of the project, the vulnerable include the socioeconomically non-empowered community members, and include	**Compliance measure:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures, notably with regards to household vulnerability to ensure the threshold inclusion of 50% women and 30% youth is achieved. The mechanisms will include: social inclusion trainings, broad information campaigns and outreach events targeting women and youth, and transparency on the public call processes. The project will also include specific measures to support gender equality and women's

Checklist of E&S Principles	Potential risks and impacts	Proposed compliance measures
	women, the youth and the differently abled. Despite this level of consideration, in practice and because of power dynamics within communities, there is a possibility for marginalization of vulnerable groups – therefore, this will need to be screened against the 15 AF ESP principles.	empowerment, targeting: (i) economic empowerment, (ii) access to financial services and information, and (iii) training programs on market linkages and financial literacy, among others. The Gender and Social Inclusion Specialist will have the charge to develop the tools.
4. Human Rights	**Low risk:** For project interventions pertaining to construction that will require additional labour, issues related to treatment of workers by project staff and contractors will be closely monitored during project execution to ensure no labour or human rights violations.	**Compliance measures:** The project will contribute to sustained economic and social inclusion by targeting the rural vulnerable poor communities in 15 districts. The project, and in consultation and engagement with different stakeholders is cognizant of Zambia's policies and law to promote human rights, including the labour laws. The project will ensure adherence, particularly paying attention to child labour in all the project-funded activities.
5. Gender Equality and Women's Empowerment	**Low risk:** The Project has in its objectives gender equality and women empowerment, which should be improved through the project activities. The Gender Action Learning System will be applied and specifically the Household Methodology to ensure results are achieved. It should also be noted that an overall 50% of the direct beneficiaries will be female, with specific targets and quotas for applicable activities.	**Compliance measures:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures to ensure to ensure the threshold inclusion of 50% women inclusion and their empowerment. Responsibility for the development of these tools will lie with the Gender and Social Inclusion Specialist.
6. Core Labour Rights	**Low risk:** The project will support activities that will require human labour which may pose health and safety risks to workers and inhabitants around the construction sites (notably for the hatchery and fish feed plants).	**Compliance measure:** Through the application of the IFAD SECAP, screening will be conducted on investments to ensure labour rights are respected. Additionally, as has been noted above, no child labour will be tolerated in adherence to the Zambian laws and international best practices.
7. Indigenous Peoples	**No risks:** Technically, there is no group in Zambia that identifies itself as an Indigenous Peoples or Tribal Groups.	No further assessment require for compliance.
8. Involuntary Resettlement	**Low risk:** : Some of the project activities will involve infrastructure development such as setting up simple and inexpensive irrigation systems. The areas will be limited in size, and since the primary target will be already existing Cooperatives, the land for introducing sustainable agricultural practices will already be under production or at least some of utilization by Cooperative members. The choice of the particular land for project intervention will be participatory and consultative to ensure community members themselves take a lead in proposing the area for project intervention. It should be noted that Zambia is sparsely populated, and communities in rural areas rarely live in agglomerations. This limits the chance of land scarcity within community contexts to trigger undesirable physical or economic involuntary resettlements.	**Compliance measure:** The project will assess and establish that the process to select activities do not lead to physical and economic displacement and involuntary resettlements. The project will conduct thorough consultations to ensure unanimous agreements with communities on areas to establish project activities that can potentially lead to involuntary resettlement in the short or long term so that involuntary resettlement are avoided altogether.

Checklist of E&S Principles	Potential risks and impacts	Proposed compliance measures
	Despite this assurance at the stage of development, during implementation, due diligence will be done through the 15 AF ESP principles. Therefore, activities related to use of land are USPs, particularly as related to specific sites to establish climate resilient seed crop varieties and mixed crop and fish systems, supporting simple local level drying equipment, and the development of strategies to incorporate climate change priorities.	
9. Protection of Natural Habitats	**Low risk:** Clearing vegetation to make way for various infrastructure in the project areas will change the land use negatively as it suffers erosion and a change to the wildlife composition in the area. The increased human and vehicular traffic during project implementation and operations will introduce noise, and other disturbances which will cause wildlife to change their behaviour as a result of changed land uses and population growth. Concrete activities will be screened, otherwise should, any of the activities lead to destruction of the natural habitats, full scale social and environmental assessment will be undertaken. At this level, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.	**Compliance measure:** As noted above under 'Involuntary Resettlement,' through infrastructure development, the project may contribute to disturbance of natural habitats. However, considering the envisaged level of development, disturbance to natural habitats will likely be minimal or non-existent. Concrete activities will be screened, otherwise should, any of the activities lead to destruction of the natural habitats, full scale social and environmental assessment will be undertaken. At this level, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.
10. Conservation of Biological Diversity	**Low risk:** As noted above, through infrastructure development, the project may contribute to disrupting Conservation of Biological Diversity. However, considering the envisaged level of development, disturbance to Conservation of Biological Diversity will likely be minimal or non-existent. Concrete activities will be screened, otherwise, should any of the activities lead to disruption of the Conservation of Biological Diversity, full scale social and environmental assessment will be undertaken. As above, sub-grants related to land use such as investments in agricultural and aquaculture production systems will need to be screened using the 15 AF ESP principles during implementation.	**Compliance measure:** As noted above under 'Involuntary Resettlement,' through infrastructure development, the project may contribute to disrupting Conservation of Biological Diversity. However, considering the envisaged level of development, disturbance to Conservation of Biological Diversity will likely be minimal or non-existent. Concrete activities will be screened, otherwise, should any of the activities lead to disruption of the Conservation of Biological Diversity, full scale social and environmental assessment will be undertaken. As above, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.
11. Climate Change	**Low Risk:** The project does not have any negative impact on climate change. The project interventions are actually aimed at addressing adverse effects of climate change. Continued stakeholder consultations will ensure that none of the proposed interventions directly or indirectly increase social and environmental vulnerabilities to climate change. They will also ensure that a robust suite of adaptation measures is implemented. Overall, the project activities	No further assessment required for compliance.

Checklist of E&S Principles	Potential risks and impacts	Proposed compliance measures
	will promote climate change adaptation and will not result in any increase in greenhouse gas emissions.	
12. Pollution Prevention and Resource Efficiency	**Moderate risk:** Waste generated as part of the construction of new facilities may require the development of waste management plans. During infrastructure development, particularly road rehabilitation, there will be minimal noise and dust. Efforts will be done by the service providers to keep noise and dust to the minimum. These aspects will be included in the service provider contracts.	**Compliance measures:** Water conditions may be affected through establishing small, community-owned processing units for drying, juicing, and preserving local fruits under component 1 - however, the project will manage this through compliance to environmental regulation as discharged by the Zambia Environmental Management Agency (ZEMA).
13. Public Health	**Low risk:** Potential risks include unintended public health impacts such as water and air pollution, insufficient awareness and education efforts, and increased vulnerability to health risks if not properly managed.	**Compliance measure:** Attention will be given to activities related to water harvesting and storage and communities will be sensitised on how to use and store the water in a safe and efficient way. The project will install effective drainage systems and use permeable materials to manage runoff and safeguard water quality. The project will apply water, dust suppressants, or alternative materials to control dust pollution. The project will ensure health and safety standards are in place and adhered to, including mandating service providers in infrastructure development to submit job and health analysis. Monitoring will be done, and full scale environmental and social assessment done should any activity trigger high risk impact on public health.
14. Physical and Cultural Heritage	**Low risk:** Areas for sustainable agricultural production have not yet identified at project development, and therefore, complete risks cannot be confirmed. All activities related to agricultural production landscapes have USPs, and will need to be screened against the 15 AF ESP Principles.	**Compliance measure:** The project will identify: i. The presence in or near the project area of areas of physical and cultural heritage ii. The potential of the project to impact directly, indirectly, or cumulatively upon areas of physical and cultural heritage.
15. Lands and Soil Conservation	**Low risk:** Sustainable land management and improved soil fertility are part of the project results. The infrastructure development activities will not target areas for agricultural and so as not to compromise soil conservation practices. Thus, if any risks, they will be minimal and localized.	**Compliance measure:** The project will assess and identify potential impacts of land rehabilitation activities on the fertility status of soil and the ecosystem health of land. Tree species and land management practices that destroy the productive function of lands and soils will be avoided and 'blacklisted' against adoption. The project intends to use agroforestry multipurpose tree species as well as supporting ANR of species that are endemic to the target districts. The infrastructure development activities will not target areas for agricultural and so as not to compromise soil conservation practices. Additionally, the infrastructure such as water harvesting (cisterns) are localized and not expected to disrupt lands and soil conservation. Thus, if any risks, they will be minimal and localized.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund

17. The annual planning cycle of CALRF project will follow the GRZ planning and budgeting cycle. The cycle will commence with the Annual Work Plan and Budget (AWPB) preparation as a key instrument for implementation and operational control. The Project will follow a bottom-up participatory planning process for the AWPB. The first stage of planning and preparation of the AWPB will be carried out at the camp level, following the decentralized administration framework. The camp level plans will then be consolidated at the district level, then at the provincial level and, eventually, at the national level, into the Project AWPB. The approved AWPB will be the only mechanism through which Project resources would be spent and the basis for progress monitoring. Preparation of the AWPB will be led by the Project Management Unit (PMU).

18. The CALRF results framework will be the foundation of the Project's monitoring and evaluation (M&E) system and contains a set of defined Project specific indicators, the Adaptation Fund indicators and IFAD Core Outcome Indicators (COI), to guide continuous performance assessment of the Project. The CALRF M&E system will be participatory, gender responsive and results-oriented while enabling the integration of physical and financial progress reporting. In addition, the system will enable the analysis of climate change vulnerability and resilience among the beneficiaries using the combined resilience scorecard. The system will incorporate an in-depth baseline, COI surveys and completion surveys, a mid-term review and other thematic studies as relevant. The indicators in the results framework have been selected to allow tracking of resilience, adaptation, social and economic performance of target groups, especially women, youth and vulnerable groups. The system will conform to IFAD's Operational Results Management System (ORMS), updated SECAP guidelines and COI Guidelines and AF guidelines as well as GRZ existing M&E arrangements.

19. The overall responsibility for project monitoring, evaluation and reporting will rest with IFAD in liaison with the CALRF PMU. The Project will have a detailed M&E Plan developed at the start of implementation. The objectives of this M&E Plan will be to inform decision-making by project management during implementation to ensure achievement of the set goal and development objective. It would also enable accurate and timely reporting to all stakeholders. The M&E strategy will be to establish an iterative process for identifying issues and problems to ensure that the Project focus is maintained and expected results are achieved. This will rely on data from periodic monitoring but, more importantly, on specific outcome/impacts measurement exercise/surveys which will be carried out by the Project.

20. A baseline survey will be carried out at the start of implementation and subsequent rigorous evaluations that seek to establish Project impacts and provide lessons learned for enhanced Project impacts will be conducted after. The project's evaluation strategy will use quantitative and qualitative methods to determine how it contributed to climate resilient livelihoods among beneficiaries, at mid-term and end line. A final evaluation will consolidate data and provide recommendations for future efforts.

21. Monitoring of environment and climate aspects of the Project and implementation of appropriate mitigation measures will be done in two ways: a) monitoring physical progress against targets of proposed climate change adaptation/mitigation measures, environmental sustainability, and sustainable natural resource management interventions and b) monitoring and ensuring the implementation of mitigation measures against identified environment, social and climate risks associated with Project interventions. This will be done through implementation and regular monitoring of the ESMP and the accompanying Monitoring Plan.

22. The CALRF M&E processes, outcomes, outputs and activities are aligned with the AF Strategic Results Framework and with AF rules and regulations as well as the IFAD ORMS and COI framework. Thus, the following will be the key project M&E and reporting activities:

23. Inception planning: The project will begin with an inception phase during which preliminary activities of establishing systems for project implementation will be undertaken. Inception activities will include developing and signing agreements with the relevant stakeholders and partners, recruitment and induction of staff and procurement of project equipment and materials. The inception period will also involve (i) planning and stakeholder engagement for setting up the relevant coordination mechanisms/structures such as the Project Steering Committee (PSC) and the

PMU; (ii) setting up of project accounts; (iii) holding an inception workshop to launch the project to stakeholders, following which an inception report will be prepared and submitted within two months (iv) development of the AWPB; (v) refining implementation and targeting approaches; (vi) developing systems/tools including for M&E, community engagement including clarifying roles of the stakeholders.

24. All planning, monitoring and reporting templates shall be validated at inception stage and AWPBs will be endorsed by the PSC.

25. Baselines studies: The project will undertake a baseline survey at the start of implementation and subsequent rigorous evaluations that seek to establish Project impacts and provide lessons learned for enhanced Project impacts. The project's evaluation strategy will use quantitative and qualitative methods to determine how it contributed to climate resilience, improved livelihoods and food and nutrition security among beneficiaries, at mid-term and end line. A final evaluation will consolidate data and provide recommendations for future efforts.

26. Quarterly and annual reviews and progress reports: Regular monitoring during project execution will be reported through quarterly progress reports and annual progress reports. Project Field Officers shall facilitate preparation of monthly progress reports for submission to the PMU. The PMU shall use the monthly progress reports to facilitate preparation of quarterly progress reports and annual progress reports to be submitted to IFAD and the AF. Project Progress Reports (PPRs) will be submitted annually to the AF based on the date is decided of the inception workshop. The Annual reports will outline financial, procurement and activity implementation progress against the targets in the results framework as well as compliance with the requirements of the environmental and social assessment and management frameworks. The annual reports will be presented and discussed by the PSC and during supervision missions by IFAD. The reports will also be useful in providing recommendations to inform the subsequent AWPB. The annual reports and work plans will be reviewed and approved by PSC before being submitted to IFAD no later than one month after the end of the project year. IFAD will then consolidate and submit the Annual Progress Reports in the standard AF PPR template to the AF Secretariat no later than two months after the end of the project implementation year. The PMCU will ensure that the reports are supplemented by annual project work plans for the next Project year, also to be approved by the PSC. The annual plan for the forthcoming year will include details on specific project activities, roles and responsibilities, and a detailed budget with a disbursement schedule and procurement plan for major items included as annexes. The detailed AWPB will be used as the basis for the release of funds from IFAD to the executing agency for the first quarter of the following project year.

27. At the end of the project, a Project Completion Report shall be prepared within six months after Project completion and submitted by IFAD to the AF secretariat. An external midterm review will be carried out half way through project implementation and will provide an overview of the state of project implementation, effectiveness of implementation arrangements and recommendations for project modifications if any. An independent final evaluation will be completed within nine months after project termination. Finally, a financial audit will be provided by IFAD to the AF Secretariat six months after the end of the fiscal year in which the project ended.

The table below presents the budgeted M&E

Table 17 Budgeted M&E

M&E Activity	Responsibility	Timeframe	AF budget
Inception workshop and report	IFAD, PMU	Start of project	15,000
Project meetings including PSC	PMU	Annually	18,000
Measurement of Means of verification and Project Purpose Indicators	PMU	Start, mid and end of project	9,000
Direct Project Monitoring and Quality Assurance including progress and financial reporting, project revisions, technical assistance and risk management (including those related to environmental and social	PMU, IFAD	Semi-annually	10,000

risks)			
Semi-Annual Progress Report	PMU	Semi-annually	10,000
Supervision missions	IFAD	Annually	Covered by IE fee
Mid-Term Evaluation	PMU	Mid-point	35,000
Annual Work Plans and Budget	PMU, IFAD	Annually	11,209
Site visits	PMU, IFAD	Annually	8,000
Terminal Evaluation	IFAD, External consultants	End of project	50,000
		Total	**166,209**

E. Project's results framework

Project Objective(s)1	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Overall objective: To build and enhance resilience and adaptive capacities of 8,680[56] vulnerable households in five provinces to cope with extreme weather events through promoting diversified, resilient and sustainable community livelihood options and facilitating access to rural finance for investments in selected value chains					
Building and enhancing adaptive capacities of vulnerable smallholder farmers through resilient livelihood options and access to finance for investment in three target sectors in five provinces in Zambia	AF Core indicator: Number of beneficiaries (direct and indirect)	0	43,400 direct beneficiaries (21,700 of whom women and 13,020 youth), ~217,000 as indirect beneficiaries (108,500 women and 65,100 youth)	Project M & E reports Field technical visits Progress reports Mid-term and final project evaluations	Community engagement is sustained throughout the life of the project Government continues to demonstrate the same level of political will towards the project COVID-19 pandemic does not escalate to cause the halting of project field activities National peace and stability continue Extreme weather events such as floods and droughts do not disrupt project activities, including causing migration of beneficiaries. Assuming 50% women and 30% youth
Project Outcome	**Project Outcome Indicator(s)**	**Fund Output**	**Target**	**Means of Verification**	**Risks and Assumptions**
Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options					
Outcome 1. Fostered national and local level technical capacity to support the uptake of resilience measures	Number of people with access to reliable, evidence-based extension services	0	43,400 direct beneficiaries (21,700 of whom women and 13,020 youth) ~217,000 as indirect beneficiaries (108,500 women and 65,100 youth)	Project M & E reports Field technical visits Progress reports Mid-term evaluation; and Final project evaluations	Community engagement is sustained throughout the life of the project Government continues to demonstrate the same level of political will towards the project COVID-19 pandemic does not escalate to cause the halting of project field activities National peace and stability continue Extreme weather events such as floods and droughts do not disrupt project activities, including causing migration of beneficiaries.
Output 1.1. National and district-level extension agencies are capacitated to support uptake of resilience measures	Number of extension agents with increased technical and operational capacity in selected value chains (gender disaggregated)	0	1,500 (of which at least 450 women)	Training reports Updated technical guidelines Participants lists	Extension agents from the Ministry of Agriculture and the Ministry of Livestock and Fisheries are available and willing to engage in the training

[56] 8,680 households is equivalent to ~43,400 people, taking 5 as the average household size in Zambia

and sustainability of Grant Facility	Number of recommendations report developed to address gaps in the delivery of extension services	0	1 recommendations report and associated roadmap	Technical reports Gap analysis report	Government partners are willing and able to engage in the exercise and to endorse the recommendations on the long-term Sufficient budgetary allocation from GoZ and line ministries to implement and sustain recommendations in practice
	Number of camp extension officers with increased mobility	0	500	Bicycle receipts Distribution list	
	Number of technical training manuals and guidelines developed or updated in selected value chains (horticulture, fisheries and aquaculture)	0	3 technical training manuals with operational guidelines (horticulture, fisheries and aquaculture)	Technical training manuals	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in awareness activities and training by scheduling activities in accordance with women's constraints and responsibilities
	Number of extension agents with updated technical and operational knowledge on selected value chains	0	1,500 (of which at least 450 women)	Training reports Participants lists	Women are willing and able to engage in awareness activities and training by scheduling activities in accordance with women's constraints and responsibilities Extension agents are able to travel to the project sites
Output 1.2. Communities are aware and have capacity to trigger behavioural change to support the uptake of resilience measures	Number of people capacitated to inform district-level planning strategies and sustain diversified livelihood options	0	10,000 direct beneficiaries (approx.. 5000 women)	Training reports Participants lists Consultations reports	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in awareness activities and training by scheduling activities in accordance with women's constraints and responsibilities COVID-19 pandemic does not escalate to cause the halting of project field activities National peace and stability continue Extreme weather events such as floods and droughts do not disrupt project activities, including causing migration of beneficiaries.
	Number of workshops held to collect needs, priorities and knowledge of communities to inform district-level planning	0	45 workshops (three per district)	Training reports Participants lists Consultations reports Recommendations reports for district-level planning strategies	
	Number of people with increased technical capacity to sustain diversified livelihood options	0 Fishers engage in unsustainable fishing practices resulting in ecosystem	2,500 direct beneficiaries (750 women)	Training reports Participants lists Post-training surveys	

		damage and resource depletion Farmers engage in unsustainable production practices resulting in soil loss and land degradation Harvest and post-harvest losses are high resulting in lost income and food security			
	Number of training champions trained in selected value chains	0 District-level extension agents coverage results in insufficient provision of support for farmers, fishers and aquaculture producers	180 (of which at least 50 women)	Training reports Participants lists Post-training surveys	
Output 1.3. Supply of locally-adapted resilient seeds and fish fingerlings and feed is established	Number of people with access to locally-adapted resilient seeds	0 Farmers do not have access to a reliable, locally-adapted resilient supply of seeds	12,500 direct beneficiaries (6,250 women)	Field surveys Self-scored questionnaires	Communities and farmers remain meaningfully engaged and are willing to use resilient seeds Awareness raising and training activities bear expected results
	Number of hectares under assisted natural regeneration, agroforestry techniques and seed production demonstration plots	0	2,500 ha	Field surveys	
	Number of demonstration plots established to produce legumes and small grains seeds	0 Farmers do not have access to resilient seeds and are unaware	75 (5 per district)	Field surveys	Communities remain meaningfully engaged throughout the project lifetime and continue to maintain plots post-project end

		or risk-averse to try resilient seed varieties			
	Number of community seed banks established	0	15 (one per target district) including at least 7 managed by women or women headed groups	Field surveys	
	Number of people with access to fish fingerlings and feed	0 Existing aquaculture producers do not have access to a local, reliable supply of fish fry, fingerlings and feed	14,400 direct beneficiaries (northern districts where aquaculture operations take place) (4,320 women)	Field surveys Self-scored questionnaires	Government funding is secured to sustain operations of the hatcheries and feed plants post-project end Assuming 30% women will engage in aquaculture operations
Output 1.4. Improved market access through crossing points rehabilitation and construction	Number of culverts constructed or rehabilitated	0	5	Civil works completion certificates, supervision reports	Local contractors have the technical capacity to deliver quality infrastructure
	Number of beneficiaries with improved access to aggregation centers, inputs, services and markets	0	21,700 direct beneficiaries (estimating ~4,340 per site x 5) (6,510 women)	Field surveys, field technical visits, project M&E reports	Extreme weather does not delay or damage construction; communities participate in construction oversight and maintenance
Component 2: Provision of rural finance and technical assistance for the diversification and sustainability of livelihood options					
Outcome 2. Promoted and diversified livelihood options strengthen the resilience and build adaptive capacities of vulnerable communities to climate change-related extreme weather events in five provinces in Zambia (Luapula, Northern, Central, Southern and Western)	Number of people with access to financing options for resilience measures in the three target sectors Number of grants approved and financed	0 Grant finance is not available for small-scale farmers, fishers and aquaculture operators Unavailability of appropriate financing products and mechanisms	2,225 direct beneficiaries (660 women) 6,975 indirect beneficiaries (2090 women) 195 individual grants (representing 975 direct beneficiaries) incl. 30% of grants awarded to women or 58 grants 25 community grants (representing 1,250 direct beneficiaries) incl. 30% of community grants awarded to women-headed initiatives/ 7 grants	Grant agreements	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in awareness activities and pre-grant support by scheduling activities in accordance with women's constraints and responsibilities Willingness and ability of fishers to endorse sustainable fishing practices Assuming average household size of 5 people Assuming 50 people for community grants (cooperatives, farmers groups etc.)

Output 2.1. Grant Facility is established and operational to finance resilient sub-projects in the aquaculture, capture fisheries and agriculture sectors	Number of mechanisms enabling access to rural finance and technical assistance established	0	1	Establishment documents of the Grant Facility including eligibility criteria, screening criteria, and proposed TA structure	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in awareness activities and pre-grant support by scheduling activities in accordance with women's constraints and responsibilities Willingness and ability of fishers to endorse sustainable fishing practices
	Number of people reached by awareness campaign	0	2,225 direct beneficiaries (660 women) 6,975 indirect beneficiaries (2090 women)	Workshop reports Campaign materials Field surveys	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in awareness activities and pre-grant support by scheduling activities in accordance with women's constraints and responsibilities Assuming women will represent 30% of the total number of people reached and offered pre-grant support to the GF
Output 2.2. Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects	Number of grantees with increased technical and operational capacity to sustain financed sub-projects	0	2,225 direct beneficiaries (660 women) 6,975 indirect beneficiaries (2090 women)	Training reports Relevant sub-project plans (ESMPs, O&M etc.) Post-grant TA roadmaps of grantees Pre-grant roadmaps of candidate grantees	Sufficient interest and engagement from communities to engage in resilient investments and interventions in the three target value chains Women are willing and able to engage in technical assistance activities by scheduling activities in accordance with women's constraints and responsibilities Willingness and ability of fishers to endorse sustainable fishing practices Assuming 30% of women will successfully apply to the GF
Component 3: Enhancing knowledge management for evidence-based adaptation planning					
Outcome 3. Enhanced availability of reliable data	Number of people covered by local adaptation planning tools	0	43,400 direct beneficiaries (21,700 women or 50%)	Project M & E reports Field technical visits	Community engagement is sustained throughout the life of the project.

and information to sustain fish and fruit value chains	Number of people with access to weather, climate and early warning services		217,000 indirect beneficiaries (108,500 or 50% women)	Progress reports Mid-term and final project evaluations	COVID-19 pandemic does not escalate to cause the halting of project field activities Extreme weather events such as floods and droughts don't disrupt project activities, including causing migration of beneficiaries
Output 3.1. Creation of a Knowledge Dissemination and Management Strategy (KMS) to sustain the uptake of climate-resilient fish and agricultural production	Number of tools developed to support early access to weather and climate information	0	1	Weather and climate reports	Communication tools bear expected results and raise interest of communities
	Number of people reached by radio broadcasts	0	43,400 direct beneficiaries (21,700 women or 50%) 217,000 indirect beneficiaries (108,500 or 50% women) 4 broadcasts per year from Year 1 to Year 7	Radio broadcasts Self-scored survey of beneficiaries in the target areas	Communication tools bear expected results and raise interest of communities
	Number of knowledge exchange platforms organised	0	4 (1 per year from Year 2 to Year 5)	Workshops attendance lists and reports	Willingness and ability of all stakeholders to engage in knowledge exchange
Output 3.2. Long-term and locally led adaptation planning is secured	Number of district-level adaptation planning strategies developed	0	15 (one per district)	Draft and final recommendations reports and district-level adaptation planning strategies	Communities and policy-makers remained meaningfully engaged throughout the lifetime of the project

Demonstrate how the project aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[57]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Increase the resilience and build adaptive capacities of rural populations through access to finance for investments in adaptation solutions and best practices, enhanced by institutional and financial innovation mechanisms	Number of people with enhanced climate resilient livelihoods and food security (gender disaggregated)	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.2 Percentage of targeted population with sustained climate resilient alternative livelihoods 6.2.1. Type of income sources for households generated under climate change scenario	10,558,000
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	**Grant Amount (USD)**

[57] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

Outcome 1. Fostered national and local level technical capacity to support the uptake of resilience measures	Number of people with access to reliable, evidence-based extension services	Output 8. Viable innovations are rolled out, scaled up, encouraged and/or accelerated	8.1 No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated 8.2 No. of key findings on effective, efficient adaptation practices, products and technologies generated	2,967,400
Outcome 2. Promoted and diversified livelihood options strengthen the resilience and build adaptive capacities of vulnerable communities to climate change-related extreme weather events in five provinces in Zambia (Luapula, Northern, Central, Southern and Western)	Number of people with access to financing options for resilience measures in the three target sectors Number of grants approved and financed	Output 6. Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	7,136,600
Outcome 3. Enhanced availability of reliable data and information to sustain fish and fruit value chains	Number of people covered by local adaptation planning tools	Output 7. Improved integration of climate resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector) 7.2. No. of targeted development strategies with incorporated climate change priorities enforced	**454,000**

Adaptation Fund Core Impact Indicator "Number of Beneficiaries"				
Date of Report				
Project Title				
Country				
Implementing Agency				
Project Duration				
	Baseline *(absolute number)*	Target at project approval *(absolute number)*	Adjusted target first year of implementation *(absolute number)*	Actual at completion[58] *(absolute number)*

[58] At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)

Direct beneficiaries supported by the project				
Female direct beneficiaries				
Youth direct beneficiaries				
Indirect beneficiaries supported by the project				
Female indirect beneficiaries				
Youth indirect beneficiaries				

Adaptation Fund Core Impact Indicator "Natural Assets Protected or Rehabilitated"				
Date of Report				
Project Title				
Country				
Implementing Agency				
Project Duration				
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion[59]

[59] At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)

Natural Asset or Ecosystem *(type)*				
Change in state *Ha or km Protected/rehabilitated, or Effectiveness of protection/rehabilitation - Scale (1-5)*				
Total number of natural assets or ecosystems protected/rehabilitated				

Adaptation Fund Impact Indicator "Increased income, or avoided decrease in income"				
Date of Report				
Project Title				
Country				
Implementing Agency				
Project Duration				
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Income Source[60] *(name)*				
Income Source				
Income level *(USD)*				

[60] When the numbers of livelihoods go through significant changes, such as when sources of income are diversified, it may be useful to illustrate the changes by primary livelihoods.

Number of households *(total number in the project area)* *(report for each project component)*				

F. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs

Activity	Budget Notes	AF Grant amount USD
Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options		
Output 1.1. National and district-level extension agencies are capacitated to support uptake of resilience measures and sustainability of Grant Facility		
Activity 1.1.1 Development of recommendations report and update of relevant sectoral training manuals and technical guidelines	120 consulting days for international and national consultants in Year 1 at USD 600 and USD 300 respectively	60,000
Activity 1.1.2. Delivery of training and capacity building for national extension services	Organisation of quarterly workshops in Year 2 in 15 districts for 1,500 people (USD 50 per person) Consulting days for training facilitators (national consultants) in Year 2 at USD 300. 60 workshops in total, one day per workshop Community mobility pilot: bicycles (complete with community selection and NGO service cost), bicycle mechanic training; toolkit and initial spare parts (142,500 USD total for 500 bicycles for extension officers)	235,500
Output 1.1 subtotal		295,500
Output 1.2. Communities are aware and have capacity to trigger behavioral change to support the uptake of resilience measures		
Activity 1.2.1. Conduct consultations with communities and traditional leaders to collect information on needs and priorities for district-level adaptation planning	Organisation of 15 workshops (one per district) at 5000 USD per workshop 15 consulting days for national consultants to facilitate consultation workshops + DSA	81,750
Activity 1.2.2. Awareness raising and delivery of training to communities and traditional leaders based on updated information in training manuals, technical guidelines	Organisation of 45 training workshops (one in each district for each thematic area - three thematic areas i.e. horticulture, aquaculture, sustainable capture fisheries) DSA for extension agents and staff costs per CBU, HODI and RESEI technical partners	231,750
Output 1.2 subtotal		313,500
Output 1.3. Supply of locally-adapted resilient seeds and fish fingerlings and feed is established		
Activity 1.3.1 Support to resilient seed production at the local level through the creation of demonstration plots and training of farmers	Establishment of 5 demonstration plots per district i.e. 75 plots of x hectares at USD2000 per hectare	150,000
Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations	Construction of 2 fish hatcheries and 2 feed plants	958,400
Output 1.3 subtotal		1,108,400
Output 1.4. Improved market access through crossing points rehabilitation		

Activity 1.4.1 Rehabilitation and construction of four culverts to enable rural communities to access aggregation centers, inputs, social services and markets especially during and after extreme weather events		1,250,000
Output 1.4 subtotal		1,250,000
Total component 1		2,967,400
Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options		
Output 2.1 Grant Facility is established and operational to finance resilient sub-projects in the aquaculture, capture fisheries and agriculture sectors		
Activity 2.1.1 Establishment and operationalization of the Grant Facility	Estimated 195 individual and 25 community sub-grants awarded USD 25,000 for individual grants, USD 50,000 for community grants	5,982,500
Activity 2.1.2 Launch of awareness campaign and call for expression of interest	30 Consulting days for national consultant at USD 300 to develop campaign materials Launch of campaign in the 15 districts - 15 workshops to enrol candidate grantees (5000 USD per workshop) Consulting days for national consultants as workshop facilitators (1 day per workshop i.e 15)	88,500
Output 2.1 subtotal		6,071,000
Output 2.2 Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects		
Activity 2.2.1 Pre-grant support to candidate grantees to develop viable, context-appropriate sub-projects in the selected sectors	Staff costs and consulting days for partners to deliver technical assistance: Copperbelt University, HODI and RESEI + international and national consultants	532,800
Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects		532,800
Output 2.2 subtotal		1,065,600
Total component 2		7,136,600
Component 3. Enhancing knowledge management for evidence-based adaptation planning		
Output 3.1. Creation of a Knowledge Dissemination and Management Strategy (KMS) to sustain the uptake of climate-resilient fish and agricultural production		
Activity 3.1.1. Deployment of tools and communication channels to enhance availability and access to climate information at the community and national levels	Partnership with Zamtel to deploy AVS in 15 target districts Consulting days for development of radio broadcasts Radio fees	279,000
Activity 3.1.2. Organisation of knowledge exchange platforms	Organisation of 4 national-level knowledge exchange platforms (workshops) at USD 10,000 each	40,000
Output 3.1. subtotal		319,000
Output 3.2. Long-term and locally led adaptation planning is secured		

Activity 3.2.1. Development of 15 strategies at district and community-levels to incorporate climate change priorities and support capacities for implementation	20 Consulting days for international and national consultants to stocktake consultations with communities and develop recommendations report for 15 district-level planning strategies (300 days total split)	135,000
Output 3.2 subtotal		135,000
Total component 3		454,000
Project activity cost (A)		10,558,000
Project Execution costs (including M&E) (B)		
Project staff personnel (Coordinator, M&E Specialist, CC Adaptation Specialist, Gender Specialist, Financial Officer, Driver)		679,257
Project vehicle		83,943
All staff travel expenses		100,733
Inception Workshop, mid-term and terminal evaluations (M&E)		166,209
External audits		75,549
Total		1,105,691
Total Project Costs (A+B)		
Total		11,663,691
Project Implementing Entity (8.5%) (C)		
Operational and Financial Management		215,287
Project Development and implementation support		396,049
Technical support and supervision		380,076
Total		991,412
Total Amount of Financing Requested (A+B+C)		12,655,103

2. Include a disbursement schedule with time-bound milestones

Project disbursement schedule (USD)

	Upon signature of Agreement	One Year after Project Start a)	Year 2b)	Year 3	Year 4 c)	**Total**
Scheduled date	15/01/2026	15/01/2027	15/01/2028	15/01/2029	15/01/2030	-
Project Funds	1,632,917	3,499,108	2,216,101	2,099,464	2,216,101	11,663,691
Implementing Entity Fees	138,798	297,424	188,369	178,452	188,369	991,412
Total	1,771,715	3,796,532	2,404,470	2,277,916	2,404,470	12,655,103

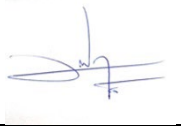
PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

Record of endorsement on behalf of the government[2]

Mr Billy Katontoka National Coordinator-National Designated Authority for GCF and AF Ministry of Green Economy and Environment, Zambia	Date*: 26 Dec. 2024*

Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Implementing Entity Co-ordinator: Mr Pierre Yves Guedez, Lead, Multilateral Climate and Environmental Funds ECG Division, IFAD	Email : p.guedez@ifad.org Signature: 
Juan Carlos Mendoza Implementing Entity Coordinator Director, Environment, Climate, Gender and Social Inclusion Division (ECG) International Fund for Agricultural Development	
Date: 20 January 2025	email: ecgmailbox@ifad.org

Project Contact Person:
Ms Claus Reiner
Regional Climate and Environment Specialist, Eastern and Southern Africa, ECG Division, IFAD
Tel : +254-79 2425621 email: c.reiner@ifad.org

HQ focal point:
Mr Pierre Yves Guedez
Lead Climate and Environmental Funds, ECG Division, IFAD
Tel : + 39-338 3384824 email: p.guedez@ifad.org

i.[6.] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Annex 1: Letter of Endorsement

All communication should be addressed to the
Permanent Secretary
Telephone: 0211-252395
0211-252394
0211-252391

In reply please quote

No.: NDA/71/21/9....

REPUBLIC OF ZAMBIA

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

OFFICE OF THE PERMANENT SECRETARY
Corner of John Mbita & Nationalist Roads
P.O. BOX 30147
Lusaka-Zambia

LETTER OF ENDORSEMENT BY GOVERNMENT

26th December, 2024

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
N 7-700
1818 H Street NW
Washington DC 20433
USA

SUBJECT: ENDORSEMENT FOR THE CLIMATE CHANGE ADAPTATION OF LIVELIHOODS THROUGH RURAL FINANCE (CALRF) PROJECT

In my capacity as Designated Authority for the Adaptation Fund in Zambia, I confirm that the above National Project Proposal is in accordance with the Government's National Priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Zambia.

Accordingly, I am pleased to endorse the above Project Proposal Titled "Climate Change Adaptation of Livelihoods Through Rural Finance" (CALRF), with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agricultural Development (IFAD) and executed by Ministry of Green Economy and Environment.

Sincerely,

Billy Katontoka (Mr.)
National Coordinator
National Designated Authority
MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

Annex 2. ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS ANALYSIS

Adaptation Fund ESP Screening

Content

I. **Summary description of the Project**
II. **Screening and categorization**
III. **Environment and Social Impact assessment**
IV. **Environment and Social Management Plan**
V. **Monitoring and Evaluations arrangements**

I. Summary description of the Project

1. **Socio-economic context**. With a population estimated at 19.3 million, Zambia's economic progress has been unsteady. After 15 years of significant socio-economic progress and achieving middle-income status in 2011, the Government of the Republic of Zambia's (GRZ) economic performance has stalled in recent years. Between 2000 and 2014, the annual real gross domestic product (GDP) growth rate averaged 6.8%. The GDP growth rate then slowed to 3.1% per annum between 2015 and 2019, mainly attributed to falling copper prices and declines in agricultural output and hydroelectric power generation due to insufficient rains, and insufficient policy adjustment to these exogenous shocks. The debt situation in Zambia has far-reaching consequences on reaching SDG targets. Further, Zambia is burdened with external public debt of USD11.1 billion (54% of GDP), a fiscal deficit of 11.7% - that deprived the poor of resources for social services.

2. The economy of Zambia fell into a deep recession due to the adverse impact of the COVID–19 pandemic. Real GDP contracted by an estimated 4.9% in 2020, after growing by 4.0% in 2018 and 1.9% in 2019. The output contraction results from an unprecedented deterioration in all the key sectors of the economy. Manufacturing output fell sharply as supply chains were disrupted, while the service and tourism sectors were hurt as private consumption and investment weakened due to measures taken to contain the spread of COVID–19. Inflation has been rising, mainly driven by the pass-through effects of the kwacha depreciation and elevated food and transport prices. Following the outbreak of COVID–19, inflation rose to 17.4% in 2020 and is projected to remain above the target range of 6–8% in 2021.

3. Despite impressive growth rates and the country reaching low middle-income status, Zambia continues to struggle to translate its economic growth into poverty eradication and reduction of inequalities. Poverty is increasing in absolute and relative terms. Poverty is primarily a rural phenomenon. 77.3% males and 83.4% females in rural areas are categorized as poor in Zambia. 64.4% and 67.3% of males and females, respectively are categorized as extreme poor. Zambia positioned at 151 out of 189 countries and territories in UNDP's 2023 HDI, with a value of 0.569, placing Zambia in the medium human development category. 64% of Zambians living under $2 a day with over 40.8% of them considered to live in extreme poverty (under $1.25 a day) which is disproportionally high in female-headed households (56.7%). As the population grows, the country faces a widening gap between the richest and poorest – it is one of the world's most unequal societies with, 2021 data showing an income Gini coefficient of 0.57. Rising inequalities across the country have become a defining challenge of the Zambian development agenda. Inequalities faced by the poor, children and adolescents, youth, women, and people with disabilities are putting sustainable development at risk of undermining social progress, threatening economic and political stability, stirring social disharmony, and undercutting human rights. Accessing health services is a challenge, more so, in rural settings. The number of health facilities in rural areas is far too low than desired. The country also faces other social, economic, and political challenges including limited access to safe water, youth unemployment (17.9%), and child marriages, which has shown that 29% of women aged 20-24 years married by the age of 18.

4. **Climate change**. The ND-GAIN index ranks Zambia in the 137th position, being the 41st most vulnerable country and the 53rd least ready country to face climate change. Zambia's high vulnerability score and low readiness score place it in the upper-left quadrant of the ND-GAIN Matrix. Consequently, it has both a great need for investment and innovations to improve readiness and a great urgency for action to respond to the impacts of extreme climate change-related events. This is particularly concerning because the country has to contend with territorial and demographic disparities in wealth distribution and economic development that have left rural poverty stubbornly high. Additionally, Zambia's external financial position worsened in 2020, with dwindling reserves (averaging 1.6 months import cover), remaining depressed in 2021 due to copper price and output fluctuations, rising public debt payments, and elevated non-oil imports. Despite falling revenues, government's expansionary fiscal policy for public investments resulted in widening fiscal deficits (8.3% of GDP in 2019 and 11% of GDP in 2020).

5. **Impact of climate change on agriculture**. Drought is endemic to Zambia, due in part to below-average precipitation, particularly during the seasonal rains. The country has a history of drought years: 1987/88, 1991/92, 1994/95, 1997/98, 2001/03,

2004/05, 2011/12, 2015/16 and 2018/2019. This sequence implies that the country experiences drought every 4 to 5 years, and the frequency is projected to increase in the future due to climate change. Drought brings reduced agricultural production from erratic rains, increased dry spells, water logging and false and late starts. Given that roughly 90% of cultivation in Zambia is rain-fed, small-scale agricultural producers are particularly vulnerable to drought. The severe drought of 2018/2019 affected 2.3 million people, who experienced increased food insecurity, with a sharp rise in food prices from the reduced agricultural production and harvest. Livestock production in the grazing areas in the western and southern parts of the country was particularly affected. Low water levels in major rivers and groundwater systems increased water insecurity. The country's aspiration to manage natural resources and respond to the challenges of climate change is stifled by weak governance linked to low institutional capacities and poor coordination mechanisms more effectively. Combined, these factors continue to undermine the country's resilience to natural and economic shocks. Climate-induced changes are already exerting considerable stress on the country's vulnerable sectors, hauling particularly the poor into further poverty.

6. The ND-GAIN index ranks Zambia in the 137th position, being the 41st most vulnerable country and the 53rd least ready country to face climate change. Zambia's high vulnerability score and low readiness score place it in the upper-left quadrant of the ND-GAIN Matrix. Consequently, it has both a great need for investment and innovations to improve readiness and a great urgency for action to respond to the impacts of extreme climate change-related events. This is particularly concerning because the country has to contend with territorial and demographic disparities in wealth distribution and economic development that have left rural poverty stubbornly high. Additionally, Zambia's external financial position worsened in 2020, with dwindling reserves (averaging 1.6 months import cover), remaining depressed in 2021 due to copper price and output fluctuations, rising public debt payments, and elevated non-oil imports. Despite falling revenues, government's expansionary fiscal policy for public investments resulted in widening fiscal deficits (8.3% of GDP in 2019 and 11% of GDP in 2020).

7. While there is economic instability, the natural resource base keeps being eroded. According to the Global Forest Watch, in 2010, Zambia had 22.4Mha of tree cover, extending over 30% of its land area. In 2020, it lost 163,000 ha of tree cover, equivalent to 59.7Mt of CO_2 emissions. Deforestation in the medium and long terms erodes the productive capacity of land to maintain or enhance the stocks and flow of ecosystem services that underpin livelihoods but also contribute to several other environmental benefits. As ecosystem services erode, so does the ability of communities to adapt to the impacts of climate variation and change.

8. The project is designed to build the resilience and adaptive capacities of rural populations in a complex vulnerable context characterised by lean asset portfolios, continued resource degradation, isolation from political powers, limited financial resources to invest in socioeconomic climate-sensitive activities – and areas experiencing extreme weather events in terms of floods in some areas and droughts in others – and these are projected to continue in terms of frequency and intensity. To address the complex context in five provinces, the project proposes both concrete interventions, primarily meant to build the so much required socioecological resilience and adaptive capacities of affected poor communities. Additionally, the project is cognizant of the role of multi-stakeholder engagement, particularly the private sector, with their financial capacities and investment priorities to support building resilience in climate-sensitive rural enterprises. Finally, the project acknowledges the critical role of community capacities and institutional arrangements as enablers to sustain the transformative impacts of concrete interventions.

II. THE ENVIRONMENT AND SOCIAL MANAGEMENT PLAN

9. The Environmental and Social Management Plan outlined here below consists of a set of measures for: (a) screening (i.e. determination of potential adverse environmental and social impacts);

- Mitigation
- Monitoring
- Institutional arrangements to be undertaken during planning, design, procurement, implementation stages of the planned activities to be financed out of proceeds of the project, to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. Some of the projects interventions / investments to be supported may have adverse environmental and social impacts that must be addressed before they are implemented. This ESMP is necessary to prescribe project arrangements for the preparation, review, approval and implementation of activities to adequately address AF and national environmental and social safeguards issues and principles. It provides distinct arrangements for addressing environmental and social issues associated with the implementation of the project. Table 5 provides a template for developing an ESMP that includes the actions needed to implement proposed mitigation measures.

2.1 OBJECTIVES OF THE ESMP FOR STRENGTHENING LIVELIHOODS AND INSTITUTIONAL CAPACITIES TO ENHANCE COMMUNITY ADAPTATION TO CLIMATE CHANGE IN SELECTED PROVINCES IN ZAMBIA

10. The overall objective of this ESMP is to provide an Environmental and social screening for the projects. It is intended to be used as a practical tool during project implementation. It explicitly describes the steps to be undertaken in the implementation of the planned activities under the project. This will ensure that the implementation of the project activities is carried out in an environmentally and socially sustainable manner. It will also provide a framework to enable communities/beneficiaries screen activities, identify measures and implement measures to address adverse environmental and social impacts. Specifically, the ESMP will aim to:

i) Establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of activates to be executed under the project;
ii) Assess the potential environmental and social impacts of envisaged projects activities;
iii) Propose mitigation measures which will effectively address identified negative impacts;
iv) Specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to this projects; and
v) Determine the training, capacity building and technical assistance needed successfully implement the provisions of the ESMP by the various stakeholders. CALRF

III. Environment and Social Management Plan

1. The project has been designed in full compliance with national regulations. A consolidated ESMP for the whole project is presented in the table below, however specific measures have been taken to ensure the climate-proofing of irrigation systems follows national laws and approval processes. The PMU of the project will be working closely with the Ministry of Agriculture, Ministry of Health, Disaster Management Unit and Zambia Environment Management Authority. The project will furthermore also map all the areas of protected natural beauty and cultural heritage and will be reported in the PPR tracker accompanying report. As part of the PPR tracker the project will also report on all the indicators (including gender and youth), identifying those indicators that are not meeting their targets and proposing the corrective measures being taken by the PMU. Below is a consolidated EMSP table synthesizing project safeguard for each priority of the Adaptation Fund's ESP and GP and reporting plan.

3.1 Consolidated ESMP

Table 18 Consolidated ESMP

Checklist of E&S Principles	Potential risks and impacts	Proposed compliance measures
1. Compliance with the Law	**Low risk:** Overall, through consultations with different stakeholders, including government agents, compliance with national regulations and standards will be ensured and therefore the risk is low. Through monitoring ensure adequate management verification that safeguards are in place and are a mirror of these principles. In practice, adherence to laws is influenced by institutional capacities, resource availability and socio-cultural practices, among other factors. These are acknowledged but can't be determined at the design stage – and therefore, compliance to national regulations and standards will need screening against the 15 AF ESP principles.	**Compliance measures:** The project will identify the relevant Laws concerned by contracts with service providers, and include provisions to ensure these Laws are complied with. The project will seek an equitable representation of women in capacity development and access of actual socioeconomic activities. Having mentioned that, it is recalled that the project will primarily target cooperatives and smallholders as potential grantees. It has established selection criteria (see Table of Grant screening Criteria). Though these have been established at development, actual grantees will only be identified at implementation, therefore consisting USPs, calling for a screening assessment against the 15 AF ESP principles.
2. Access and Equity	**Low risk:** In promoting access to grant finance particularly, the project will operate in a socio-cultural context that keeps women and the youth from lucrative undertakings. The project will be	**Compliance measures:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent

	deliberate and ensure equitable representation of both males and females.Gender quotas have been established where relevant and possible. As a result the project will seek an equitable representation of women in capacity development and access of actual socioeconomic activities. Stakeholder consultations undertaken during the proposal design and development stages have been integrated to ensure that national and district-levels are catered to. The project therefore aims generate adaptation benefits for all categories of stakeholders without discrimination. However, improved livelihoods of locals by facilitating improved participation of women in income-generating activities can also have the negative impact of introducing disturbances to the social fabric that otherwise exists in these communities, especially at the household level. Increased conflict between communities competing for benefits from the project activities including potential for local people being physically assaulted or injured.	communication about eligibility criteria and project procedures. Responsibility for the development of these tools will lie with the Gender and Social Inclusion Specialist.
3. Marginalized and Vulnerable Groups	**Low risk:** As noted above, the project's target group is vulnerable rural populations thereby ensuring social inclusion is a key consideration in the project particularly providing adaptation options and increasing access to rural finance for these groups. The full design has conducted an analysis of the profiles of the communities and the targeted areas. The profiling improved the targeting of the project, ensuring the inclusion the vulnerable – in the context of the project, the vulnerable include the socioeconomically non-empowered community members, and include women, the youth and the differently abled. Despite this level of consideration, in practice and because of power dynamics within communities, there is a possibility for marginalization of vulnerable groups – therefore, this will need to be screened against the 15 AF ESP principles.	**Compliance measure:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures, notably with regards to household vulnerability to ensure the threshold inclusion of 50% women and 30% youth is achieved. The mechanisms will include: social inclusion trainings, broad information campaigns and outreach events targeting women and youth, and transparency on the public call processes. The project will also include specific measures to support gender equality and women's empowerment, targeting: (i) economic empowerment, (ii) access to financial services and information, and (iii) training programs on market linkages and financial literacy, among others. The Gender and Social Inclusion Specialist will have the charge to develop the tools.
4. Human Rights	**Low risk:** For project interventions pertaining to construction that will require additional labour, issues related to treatment of workers by project staff and contractors will be closely monitored during project execution to ensure no labour or human rights violations.	**Compliance measures:** The project will contribute to sustained economic and social inclusion by targeting the rural vulnerable poor communities in 15 districts. The project, and in consultation and engagement with different stakeholders is cognizant of Zambia's policies and law to promote human rights, including the labour laws. The project will ensure adherence, particularly paying attention to child labour in all the project-

		funded activities.
5. Gender Equality and Women's Empowerment	**Low risk:** The Project has in its objectives gender equality and women empowerment, which should be improved through the project activities. The Gender Action Learning System will be applied and specifically the Household Methodology to ensure results are achieved. It should also be noted that an overall 50% of the direct beneficiaries will be female, with specific targets and quotas for applicable activities.	**Compliance measures:** The project will establish a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures to ensure to ensure the threshold inclusion of 50% women inclusion and their empowerment. Responsibility for the development of these tools will lie with the Gender and Social Inclusion Specialist.
6. Core Labour Rights	**Low risk:** The project will support activities that will require human labour which may pose health and safety risks to workers and inhabitants around the construction sites (notably for the hatchery and fish feed plants).	**Compliance measure:** Through the application of the IFAD SECAP, screening will be conducted on investments to ensure labour rights are respected. Additionally, as has been noted above, no child labour will be tolerated in adherence to the Zambian laws and international best practices.
7. Indigenous Peoples	**No risks:** Technically, there is no group in Zambia that identifies itself as an Indigenous Peoples or Tribal Groups.	No further assessment require for compliance.
8. Involuntary Resettlement	**Low risk:** : Some of the project activities will involve infrastructure development such as setting up simple and inexpensive irrigation systems. The areas will be limited in size, and since the primary target will be already existing Cooperatives, the land for introducing sustainable agricultural practices will already be under production or at least some of utilization by Cooperative members. The choice of the particular land for project intervention will be participatory and consultative to ensure community members themselves take a lead in proposing the area for project intervention. It should be noted that Zambia is sparsely populated, and communities in rural areas rarely live in agglomerations. This limits the chance of land scarcity within community contexts to trigger undesirable physical or economic involuntary resettlements. Despite this assurance at the stage of development, during implementation, due diligence will be done through the 15 AF ESP principles. Therefore, activities related to use of land are USPs, particularly as related to specific sites to establish climate resilient seed crop varieties and mixed crop and fish systems, supporting simple local level drying equipment, and the development of strategies to incorporate climate change priorities.	**Compliance measure:** The project will assess and establish that the process to select activities do not lead to physical and economic displacement and involuntary resettlements. The project will conduct thorough consultations to ensure unanimous agreements with communities on areas to establish project activities that can potentially lead to involuntary resettlement in the short or long term so that involuntary resettlement are avoided altogether.
9. Protection of Natural Habitats	**Low risk:** Clearing vegetation to make way for various infrastructure in the project areas will change the land use negatively as it suffers	**Compliance measure:** As noted above under 'Involuntary Resettlement,' through infrastructure development, the

	erosion and a change to the wildlife composition in the area. The increased human and vehicular traffic during project implementation and operations will introduce noise, and other disturbances which will cause wildlife to change their behaviour as a result of changed land uses and population growth. Concrete activities will be screened, otherwise should, any of the activities lead to destruction of the natural habitats, full scale social and environmental assessment will be undertaken. At this level, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.	project may contribute to disturbance of natural habitats. However, considering the envisaged level of development, disturbance to natural habitats will likely be minimal or non-existent. Concrete activities will be screened, otherwise should, any of the activities lead to destruction of the natural habitats, full scale social and environmental assessment will be undertaken. At this level, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.
10. Conservation of Biological Diversity	**Low risk:** As noted above, through infrastructure development, the project may contribute to disrupting Conservation of Biological Diversity. However, considering the envisaged level of development, disturbance to Conservation of Biological Diversity will likely be minimal or non-existent. Concrete activities will be screened, otherwise, should any of the activities lead to disruption of the Conservation of Biological Diversity, full scale social and environmental assessment will be undertaken. As above, sub-grants related to land use such as investments in agricultural and aquaculture production systems will need to be screened using the 15 AF ESP principles during implementation.	**Compliance measure:** As noted above under 'Involuntary Resettlement,' through infrastructure development, the project may contribute to disrupting Conservation of Biological Diversity. However, considering the envisaged level of development, disturbance to Conservation of Biological Diversity will likely be minimal or non-existent. Concrete activities will be screened, otherwise, should any of the activities lead to disruption of the Conservation of Biological Diversity, full scale social and environmental assessment will be undertaken. As above, activities related to land use such as investments in agricultural production systems indicate USPs, and will need to be screened using the 15 AF ESP principles during implementation.
11. Climate Change	**Low Risk:** The project does not have any negative impact on climate change. The project interventions are actually aimed at addressing adverse effects of climate change. Continued stakeholder consultations will ensure that none of the proposed interventions directly or indirectly increase social and environmental vulnerabilities to climate change. They will also ensure that a robust suite of adaptation measures is implemented. Overall, the project activities will promote climate change adaptation and will not result in any increase in greenhouse gas emissions.	No further assessment required for compliance.
12. Pollution Prevention and Resource Efficiency	**Moderate risk:** Waste generated as part of the construction of new facilities may require the development of waste management plans. During infrastructure development, particularly road rehabilitation, there will be minimal noise and dust. Efforts will be done by the service providers to keep noise and dust to the minimum. These aspects will be included in the service provider contracts.	**Compliance measures:** Water conditions may be affected through establishing small, community-owned processing units for drying, juicing, and preserving local fruits under component 1 - however, the project will manage this through compliance to environmental regulation as discharged by the Zambia Environmental Management Agency

		(ZEMA).
13. Public Health	**Low risk:** Potential risks include unintended public health impacts such as water and air pollution, insufficient awareness and education efforts, and increased vulnerability to health risks if not properly managed.	**Compliance measure:** Attention will be given to activities related to water harvesting and storage and communities will be sensitised on how to use and store the water in a safe and efficient way. The project will install effective drainage systems and use permeable materials to manage runoff and safeguard water quality. The project will apply water, dust suppressants, or alternative materials to control dust pollution. The project will ensure health and safety standards are in place and adhered to, including mandating service providers in infrastructure development to submit job and health analysis. Monitoring will be done, and full scale environmental and social assessment done should any activity trigger high risk impact on public health.
14. Physical and Cultural Heritage	**Low risk:** Areas for sustainable agricultural production have not yet identified at project development, and therefore, complete risks cannot be confirmed. All activities related to agricultural production landscapes have USPs, and will need to be screened against the 15 AF ESP Principles.	**Compliance measure:** The project will identify: i. The presence in or near the project area of areas of physical and cultural heritage ii. The potential of the project to impact directly, indirectly, or cumulatively upon areas of physical and cultural heritage.
15. Lands and Soil Conservation	**Low risk:** Sustainable land management and improved soil fertility are part of the project results. The infrastructure development activities will not target areas for agricultural and so as not to compromise soil conservation practices. Thus, if any risks, they will be minimal and localized.	**Compliance measure:** The project will assess and identify potential impacts of land rehabilitation activities on the fertility status of soil and the ecosystem health of land. Tree species and land management practices that destroy the productive function of lands and soils will be avoided and 'blacklisted' against adoption. The project intends to use agroforestry multipurpose tree species as well as supporting ANR of species that are endemic to the target districts. The infrastructure development activities will not target areas for agricultural and so as not to compromise soil conservation practices. Additionally, the infrastructure such as water harvesting (cisterns) are localized and not expected to disrupt lands and soil conservation. Thus, if any risks, they will be minimal and localized.

3.2 Monitoring and Reporting

AF Principle	Management Plan and Reporting Requirements
Principle 1: Compliance with the law	A) The project will identify: • **All** applicable and relevant Zambian Laws that have to be complied with by **CALRF** PMU, Implementing Partners, contractors, Service providers etc.,

AF Principle	Management Plan and Reporting Requirements
	• Operating Manual and Instructions will include provisions to ensure these Laws are complied with.
	B) Monitoring: the PMU with the direct support of the project Legal Officer will include compliance into day-to-day implementation of the project from inception to completion.
	C) Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey
Principle 2: Access and equity	The project design supports equal access to training, equipment, infrastructure and services, taking especially into account marginalized and vulnerable groups, including women, youth and poorer communities. A) The project will establish: • A gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures. • A Grievance Redress Mechanism to make sure individuals and/or communities who will be feeling excluded or marginalized from project benefits can air their grievances. • • Equal opportunities to both women and men to (a) participate fully and equitably; (b) receive comparable social and economic benefitsmaking sure women and children do not suffer disproportionate adverse effects during the development process. The project will take a number of transparent steps that will help ensure that the benefits of the project are being distributed fairly with no discrimination nor favouritism. This will include advertising broadly and conduct extensive outreach and consultative activities aimed at targeting the most vulnerable.
	B) Monitoring: Responsibility for the development of these tools will lie with the Gender and Youth Specialist. The targeting strategy will be communicated at project inception and implementation will be throughout the project cycle.
	C) Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will highlight any incident notified through the GRM, and reflect progress on sensitization activities (information campaigns and social inclusion trainings)
Principle 3: Marginalized and vulnerable groups	A) The project will establish: A targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures, notably with regards to vulnerable subsistence farmers. • Social inclusion trainings, broad information campaigns and outreach events targeting women and youth. • Specific measures to support gender equality and women's empowerment, targeting: (i) economic empowerment, (ii) voice and decision-making; and (iii) work-balance and well-being, as per the project's Gender Strategy. • A Grievance Redress Mechanism to make sure individuals and/or communities who feel excluded or marginalized from project benefits can air their grievances. • The PMU (Gender and Youth Specialist), to make sure that no tensions or conflicts arise around the targeting approach. • Initiate a continuous, all-inclusive stakeholder engagement process. • Conduct in-depth cross sectional public consultation at on the project and goals, eligibility criteria and selection process for specific activities directed to specific groups and available grievance redress mechanisms. This should be done in partnership with IA, county officials and Community leaders.
	B) Monitoring: The PMU (Gender and Youth Specialist) will ensure that no tensions or conflicts arise around the targeting approach. Initiate a continuous, all-inclusive stakeholder engagement process. Conduct in-depth cross-sectional public consultation on the project and goals, eligibility criteria and selection process for specific activities directed to specific groups and available grievance redress mechanisms. This should be done in partnership with IA, county officials and Community leaders.

AF Principle	Management Plan and Reporting Requirements
	C) Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will track beneficiaries' numbers by gender and present progress with regards to the indicators of the Gender Action Plan (see Table 24 for detail).
Principle 4: Human rights	A) For project interventions pertaining to construction that will require additional labour:, The project will ensure adherence to Zambian labour laws and international human rights frameworks, particularly prohibiting child labour. Contractors must sign codes of conduct. Worker welfare (including health, safety, and equitable treatment) will be monitored throughout construction and implementation phases.
	B) Monitoring: PMU with the direct support of the project Legal Officer will include compliance into day-to-day implementation of the project from inception to completion.
	C) Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will highlight any incident notified through the GRM.
Principle 5: Gender equity and women empowerment	A) The project will establish: A targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures, notably with regards to vulnerable subsistence farmers. • Social inclusion trainings, broad information campaigns and outreach events targeting women and youth. • Measures to support gender equality and women's empowerment, targeting: (i) economic empowerment, (ii) voice and decision-making; and (iii) work-balance and well-being, as per the project's Gender Strategy. • A Grievance Redress Mechanism to make sure individuals and/or communities who feelexcluded or marginalized from project benefits can air their grievances. • • Provide equal opportunities to both women and men to (a) participate fully and equitably; (b) receive comparable social and economic benefits, making sure women and children do not suffer disproportionate adverse effects during the development process.
	B) Monitoring: The PMU (Gender and Youth Specialist), to make sure that no tensions or conflicts arise around the targeting approach.
	C) Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will track beneficiaries' numbers by gender and present progress with regards to the indicators of the Gender Action Plan (see Table 24 for detail).
Principle 6: Core labour rights	A) The project will ensure that: Relevant national labour laws guided by the ILO labour standards will be followed throughout project implementation. Each of these activities will be closely monitored by project staff to ensure no violation of existing labour laws and conventions, including those pertaining to payments, harsh working conditions, exploitation, discrimination, and any other relevant provisions. Any contracts entered into will ensure rights of workers are in line with ILO standards as per SPC's policy. • Adopt international standards on occupational health. • Training on safety standards and occupational hazards. • Project targets sensitized on disadvantages of using child labour. • Regular assessment of child labour risks and response mechanisms • County profiles to include consultation with communities on child labour. • Raise awareness on not using child labour. • As should be sensitised on the importance of addressing child labour in the project and what regulations/ mechanisms need to be observed/ implemented.
	B) Monitoring: Monitoring will be done by the PMU with support from the Ministry of Agriculture.
	C) Reporting: The awareness raising on applicable labour laws will be communicated at project inception and implementation will be throughout the project cycle. Compliance with labour laws and workplace incidents included in biannual reports. Labour-related grievances tracked through GRM.

AF Principle	Management Plan and Reporting Requirements
Principle 7: Ethnic diversity	Not applicable. Zambia has no groups officially recognized as Indigenous Peoples per AF's definition.
Principle 8: Involuntary resettlement	The project will not support any sub-project that will cause any physical or economic displacement of people. It will automatically exclude sub-projects that: • Require physical displacement of people. Temporary economic activities disruptions can be allowed for and treated in line with the SECAP requirements. • Permanently block the access to or use of land, water points and other livelihood resources used by others
	B) Monitoring: PMU will conduct site-specific screening using AF's involuntary resettlement criteria. All land use to be supported by signed community consent or tenure documentation.
	C) Reporting: Summary of screening and documentation of land use included in annual reports. Grievances tracked via GRM. F)
Principle 9: Protection of natural habitat	A) The project will identify: i) The presence in or near the project area of natural habitats, ii) The potential of the project to impact directly, indirectly, or cumulatively upon natural habitats. • Sensitive habitats should be avoided. (Wetlands and stream banks) • Clearing should be limited to working areas only, and these include areas for foundations for agriculture infrastructures. • Revegetation and reforestation must be prioritized. (e.g., Planting grass, and trees as appropriate) • Over abstraction of construction materials like sand and gravel should be avoided. • Habitat restoration must be done where effects have been caused i.e., refilling burrows pits and regressing bare areas. • Appropriate containment measures for all operational areas and proper disposal of used lubricants. • Soil erosion control measures (e.g., re-vegetation, reseeding of grasses, land preparation, terracing, use of gabions, stabilization of banks etc.) • Revegetation, re-grassing of all bare surfaces • Minimization of vegetation clearing to working areas only
	B) Monitoring: If critical natural habitats exist and there is a potential of the project to impact the habitat, the project will: i. Describe the location of the critical habitat in relation to the project and why it cannot be avoided, as well as its characteristics and critical value. ii. For each affected critical natural habitat, provide an analysis on the nature and the extent of the impact including direct, indirect, cumulative, or secondary impacts; the severity or significance of the impact; and a demonstration that the impact is consistent with management plans and affected area custodians
	C) Reporting: It is unlikely the project will have any negative impact on critical natural habitats, as protected areas will be de facto excluded from project activities. The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey
Principle 10: Conservation of biological diversity	A) The project will identify: i. The presence in or near the project area of critical biodiversity, ii. The potential of the project to impact directly, indirectly, or cumulatively upon critical biodiversity, iii. Native and adaptive tree species to be used for afforestation/reforestation, excluding non-native and potentially invasive species. C) It is unlikely the project will have any negative impact on protected species. The project will conduct the screening and reporting as soon as the project specific areas have been determined. In the unlikely event that the project is expected to have a negative impact on biodiversity conservation, the project will develop an ESMP in relation to ESP 10 and monitor and report in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.

AF Principle	Management Plan and Reporting Requirements
	B) If critical biodiversity exists and there is a potential of the project to impact the habitat, the project will: i. Describe the elements of known biological diversity importance in the project area, using any relevant sources of information, such as protection status, status on the IUCN Red List of Threatened Species and other inventories147, recognition as a UNESCO Man and the Biosphere Programme reserve148, Ramras site149, etc. ii. Describe why the biological diversity cannot be avoided and what measures will be taken to minimize impacts. Other measures will include: • Enforcement of parks and wildlife law, • Environmental flows must be always preserved. • Noisy operations should be conducted at certain times of the day. • Always use well serviced equipment that will be less noisy. • Noise management measures are to be implemented and shall include maintenance of vehicles and equipment to run quietly, and avoidance of leaving engines running unnecessarily. • Traffic management measures are to be implemented and travel speed of contractors and suppliers' vehicles will be restricted.
	C) It is unlikely the project will have any negative impact on protected species. The project will conduct the screening and reporting as soon as the project specific areas have been determined. In the unlikely event that the project is expected to have a negative impact on biodiversity conservation, the project will develop an ESMP in relation to ESP 10 and monitor and report in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.
Principle 11: Climate change	The project will also monitor the implementation of pastoral practices and document their (favourable) impact on the local landscape, in terms of preservation and sustainable management
Principle 12: Pollution prevention and resource efficiency	A) Water Conditions and No-Objections Minor risks of effluents discharge may be posed by the upgrading of facilities but will be managed through the compliance with the Water Law, by obtaining the relevant Water Conditions and No-Objections.
	B) Monitoring: ZEMA, PMU Engineers and Contractors to monitor compliance with environmental regulations. Waste disposal plans approved.
	C) Reporting: Pollution prevention measures reviewed during M&E visits. Key issues summarized in annual reports.
Principle 13: Public Health	Livelihood activities will contribute to improving the health of beneficiaries through food and nutritional security. However, working conditions across many sectors in the rural areas are generally poor owing to poverty level, isolation from law-enforcement authorities, among other factors. The project will ensure health and safety standards are in place and adhered to, including mandating service providers in infrastructure development to submit job and health analysis. Monitoring will be done, and full scale environmental and social assessment done should any activity trigger high risk impact on public health
Principle 14: Physical and cultural heritage	A) The project will identify: • The presence in or near the project area of areas of physical and cultural heritage • The potential of the project to impact directly, indirectly, or cumulatively upon areas of physical and cultural heritage • Conduct feasibility studies, fencing, introduce proper antiquity education programmes. • Come up with a Physical cultural resources' management plan. • Establish procedure for chance finds.
	B) If such physical and cultural heritage exist and there is a potential of the project to impact upon it, the project will: i. Provide an inventory of the physical and cultural heritage present in the wider project area that enjoys recognition at community, national, or international levels. Describe the cultural heritage, the location and the results of a risk assessment analyzing the potential for impacting the cultural heritage. ii. Describe the measures to be taken to ensure that cultural heritage is not impacted, and if it is being accessed by communities, how this access will continue
	C) Reporting: It is unlikely the project will have any negative impact on physical and cultural

AF Principle	Management Plan and Reporting Requirements
	heritage. The project will conduct the screening and reporting as soon as the precise project areas have been determined. In the unlikely event that the project would be expected have a negative impact on biodiversity conservation, the project will develop an ESMP in relation to ESP 14 and monitor and report in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR & final evaluation and completion survey
Principle 15: Lands and Soil Conservation	A) The project will: Promotion of agroforestry, terracing, mulching and minimum tillage. Tree planting, gully control, and erosion prevention structures part of grant support. •
	B) Monitoring: Soil management practices to be monitored by extension officers and technical partners. ESMPs to include soil conservation provisions.
	C) Reporting: Reports include land degradation control measures taken and monitored through M&E framework.

3.3 Grievance and redress mechanisms

The project will utilize the existing IFAD grievance mechanism to allow those affected to raise concerns that the project is not complying with its social and environmental policies or commitments, first by establishing a grievance mechanism at project level. The consultative process with the community and beneficiaries aims to ensure prevention of grievances that might arise from the project activities. However, if there are any grievances, the below redress mechanism is proposed:

281. Grievance redress mechanism should be shared with the community during the project inception workshop and subsequent meetings with the beneficiaries.

(i) As part of the grievance redress mechanism, the contact details of the project partners (Project Coordinator) should be made available to stakeholders including project beneficiaries and the community. Contact numbers would be displayed at common or predominant places along–with the project details. This is expected to promote social auditing.

(ii) Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the project area.

(iii) Complaints from foreign locations or anonymous complaints will not be taken into account.

(iv) Complaints must concern projects currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered.

282. Grievances are aimed to be addressed at the field level by the project team which will be the first level of redress mechanism. If the grievance is not resolved at the field level, it will be escalated to the PCU and then to IFAD who will be responsible for addressing grievances related to violation of any of the provisions of Environmental and Social Policy of the Adaptation Fund. All grievances received and actions taken on them will be put up before the PCU and Steering Committee meetings and will also be included in the progress reports for monitoring purposes.

283. In all cases, if the complainants disagree with IFAD's response, they may submit a request to SECAPcomplaints@ifad.org and request that an impartial review be carried out by the Office of the Vice-President. The Office of the Vice-President will decide on the steps to be taken to examine such complaints, including, if necessary, contracting external experts to review the matter. The complainants will be informed of the results of the review. IFAD will include in its Annual Report a list of received complaints and a summary of actions taken to address them.

284. The Ad hoc Complaint Handling Mechanism (ACHM) of the Adaptation Fund can be directly used in cases where the Parties have failed to reach a mutually satisfactory solution through the implementing entities' grievance mechanism within a year. The Adaptation Fund Board Secretariat independently manages all aspects related to the ACHM, under the oversight of the Ethics and Finance Committee of the Board. Guidance to ACHM are available at this link: Ad Hoc Complaint Handling Mechanism - Adaptation Fund.

3.4 Implementation Schedule

The implementation schedule of ESMP will be as follows:

Table 19 ESMP implementation schedule

Activity	**Time**				
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Development of technical guidelines for the project		Q1			
Capacity building of project team		Q1			
Environmental and Social Screening		Q1-4	Q1-4	Q1-4	Q1-4
Monitoring and reporting of ESMP		Q1-4	Q1-4	Q1-4	Q1-4

3.5 Cost for Screening and ESMP

The preparation and implementation of ESMP will have costs that have been built in to the project budget. The cost implications and their source of funds will be as follows:

ESMP related activity	Source of funding to cover costs
Capacity building of project team	Built-in the Project Execution Cost
Preparation of screening and ESMP	Built-in the Project Execution Cost
Screening and ESMP	Built-in the Project Execution Cost
Mitigation measures	Built-in the Project Execution Cost
Monitoring and reporting	Built-in the Project Execution Cost

3.6 Institutional Arrangements and Capacity Building

The institutional arrangements include the distribution of roles and responsibilities in the preparation of Screening and in the implementation of ESMP. The key players and their responsibilities will be as follows:

Table 20 ESMP institutional arrangements

Organisation / Designation	Responsibility
IFAD/PMU) Adaptation Fund Climate Specialist - under the supervision of the PMU Director.	o Preparation of Screening and ESMP through desk studies and consulting with officials to obtain official lists of protected natural habitats, critical biodiversity and culture and heritage. o Creation of maps identifying areas of interest within the project area. o Proposal of mitigation measures (if in project area). o Preparation of the report to accompany the PPR.
PMU Field Staff (with support from Adaptation Fund Climate Specialist)	o Assist the Adaptation Fund Climate Specialist in identifying areas of interest and propose mitigation solutions. Presentation of Screening and ESMP in the meetings of with technical teams and community members as important stakeholders in the language they are able to understand; and o Implementation of the ESMP at community level.

Consolidated ESMP Budget

Table 21 ESMP budget

AF Principle	Cost (USD)
Principle 1: Compliance with the law	Compliance inspections by the ESS: **20,000**
Principle 2: Access and equity	i) Awareness raising Campaigns: **50,000** ii) Procurement process following SPC guidelines (embedded across budget, including administrative costs) iii) Annual monitoring by ESS and Gender Officer to specifically conduct ESS and gender monitoring and reporting: **30,000**
Principle 3: Marginalized and vulnerable groups	i) ESS and Gender Monitoring: **40,000** Annual Beneficiary tracking reporting: **20,000**
Principle 4: Human rights	n/a
Principle 5: Gender equity and women empowerment	i) ESS and Gender Monitoring: **70,000** Annual Gender disaggregated data reporting (M&E): **50,000**
Principle 6: Core labour rights	Included in overall administrative budget
Principle 7: Ethnic diversity	n/a
Principle 8: Involuntary resettlement	n/a
Principle 9: Protection of natural habitat	i) Compliance inspections and monitoring by the ESS: **50,000** ii) Mapping out critical natural habitats: **20,000** iii) Rehabilitation of degraded lands and erection of soil conservation measures/structures: **60,000**
Principle 10: Conservation of biological diversity	i) Annual monitoring by ESS to specifically conduct ESS inspections, monitoring and reporting: **50,000** ii) Reforestation programmes: **20,000**
Principle 11: Climate change	i) Annual monitoring by ESS to specifically conduct ESS inspections, monitoring and reporting: **20,000**
Principle 12: Pollution prevention and resource efficiency	i) Annual monitoring by ESS to specifically conduct ESS inspections, monitoring and reporting: **20,000**
Principle 13: Public Health	i) Budget covered in the main awareness budget. ii) Provision of water and sanitation: **20,000**
Principle 14: Physical and cultural heritage	i) Annual monitoring by ESS to specifically conduct ESS inspections, monitoring and reporting: **20,000** ii) Development of requisite safeguards Instruments and plans including provision for chance finds: **30,000**
Principle 15: Lands and Soil Conservation	i) Annual monitoring by ESS to specifically conduct ESS inspections, monitoring and reporting: **35,000** ii) Mapping out degraded areas: **20,000** iii) Rehabilitation of degraded lands and erection of soil conservation measures/structures: **30,000**
Total Budget for the ESMP	**USD 675,000**

Annex 3: Gender analysis for CALRF Project

1. **Purpose of the gender analysis:** Climate change adaptation strategies need to consider the socio-economic roles of both men and women in production landscapes; explicitly acknowledging the differential access and use of natural resources to cope with the impacts of climate change. The objective of this preliminary gender analysis is to provide sex-disaggregated information to inform the design of CALRF in Zambia. The analysis provides information on the different needs, capacities, roles and knowledge resources of women and men. A detailed gender assessment will be conducted during the development of the full proposal to ensure meaning inclusion and engagement of women in the design and implementation of the project - that is, ensuring gender equality. This assessment presents a gender context within which CALRF will be implemented. The assessment draws the attention to differentiated impacts of climate change due to the gender divide – largely attributed to socio-cultural and traditional practices that ascribe roles and statuses to women that consequently keep them away from strategic decision-making processes and access to socioeconomic opportunities that would put them at the same level of resilience as men. The implementation of the project will therefore, remain deliberate about ensuring equal and equitable representation of men and women in decision-making processes, implementation of activities and monitoring of project outcomes – in sum, the assessment strengthens the call for women participation as equal players in the management of natural resources but also beneficiaries of both monetized and non-monetized benefits from project activities. Finally, in the conclusion, the assessment includes a set of gender integration levels and approaches that are consistent with the AF gender policy guidelines.

Methodology:

2. A desk review was undertaken, which involved reviewing reports, development/strategic plans, and policy documents pertaining to gender mainstreaming and empowerment. Relevant data was then extracted through a critical gender lens. The review of secondary information sources main limitation is the scarcity or absence of socioeconomic information disaggregate at local level because data are scarcely collected and analysed at the grassroot levels. The community perspective were collected through the consultations for the project and analysed with a gender lens. During the project inception phase and particularly the baseline studies more community level assessments will be undertaken to refine the gender action plan for the project.

Summary:

3. Zambia has historically been associated with patriarchal tendencies that have significantly affected the country's human and economic development. The daunting power imbalances between men and women and between men and women, and other vulnerable groups such as children, the youth, and people with disabilities means that those with greater power and ability to access productive resources (mostly men) are likely to participate more in economic activities, whereas those with less power or control and access continue to be marginalized. Gender Inequality emanates from deep-rooted social and cultural norms due to the fact that the Zambian Constitution (enacted in 1991 and revised in 1996) endorses customary law in addition to men's prejudice against women and lack of knowledge on women's rights among the general public. There have been, steady improvements made at the policy level towards gender equality with a fully-fledged Ministry of Gender, the Anti-Gender Based Violence Act and National Gender Policy.

4. Zambia's 2018 Gender Inequality Index (GII) value of 0.540 highlights the inequalities between men and women in parliament, health, and education, as well as labour markets.[8] This GII value reflects an increase in inequality from 0.517 in 2017.[61] It must also be noted that Zambia's GII value is very close to the SADC region's average of 0.573. The GII reflects gender-based inequalities in three dimensions: 1) reproductive health (measured by maternal mortality and the adolescent fertility rate); 2) empowerment (measured by the numbers of women in parliament, and girls completing secondary and higher education); and 3) economic activity (measured by participation in the labour market). The index represents a percentage of potential human development lost because of existing inequalities between men and women.[11] The key challenges affecting progress in achieving gender equality and equity include limited access to productive resources by women, early and child marriages and dual aspects of Zambian law and social prejudices and stereotypes,

[61] United Nations Development Programme (UNDP). n.d. "Gender Inequality Index (GII)". Available online: http://hdr.undp.org/en/content/gender-inequality-index-gii [accessed Feb 2023

has seriously affected access and participation in empowering socio- economic activities by women. At institutional level, in spite of having a Ministry of Gender, financial, institutional, and technical capacity challenges, such as inadequate funding and human resource capacity affect the effective implementation of its programme as stipulated; and the absence of sub-national implementation structures through which the Ministry of Gender could foster gender analysis and mainstreaming at provincial and/or district levels. Furthermore, there are inadequate personnel employed to specifically focus on gender issues in line ministries and most quasi-public and private institutions.

General gender context and challenges in Zambia

5. In Zambia, like many other countries, gender challenges persist despite efforts towards equality and empowerment. Women and girls face numerous specific challenges that hinder their social, economic, and political progress. The status of women in Zambia is very low and this makes them to be more vulnerable to poverty as well as social and cultural disadvantages compounded by gender imbalances. Available information indicates that gender-based disparities persist in favour of males in education, decision-making, health, agriculture and many others areas. The social economic situation in Zambia has been worsening due to failing industries, rising unemployment levels, which are a result of the structural adjustment programmes. The Zambian government recognizes the gender imbalances in social, economic, cultural and political spheres that have prevented females from contributing effectively and benefiting from the development process.[62] Here are some of the key gender challenges in Zambia:

6. *Gender-Based Violence (GBV):* Zambia experiences high levels of GBV, including domestic violence, sexual assault, and harmful cultural practices such as child marriage and female genital mutilation. These forms of violence undermine women's physical and psychological well-being, limit their opportunities, and perpetuate gender inequality. GBV also takes the form of physical, mental, social or economic abuse against a person because of that person's gender and includes violence that may result in physical, sexual or psychological harm and suffering to the victim.[63]

7. *Limited Access to Education*: Gender disparities in education persist in Zambia, with girls facing barriers such as poverty, early marriage, teenage pregnancy, and cultural norms that prioritize boys' education. This limits their potential and perpetuates gender inequality in employment and decision-making.

8. *Economic Empowerment*: Women in Zambia face limited access to economic opportunities and resources, including land ownership, credit, and entrepreneurship support. They often work in the informal sector, earning less than men and facing challenges in accessing markets, financial services, and business networks.

9. *Political Underrepresentation*: Women are significantly underrepresented in political leadership and decision-making positions in Zambia. While progress has been made with increased female representation in parliament, women still face barriers such as gender stereotypes, cultural biases, and limited access to resources for political campaigns.

10. *Health and Reproductive Rights*: Women in Zambia encounter challenges in accessing quality healthcare services, particularly related to sexual and reproductive health. High maternal mortality rates, limited access to contraceptives, and inadequate sexual education contribute to women's vulnerability and perpetuate gender inequalities.

11. *Cultural and Social Norms*: Traditional gender roles and norms reinforce inequality in Zambia. Women are often burdened with multiple responsibilities, including household chores, caregiving, and income generation, limiting their opportunities for personal development and decision-making power.

12. Addressing these gender challenges requires deliberate efforts meant to support a transition towards equal but also equitable representation of women and men in decision-making processes, socioeconomic empowerment programs. It should be noted that efforts to address gender imbalances in Zambia will not only benefit women and girls but also contribute to the overall social and economic development of the country.

Dual Structure of Statutory Law and Customary Law

13. Zambia has a two-tier system of land ownership comprising state and customary land. Even though Article 11 of the Zambian Constitution recognizes equal rights regardless of gender, Article 23 accepts personal as well as customary

[62] JICA. (n.d). Country Gender Profile: Zambia
[63] UN Africa Renewal. (n.d). Fighting gender-based violence as fresh cases continue to emerge: Zambia

law. State land makes up 6 per cent of the country's land, while customary land accounts for 94 per cent. The Lands Act provides support for women with regard to state land, but does not apply to customary land. With regard to customary land, land ownership does not provide women with significant land rights, and even when it does, traditional institutions often do not effectively implement the rules. Customary law entails rules and disciplines which are not written but which are accepted by individual ethnic groups as customs and it varies from one group to another of the 72 ethnic groups in Zambia. As a result, customs which contradict statutory law have created serious problems in terms of socioeconomic activities, including marriage. For example, marriage under the age of 21 is prohibited under statutory law. In reality, however, the practices of child marriage18, marriage in exchange for payment of a dowry to the family of the would-be bride, unfair distribution of property for women and female genital mutilation which is harmful to the body still exist in Zambia today and are tantamount to the non-observation of women's rights.19 Child marriage is a particularly serious problem in Zambia. It is reported20 that 47% of all marriages are child marriages resulting from the traditional custom of male superiority and poverty.

14. This dual structure of law also has implications on property ownership especially land. Although the Land Act accepts the land use rights of women, women in general face an extremely unfair situation in which they are not permitted to manage or own land because of the prevailing emphasis on land use rights based on customary law. Cultural inculcation is also evident with regard to state land, with few women applying for state land; and upon being offered it, a good number relinquish ownership to their male counterparts.

15. Some ethnic groups have maintained the custom of the sexual cleansing[64] of a widow whose husband has deceased. This custom not only violates women's human rights as pointed out in the concluding observations of the CEDAW Committee but also exposes the widows to the risk of HIV/AIDS infection as they may have a sexual relationship with a man whose HIV/AIDS status is unknown. Moreover, divorced men are immune from the responsibility of supporting their former wives andchildren.23 As such, customary law has many negative elements which make women vulnerable. Reform of the dual structure is essential to eliminate such prejudice and discrimination and the current efforts of the government to revise the Constitution is an important step.

Access and ownership of Assets –Land

16. Land is a critical resource to women's and men's participation in agriculture and rural development. In Zambia, like in any other African country, land is a convertible asset, which can be used to access benefits and privileges such as collateral, access to credit and financial markets, agricultural inputs, and decision-making on products of their agricultural labour. Lack of women's access to land and tenure rights reduce their full contribution to the eradication of hunger and poverty. Zambia operates a two tier system of land ownership and distribution. Land ownership can either be through the state and its local government decentralized structures or a customary system, which is administered by chiefs. Access to land, in particular, is fundamental to social and economic development. Zambia's population is predominantly female (50.5 per cent) and youthful (45 per cent). Furthermore, when compared with men, women contribute more to national development through unpaid and agricultural labour. Yet, women and youth have limited access to the critical resources of land and housing, which they need in order to be able to contribute fully and tangibly towards improving their livelihoods, as well as towards the country's social and economic security. Although the government passed the Land Act in 1996 which guaranteed women the possibility of being land owners, the legislation allows for customary laws to dictate land ownership, which mainly confers land ownership on men. Under customary law, men dominate the allocation, inheritance and use of land and women have access to land through male folk, their fathers, husband, brother or son. Women have limited participation in the land allocation processes. Women lack control over land but may have access and user rights to the land.

17. To improve women's access to land, the Land Policy of Zambia was revised to include provisions prioritizing the issuance of state land to women. Women still encounter various barriers the land allocation system notably their low representations in the structures that are responsible for the allocation of land. This inequality in representation promotes male dominance at a structural level. The 'first come first served' method of land allocation has less regard for gender disparities and imbalances, and the unlevelled playfield that exists in communities. With regards to the procedure for land allocation, it is mandatory that the applicant provides proof of capacity to develop the proposed property or business on

[64] In some parts of Zambia, a widow is regarded as "unclean" and there is an accepted practice of making a widow engage in a sexual act with another man for cleansing

the plot of land being applied for. The major proof required includes pay slips and bank statements. The challenge for most females is that they are not in the formal employment sector where they can get pay slips and most of those who run small-scale business or entrepreneur activities do not bank their returns. Therefore, even when they have the capacity to develop the proposed property/business, they cannot provide the required proof and as such they are automatically disqualified from accessing land. The associated high services charges further disenfranchises women and marginalized groups in accessing land. Advertisement for council land is made in newspapers and this eliminates rural women who do not have access to such print media or who are illiterate. Most personnel involved in land administration do not fully know or understand the provision of 30 percent land allocation to women. There is poor sex disaggregated data at the levels of councils, which allocate land. Most laws that relate to land in Zambia are gender neutral and do not provide mechanisms for land to be easily accessed by all sexes (GRZ Ministry of Gender and Child Development (MGCD) 2013).

Literacy and Health

18. **Access to education** The Gender Inequality Index estimates that, between 2010 and 2017, only 39.2% of women aged 25 and older had at least some secondary education, compared with 52.4% in men aged 25 and older for the same period. In high- and middle-income populations, females obtain higher completion rates of lower secondary schooling than males, but in low-income populations this reverses, with an absolute decrease in completion rates[65]. As a result, low-income women (as the majority in rural areas) have lower attainment than men, which may additionally constrain them accessing or being aware of alternative livelihoods, statutory instruments etc. that ultimately reinforce their relative customary subservience**.** The dropout rate indicates the proportion of pupils who leave school without completing a given grade in a school year. Table 6.5 shows that the national dropout rate for primary education (grades 1–7) increased from 1.5 per cent in 2017 to 1.7 per cent in 2018. The dropout rate in primary schools was higher among girls than boys for both years. This indicates that although the enrolment of girls seems to be increasing, at some point these girls are leaving school before completion.

19. **Maternal Mortality:** In Zambia, maternal mortality is one of the contributing factors to mortality. It accounts for 10 per cent of women's deaths in the country[66]. The 2018 Zambia Demographic and Health Survey found that the maternal mortality rate was at 252 maternal deaths per 100,000 live births. This falls short of reaching the national and global targets of reducing MMR to at least 100 deaths per 1,000 live births and 70 per 100,000 live births respectively. Infant mortality as at 2018 was 42 deaths per 1,000 lives, a decline from 73.3 in 2016 but remains high, especially among adolescent mothers (58 deaths per 1,000 live births). This is as a result of poor maternal health services due to lack of skilled providers, pregnancy complications occur, and poor access to emergency obstetric care services[67]. Furthermore, mothers' level of education also contributed to infant and child mortality with lower rates among mothers with higher level of education. For instance, there were 69 deaths per 1,000 live births among mothers with no education, 66 deaths per 1,000 live births among those with primary education, 62 deaths per 1,000 live births among those with secondary education, and 47 deaths per 1,000 live births among those with higher education.

Participation of Women in Decision-Making

20. Zambia ranked 62nd among 146 countries which were surveyed for the Global Gender Gap Index 2022 by the World Economic Forum. In terms of political empowerment which evaluates the situation of women's participation in politics, Zambia ranks 85th. Meanwhile, the Gender Equality Index in a human development report by UNDP puts Zambia at 125th among 160 countries, indicating Zambia's relatively low status in terms of the empowerment of women. One of the main reasons for these results attribute to women's low participation in decision-making.

21. ***Decision Making at Household Level:*** Unequal power relations between men and women, with men being more domineering, remain a significant challenge, affecting how a household, particularly married women, use income for

[65] World Bank. 2016. *Gender Data Portal*. Gender Indicators Report for Zambia
[66] Zambia Statistics Agency (ZamStats), Ministry of Health, and ICF. 2019. *Zambia Demographic and Health Survey 2018*. Lusaka and Rockville, MD
[67] Ministry of National Development Planning (Zambia). 2017. *Seventh National Development Plan*; Ministry of Health (Zambia). 2017. *National Health Strategic Plan.*

empowerment investments. According to the Zambia Demographic and Health Survey, there has been a decline of 10 percentage points in women controlling use of their own income since 2001. In 2001/2002, 41 per cent of women controlled use of their income compared to 31 per cent in 2018. However, during the same period, there was an increase in the percentage of women who made joint decisions with their husbands, from 31 per cent to 51 per cent; providing a possible explanation for the noted decline. It suffices to note once again the influence education level, wealth, and residential area have on determining how partners decide on financial resources. About 73 per cent of women with a higher education level are likely to jointly decide on how to use their income; this is more than those with no education or primary and secondary level education.

22. ***Women participation in rural institutions:*** Women are poorly represented in the leadership of rural institutions and cooperatives. Culture acts directly and indirectly as a barrier for women to actively participate in leadership of rural institutions. In view of the low literacy levels of women and the numerous cultural norms and beliefs especially in the rural areas, the potential for women to be involved in leadership and decision-making is hampered. There is inequitable representation of women in agricultural associations and cooperatives. Cooperatives demand a lot of time for meetings, which women do not have due to a lot of household chores. Moreover, in the case of male-headed households men go for meetings leaving the spouse attending to the home. One of the largest farmers' union membership organization working in agriculture and rural development is the Zambia National Farmers Union (ZNFU) where women's participation is only 38 percent (ZNFU, 2015).

Women, Economy and Agriculture

23. ***Employment*:** Agriculture is one of the biggest employment sectors in Zambia for both men and women, as well as the youth. Like in many SADC and developing countries, women are the main contributors to the agriculture sector; contributing mostly cheap and unpaid labour. Currently, 88 per cent of the workforce in agriculture in Zambia comprises women who are not covered by social security. Only 12 per cent are covered by social security, compared to 23.1 per cent of men. In 2019, there were more men (70 per cent) than women (30 per cent) employed formally, which implies that more women than men are vulnerable to employment shocks in Zambia[68]. The National Agricultural Investment Plan reports that 70% of Zambia's population rely on agriculture for their livelihood and that 78% of women are engaged in agriculture. However, most of these women are involved in crop production for home consumption and their farming activities do not produce any tangible income. Women are unable to gain the same productive conditions as men due to the following issues: difficulties in accessing land, finance and production equipment and materials based on customary law and the idea of male superiority, as well as their responsibilities for household work and child-rearing. The situation is no different for female entrepreneurs, especially those running micro-businesses. An employment survey in 2012 reports that 84% of female employment is in the informal sector and that many female entrepreneurs do not register their businesses. Thus they find it difficult obtaining essential information, and receiving technical training and financing. Moreover, the time constraints they face because of other responsibilities such as household work make it more difficult for female entrepreneurs to scale up the business to increase their productivity or profit. Among the female population in the informal sector, 70% have never received education or have only studied at primary education level (compared to 59% for male workers). It is therefore more challenging for female entrepreneurs to register a business, obtain information, understand the contents of technical training and/or conduct marketing activities compared to men.

***Unpaid family labour*:** According to the Labour Force Survey data (constructed from Central Statistics Office- CSO, 2012), 70 percent of men working in agriculture, forestry and fishing are self-employed (e.g. having their own farms), 23 percent are unpaid family workers (working on family farms), and 7 percent are paid employees (e.g. working on someone else's farm for payment). Of the women working in the same sector, most (59 percent) are unpaid family workers, 39 percent are self-employed, and 2 percent work as paid agricultural employees.

Table 22 Status in employment among those working in agriculture, forestry and fishing

	Paid	Apprentices/ interns		Self-	Unpaid family	

[68] *Source: Ministry of Labour and Zambia Statistics Agency (ZamStats). 2019. Zambia Labour Force Survey.*

	employees		Employers	employed	workers	Total
Men	7.3 %	0.1 %	0.1 %	70.0 %	22.5 %	100 %
Women	1.8 %	0.0 %	0.0 %	38.8 %	59.3 %	100%

Source: CSO: Labour Force Survey data 2012

24. Both women and men in the agricultural sector are mostly working on the family farm, but men are more often considered as the decision- makers and holders of income from the farming business and women more often considered as unpaid work force (instead of co-managers) for that farming business. Although women are provide the bulk of the family labour, in agriculture their labour input is often not costed, neither is it given any economic value. Moreover, women are more often involved in food crops whilst men are involved in cash crops and in marketed household commodities. The labour burden of rural women exceeds that of men, and includes a higher proportion of unpaid household responsibilities related to preparing food, and collecting fuel and water. There is currently no data on time use by women, which could provide a clearer picture of how women spend their time and the contribution of their time spent to the household and national economy.

25. ***Crop production*****:** Globally it has been established that if women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent. This could raise the total agricultural output in developing countries by 2.5–4 percent, with significant contributions to the reduction of hunger and malnutrition (FAO, 2011). In Zambia, women are the major food producers and processors accounting for over 60 percent of the national food stocks. Maize is the main staple food and as such is grown by the largest percentages of female and male-headed households – 86.2 percent of male-headed households and 78.5 of female-headed households (GRZ CSO, 2010). A greater percentage of female-headed households are involved in food production while there is comparatively greater participation of male-headed households in cash crops. An evaluation conducted by FAO[69], shows that although certain crops such as groundnuts are considered as women's crops, when they have an increased market value, men come in to produce and market them.

26. ***Agricultural technologies*****:** Women's use of technologies is concentrated around traditional ways of food processing but once these are mechanized with higher returns, they are quickly taken over by men. Tillage is one of the labour-demanding operations on the farm if it is manually done. Data from Zambia CSO based on a national survey shows that the percentage among female-headed household using conventional hand and hoe tillage system is a high 38.5 percent whilst for men it is 31.4 percent. The data also shows that when it comes to ox-drawn tillage systems where the labour and drudgery is transferred to animals and machinery there is a greater percentage among male-headed households using the method as compared to women. Female-headed households use conventional hand and hoe tillage systems, which is labor-intensive and increases drudgery. The gendered perspectives of women and men in agricultural processes have a bearing on productivity. Data on Table 22 shows that the average harvest per hectare per crop for male-headed households is much higher in some cases even close to double the amount harvested per hectare for female- headed households.

Table 23 Average harvest per hectare (kgs)

	Male-headed hhs		**Female headed hhs**	
	Mean	**Median**	**Mean**	**Median**
Maize	2 053	1 035	1 058	575
Groundnuts	172	96	114	75
Sorghum	264	166	181	132
Millet	272	185	217	154
Rice	624	364	328	202
Sunflower	206	139	132	139

[69] Farmer Input Support Response Initiative (FISRI 2013)

Soya beans	360	196	306	163
Mixed beans	185	108	128	54
Bambara nuts	136	60	81	69
Cowpeas	249	45	96	45

27. This reflects the cumulative effects of production and productivity, lack of productive resources, labour, inefficient tillage systems and drudgery as well as other gender-related factors that have been analysed above. It is a confirmation that if women were to be provided with productive resources, they would increase their production levels.

28. ***Gender and agricultural extension***: Statistics show that there are few female extension officers compared to male extension officers despite the greater percentage of farmers in the rural areas being female. The existing staff demonstrates a weak gender approach to extension services. In general, there is limited access to extension services by both female and male-headed households. Due to the limited number of female extension workers, extension services have failed to address the conditions in which a majority of rural women live.

29. ***Agricultural marketing*: W**omen are often excluded from better markets due to limited access to transport and market information. Women experience more challenges than men in marketing their products, especially food products. Their products are marketed locally and they often get lower prices at the farm gate. Women, compared to men also have mobility constraints. They cannot be away for a long time to market their products because of the numerous household chores. Focus group discussions with female farmers during the FAO supported FISRI evaluation carried out in 2012, revealed that the marketing of maize was a male domain because in the first instance it was difficult for women to negotiate with transporters. In addition, the official government grain marketing system was said to be inefficient since one had to spend a week or more away from home, marketing their produce. This is not convenient for women in view of their numerous gender roles in the home.

30. ***Access to financial services*:** There is limited availability and institutional presence of rural finance options for women and men in the rural areas. Women have challenges in securing loans with banks because most of them do not have collateral to secure the loan. Although this has been the situation, there has been some improvement in women's access and use of financial services.

Gender and climate change

31. Globally there is increasing attention on the differentiated climate change impacts on men and women, and their differentiated capabilities to adapt to these. There is growing evidence demonstrating how the livelihoods of both men and women may be affected differently by climate change, due to culturally established roles such as the gendered division of labour (like caring for children) or land ownership. In Zambia's smallholder agricultural sector, gender-specific climate change impacts and distinct adaptive capacities are evident among different gender groups and sub-groups. Women, who constitute a significant portion of smallholder farmers, face challenges as changing rainfall patterns and increased temperatures impact crop yields and livelihoods[70]. Female-headed households in the smallholder sector may encounter compounded vulnerabilities, affecting their food security and income[71]. Indigenous and ethnic minority women smallholders, often custodians of traditional farming practices, confront disruptions in local ecosystems that affect their agricultural knowledge and practices[72]. Limited access to resources, including land and credit, constrains women's adaptive capabilities in the smallholder sector[73].

[70] FAO. (2020). Zambia - Gender and climate change profile. Food and Agriculture Organization of the United Nations.
[71] World Bank. (2019). Zambia Country Gender Assessment: Economic Empowerment and Human Capital. The World Bank Group.
[72] Phiri, A., Musonda, M., & Hassan, R. M. (2019). Indigenous knowledge systems and climate change adaptation strategies in rural Zambia. African Journal of Science, Technology, Innovation and Development, 11(4), 441-451.
[73] Rosenstock, T. S., Lamanna, C., Chesterman, S., Hammond Jimu, L., Krawinkel, M., & Lefore, N. (2017). What is the potential of agricultural innovations to enhance the resilience of smallholder farmers in developing countries? A systematic review. Environmental Evidence, 6(1), 2.

32. Climate change manifests in floods or unexpected droughts and inconsistent seasons. These changes present challenges to smallholder farmers, particularly female farmers who in most cases are not able to quickly adapt to the changing environment. Climate variability affects women more than men because men migrate to other areas in times of stress leaving women to do all the agricultural roles from production to marketing. Moreover, in view of drought-related climate change variations, women are more affected because they are responsible for the food security and nutrition needs of the family. Further research and analysis on the impact of gender and climate change in the different climatic zones is needed for evidence-based support. Moreover, the depletion of forests due to climate change affects women more than men as women have to walk for long distances to collect firewood. Women spend on average 800 hours a year in Zambia in fuelwood collection (Data from FAO Gender and Forestry website). The depletion of water resources also affects women negatively as they have to struggle to get water for domestic/ household use. In compliance with the Adaptation Fund's Gender Policy, it is essential to implement gender-responsive approaches that consider the differentiated impacts and capacities of various gender groups. This involves integrating gender analysis into climate vulnerability assessments, designing gender-sensitive adaptation strategies, ensuring equal access to resources and information, and promoting women's leadership and participation in adaptation planning and implementation. By recognizing and addressing these differentiated impacts and capabilities, climate adaptation efforts can be more effective, equitable, and sustainable.

Institutional and Policy framework

33. Several measures have been put in place to promote women's empowerment in Zambia. Gender Equity and Equality Act No. 22 of 2015, which is aimed at domesticating international human rights instruments such as the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (adopted in 1979); the SADC Protocol on Gender and Development (2008); and the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (2003). The Gender Equity and Equality Act gives effect to CEDAW and is intended to implement women's empowerment targets that meet the international standards of the SDGs, as well as Zambia Vision 2030.

34. **Zambian Constitution** was amended in 2016 to include critical and progressive articles for gender equality by acknowledging that every citizen, man or woman, has equal rights to participate in, determine, and build a sustainable political, legal, and socio-economic order freely. The Constitution further provides for human dignity, equity, social justice, equality, and non-discrimination among the national values and principles.[5] The constitution further mandate the creation of Gender Equity and Equality Commission to further enhance the protection of women's rights. The mandate of the commission is to promote the mainstreaming and attainment of gender equality. To increase the participation of both men and women in national governance and decision-making, the Constitution provides that nominations to public office must ensure 50 per cent representation of each gender category.[6]The Constitution has further mandated the Human Rights Commission to take necessary steps to appropriately redress the rights of all persons, which includes women, children, and people with disabilities.[7] In addition to the constitutional rights and privileges, and policies earlier alluded to, other policies and strategies, like the

35. **Gender and Climate Change**: GRZ Climate Change Action Plan (2016) addresses the integration of women and gender mainstreaming into climate change policy. The National Policy on Environment (NPE, 2007) includes the guiding principle that "women and men including the youth should play a key role in the sustainable utilisation of renewable natural resources and other development programmes;" as well as a strategy to enhance women's participation in environmental management activities at all levels[74]. Zambia is also regionally and internationally mandated to incorporate consideration of women into environmental planning, and to include them in decision-making processes.

[74] Government of Zambia. 2016. Climate Change Gender Action Plan of the Republic of Zambia ccGAP:ZM

36. **National Child Policy and the Re-Entry Policy** promotes gender mainstreaming to attain equality and equity. The National Child Policy is aimed at promoting and protecting children's rights, whereas the Re-Entry Policy allows re-admission of girls in school after giving birth. Other policies and strategies include: the Adolescent Sexual and Reproductive Health Policy, the Comprehensive Sexuality Education Curricula for In-School and Out-of-School Adolescents, and the Ending Child Marriage Strategy.

Table 24 Gender relevant policies

Policy	Remarks
Gender Policy (2014)	It commits to attainment of gender equality and equity in the development process by redressing the existing gender imbalances. It provides for equal opportunities for women and men to actively participate and contribute to their fullest ability; and equitably benefit from national development. It commits to increased access to and control of productive resources, access to and utilization of information and technology, and mainstreaming gender in policies.
National Agriculture Investment Programme (NAIP) 2014-2018	The NAIP has demonstrated inadequate gender analysis and attention to gender issues. Gender is mentioned as one of the cross-cutting issues. The role of women in food security and nutrition is acknowledged, but the strategies outlined are gender neutral and no gender outcomes have been specified.
National Water Policy (2010)	It integrates cross-cutting issues such as gender, HIV and AIDS and climate change, and introduces modern technologies and principles of water resources management.
National Forestry Act 1998 revised in 1999	The Act notes that there is need to create responsible partnerships with stakeholders and promote gender equitable activities to ensure the performance and stability of forests. It provides for women to be involved in decision-making.
National Food and Nutrition Policy (2008)	It acknowledges the vulnerability of women and adolescent girls to poor nutrition. It recognises issues faced by women and notes and adopts a women's empowerment and gender mainstreaming approach.
Land Act (1996) and Policy	It provides for women's ownership of land, and commits to the allocation of 30 percent land to women with remaining 70 percent for both women and men.
Constitution (1996)	Article 11 of the current Constitution prohibits discrimination based on among other issues, sex. Contrary to this, Article 23 negates this guarantee, by allowing the application of customary law in matters of personal law (marriage, divorce, inheritance, burial, devolution of property on death and other matters of personal or family law). The Constitution review process has removed article 23 from the Constitution.
Revised Sixth National Development Programme(R-SNDP) 2013-2016 (2014	The plan considers gender as one of the important cross-cutting issues in all programmes and sectors. It requires all programme and sector deliverables to mainstream gender, all key output indicators to reflect gender in their implementation plans, and ensure that gender issues are part and parcel of the monitoring and evaluation mechanisms. The MGCD has a coordinating role in gender issues in agriculture, and in providing for gender- responsive programming in the plan (gender mainstreaming, collecting and generating sex disaggregated data).
National Agriculture Policy 2004-2015	It commits to affirmative strategy to improve the economic status of women farmers and to inculcate gender equity in agricultural services

Conclusion

37. The analysis summarized below presents the situation of marginalization of women in Zambian context. GRZ has made some progress in mainstreaming gender equality and women's empowerment in the agriculture and rural sectors although this has been slow. Women continue to face challenges of unequal access and control over productive resources, unpaid labour, drudgery, and limited participation in rural institutions and markets. Considering these elements, gender-responsive interventions aimed at addressing stereotypes generated by social and cultural norms should identify, understand and implement actions to close gender gaps and overcome gender biases. Activities should be based on the application of the gender approach under a "do no harm" approach, so that adaptation measures promote coherent, responsible and ethical action in the face of social action.

38. Therefore, the implementation of activities will acknowledge that Zambia has norms and cultural norms that based on gender, and these influence the interactions and reactions to climate threats and opportunities in communities.

Specifically, as has already been alluded to, the implementation of project activities will consider the fact climate change impacts community members differently because of existing gender inequalities, gender discrimination, social exclusion, asymmetrical access to information, skewed access to strategic decision-making spaces and systemic power imbalances.

39. The implementation of activities will therefore offer practical measures to ensure gender inclusion on a continuum – and consistent with the AF Gender Policy, CALRF will reflect:

40. *Gender awareness*: CALRF has engaged different stakeholders who have included women, men, young and old, including the differently abled. By this openness to engaging different stakeholders, the project acknowledges and recognises differences in socially assigned gender roles, rights, entitlements, responsibilities and obligations while accommodating and working around existing gender norms. That community members can participant in the project, irrespective of their gender, CALRF raises awareness about deliberate efforts about different gender roles, rights etc.

41. *Gender balance*: CALRF has been designed to respond to different socio-cultural contexts in the target areas to ensure gender balance – that is, an equal representation of both women and men in decision-making structures and among staff in the different levels of organizational structures.

42. *Gender equality*: The project will be deliberate about efforts to ensure equality between men and women as beneficiaries of project activities – premised on the acknowledgement that girls and boys, but also women and men should have the same responsibility to take care of natural resources, but also the same right to access and to use the resources, CALRF will be implemented with equal consideration of their respective interests, needs and priorities of men and women, boys and girls. By deliberately involving men and women to work together in building individual and community capacities, CALRF will provide an opportunity for men and boys to fully engage in promoting gender equality and in changing gender roles that keep women subservient.

43. *Gender equity*: As has been described in this gender assessment in Zambia, CALRF recognizes the need for differential treatment of women to contribute to the undoing of biases or historical or social disadvantage or power imbalance against women due to the fact of being a women or a man. In this regard, CALRF will aim to be fair and just taking into account the different needs of women and girls, men and boys, cultural barriers and (past) discriminations against women.

44. *Gender gap*: By recognizing the need for gender equality and equity, CALRF acknowledges that there are conditions of disparity and inequality between women and men's condition or position or role in Zambia, including in the target provinces. The gender gap in is terms of their participation, their access to opportunities, rights, power to influence and make decision, incomes and benefits, and control and use of resources. By engaging both men and women, CALRF has been designed to contribute to closing this gender gap.

45. *Gender mainstreaming*: As detailed above under gender gap, gender equality and equity, and gender balance, CALRF will be implemented to promote gender equality. The implementation of project activities will duly assess the implications for women and girls, men and boys of any planned action, including legislation, policies or programmes. Irrespective of gender, CALRF will continue to make the experiences and concerns of all people an integral part of the design, implementation, monitoring and evaluation of project activities so that different gender groups benefit equally, and inequality is not perpetuated. CALRF notes that the ultimate goal of mainstreaming is to achieve gender equality. In the project's gender mainstreaming effort, the project will be responsive to remain alert to gender norms, roles and relations – including contributing to addressing inequality generated by unequal norms, roles and relations through changes within a given social setting through remedial action in the target districts. In this regard, CALRF will be sensitive and consider gender norms, roles and relations by unequal norms, roles or relations and help through remedial action beyond creating gender awareness, as mentioned above.

46. *Gender transformative*: It should be noted that CALRF's interventions are for the direct benefits of communities in the target districts. In the design of the project, the results framework includes gender responsive indicators to hold

the project itself accountable in its contribution to transforming gender. The project will actively strive to examine, question, and change rigid social and gender norms, cultural values and to address power inequalities between persons of different genders and the root causes of gender inequality and discrimination. The goal of this approach is to transform adverse gender norms and power dynamics into positive ones, thus accelerating achievement of gender equality.

47. *Women's empowerment*: CALRF will use processes by which women gain power and control over their own lives and acquire the ability to make strategic choices through an expansion of agency throughout women's lives, especially via participation and decision-making. Thus, supporting different activities, for example, CALRF's support will increase: i) women's awareness and sense of self-worth and rights; ii) women's right to have and determine choices; iii) women's right to have access to opportunities and resources; iv) women's right to have power to control their own lives both within and outside the home; and v) women's ability to influence the direction of social, political and economic change to create a more just social, political and economic order, nationally and internationally.

48. It should be reminded that CALRF's will be deliberate about gender inclusion in light of the aforementioned gender integration levels and approaches. The project will track the gender aspects of the project through the following elements which have also their targets in the results framework:

49. Number of beneficiaries (direct and indirect).

50. Number of hectares under adopted sustainable agricultural practices (including procuring more productive and drought-tolerant seeds) aquaculture; crop diversification.

51. Number of people directly reached during awareness-raising for evidence-based resilience and adaptive capacity building

Recommendations

52. In view of the differentiated vulnerability of all beneficiaries in the project area to the interlinked challenges of climate change, it is critical to address the developmental needs of increased drought, access to water, low productivity, land degradation and gender discrimination. This will help develop and implement a more enabling and gender-transformative environment for addressing climate change. Women face specific barriers to their basic needs and persistent patriarchal attitudes that limit their options. Given their increased vulnerability to climate change, the project will aim to (i) promote economic empowerment; (ii) enable women and men to have an equal voice and influence in rural community-based organisations; and (iii) achieve a more equitable balance between women and men in the distribution of work and economic and social benefits. The project will challenge social norms that perpetuate inequalities between men and women through implementation of household approaches. A targeted gender-sensitive diagnostics will be conducted in targeted communities prior to implementation as one of the first actions of the project to identify contextual gender gaps and inequalities and inform the development of a gender sensitive strategy. The specific recommendations include:

53. Increase women's voice in decision-making at the household and community level. As part of literacy and life skills, leadership training will also be included. Women will be trained to form groups and their leadership and negotiation skills will be strengthened to enable them to make informed decisions during the community planning process.

54. Establish participation quotas to reduce the existing gender inequality and promote social inclusion of women by including at least 50% participation of women, 30% of the youth population (men and women) and 5% of the persons with disabilities focusing on capacity building and women empowerment, adoption of climate adaptation practices, promotion of leadership in local organizations. Participation should, consider women's time constraints to ensure activities are carried out in accordance with their available schedules.

55. Develop gender-sensitive training programs on sustainable agriculture, climate risk management, and microfinance which include specific modules on gender equality, in order to raise awareness and strengthen ownership. Additionally, gender-awareness trainings (including Gender-based Violence – GbV) will be mainstreamed into all training to men and women will be carried out at both household and community levels, including village leaders.

56. Adaptation measures in agricultural plans should include activities that respond to women's needs and that can also be implemented using their own capacities and resources, such as raising small species, home gardens, food processing and others.

57. Define gender-specific mechanisms and agreements with financial service to improve service outreach and facilitate effective and timely access to financial products and services. This will include the provision of tailored advice and training, including financial literacy and creation of simplified credit lines for crop insurance to strengthen the knowledge and capacity to respond to climate risks to the communities in the intervention areas.

58. Support the government, in collaboration with private sector and civil society stakeholders in driving the gender agenda in the agricultural and rural sectors. This involves strengthening partnership and collaboration on gender equality programming and implementation between Ministry of Agriculture and Livelihoods, Ministry of Lands, Forestry department, MGCD and organizations working on women's leadership and participation in rural institutions (ZNFU), rural savings and lending, financial inclusion etc

59. Develop initiatives for the economic empowerment and ownership of women such as diversification of livelihoods, vegetable gardens, poultry farming, food processing companies, community gardens, building market alliances and networks.

60. Incorporate measures and actions that reduce the domestic burden on women and girls and improve their participation in income-generation activities and decision-making instances, at household and communities level. These measures would include time-saving technologies

Table 25 CALRF Gender Action Plan

Outputs/Objectives	Activities	Performance Targets/Indicators	Responsible	Timeframe
Component 1. Enabling environment at national and community levels to secure the uptake of livelihood options				
Output 1.1. National and district-level extension agencies are capacitated to support uptake of resilience measures and sustainability of Grant Facility	Activity 1.1.1 Development of recommendations report and update of relevant sectoral training manuals and technical guidelines	Training needs assessment for women conducted Gender Strategy for extension service delivery	PMU gender specialist,	Y1
	Activity 1.1.2. Delivery of training and capacity building for national extension services	Training sessions are organised to accommodate women's schedules and responsibilities (450 women trained) Training manuals include gender-sensitive lens on specific needs and vulnerabilities of women stakeholders engaged in agriculture	PMU gender specialist, and hired Gender TA	Y1
Output 1.2. Communities are aware and have capacity to trigger behavioral change to support the uptake of resilience measures	Activity 1.2.1. Conduct consultations with communities and traditional leaders to collect information on needs and priorities for district-level adaptation planning	Consultation agenda and items to be discussed include GBV and gender-responsive adaptation Gender-sensitive priority adaptation options are identified and documented for district-level adaptation planning tools (5,000 women participants)	PMU gender specialist, and hired Gender TA	Y1

Outputs/Objectives	Activities	Performance Targets/Indicators	Responsible	Timeframe
	Activity 1.2.2. Awareness raising and delivery of training to communities and traditional leaders based on updated information in training manuals, technical guidelines	Training sessions are organised to accommodate women's schedules and responsibilities At least 30% of training beneficiaries are women (750 women) 50% of selected Training Champions are women (50 women)	PMU gender specialist, and hired Gender TA	Y1
Output 1.3. Supply of locally-adapted resilient seeds and fish fingerlings and feed is established	Activity 1.3.1 Support to resilient seed production at the local level through the creation of demonstration plots and training of farmers	6,250 women have access to locally adapted seed 50% of community seed banks are managed by women (12 seed banks)	PMU gender specialist, and hired Gender TA	Y2-Y5
	Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations	N/A	N/A	N/A
Output 1.4 Improved market access through crossing points rehabilitation and construction	Activity 1.4.1 Rehabilitation and construction of four culverts to enable rural communities to access aggregation centers, inputs, social services and markets especially during and after extreme weather events	6,510 women have improved access to aggregation centres, inputs, services and markets	PMU gender specialist, and hired Gender TA	Y2-Y5
Component 2. Provision of finance and technical assistance for the diversification and sustainability of livelihood options				
Output 2.1 Grant Facility is established and operational to finance resilient sub-projects in the aquaculture, capture fisheries and agriculture sectors	Activity 2.1.1 Establishment and operationalization of the Grant Facility	Gender-sensitive outreach document developed to ensure access to GF from women	PMU gender specialist, and hired Gender TA	Y2-Y4
	Activity 2.1.2 Launch of awareness campaign and call for expression of interest	Awareness materials developed to target women beneficiaries Specific sessions organized to target women during expression of interest workshops to ensure at least 30% of grantees are women	PMU gender specialist, hired Gender TA	Y2-Y4
Output 2.2 Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects	Activity 2.2.1 Pre-grant support to candidate grantees to develop viable, context-appropriate sub-projects in the selected sectors	30% of potential grantees are women (660 women)	PMU gender specialist, hired Gender TA	Y2-Y5
	Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects	30% of grantees are women (58 individual grants and 7 community grants)	PMU gender specialist, hired Gender TA	Y2-Y5
Component 3. Enhancing knowledge management for evidence-based adaptation planning				
Output 3.1. Creation of a Knowledge Dissemination and Management Strategy (KMS) to sustain the uptake of climate-resilient fish and agricultural production	Activity 3.1.1. Deployment of tools and communication channels to enhance availability and access to climate information at the community and national levels	21,700 women have enhanced access to climate and weather information	PMU gender specialist, hired Gender TA	Y2-Y5
	Activity 3.1.2. Organisation of knowledge exchange platforms	30% of participants are women or women-headed community groups	PMU gender specialist	Y2 – Y5

Outputs/Objectives	Activities	Performance Targets/Indicators	Responsible	Timeframe
		Knowledge exchange platforms agenda include discussion points on gender-sensitive adaptation measures in the three target sectors, economic empowerment of women and access to financing Workshop reports include gender-specific outputs and action items		
Output 3.2. Long-term and locally led adaptation planning is secured	Activity 3.2.1. Development of 15 strategies at district and community-levels to incorporate climate change priorities and support capacities for implementation	Identification of gender-sensitive climate change vulnerabilities and priorities (building on Output 1.2) for district level adaptation planning	PMU gender specialist, hired Gender TA	Y4-Y5

a. HR = human resources, PMU = project management unit, Q = quarter, TA = technical assistance

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Annex 3 ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS ANALYSIS

Annex 4: Community consultations

Community consultations in Central Province for CALRF Project Development

ZAMBIAN RAINBOW DEVELOPMENT FOUNDATION
PLOT No. MASANSA-FIWILA ROAD P.O. BOX 840037 MKUSHI
ZAMBIA

Stakeholder consultation for the development of Climate Change Adaptation of Livelihoods through Rural Finance project funded by the Adaptation Fund

Contacts Person: Brandy M. Mungaila
i.Director
ii.ZRDF, Mkushi
iii.Central Province of Zambia
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Summary

The objective is to solicit and get views from beneficiaries in different communities on climate change adaptation financing programme. The information will be used in the proposed design of the new programmes.

Introduction

1. The Zambian Rainbow Development Foundation (ZRDF) is an organisation working in Luano and Mkushi District. The organisation has four thematic areas: livelihood and food security, Economic Empowerment, Education support and Health support. The organisation promotes community-led and owned development project and uses participatory approaches in all of its interventions.

2. ZRDF working in collaboration with RUFEP conducted focus group discussions with communities in central province with an objective engage and create a platform for community members to share their views on the Climate Change Adaptation of Livelihoods through Rural Finance (CALRF) project under development. CALRF has been approved for funding by the Adaptation Fund. It has been designed around three components, namely: Component 1: building and promoting diversified, resilient and sustainable community livelihood options; Component 2: Supporting innovative local financing systems to build community adaptive capacities in climate sensitive sectors; and Component 3: Enhance district-level planning and awareness-raising for evidence-based resilience and adaptive capacity building.
3. Views expressed in this report have been used to inform the preparation of CALRF project. Therefore, community voices are reflected in the project. In this way, CALRF has community input, activity prioritization, project ownership and it sustainability.

Methodological approach

4. In order to get information on climate change adaptation, a focus group discussion were organized. The approach was adopted because it is participatory and captures in-depth information from participants.

Demographics of participants

5. The demographics comprised of women, men and youths. Women were 19 and men were 14, of which 10 were youths (5F, 5M). Below is a summary of participant's demographics.

Women	Men	Youth		Differently-Abled	Total
19	14	F: 5	M: 5	0	33

Findings - people perspectives

Occupation

6. Residents of the communities are majorly small scale farmers who grow maize, soya beans and have vegetable gardens. They rear livestock such as cattle, goats and chickens. A few are marketers while others run businesses such as tailoring, selling of second hand clothes, selling of food staffs and groceries.

Pressing Challenges in order of Priority

7. The communities have almost similar challenges due the fact they rural in nature. Firstly, lack of access to clean water. Water is drown from wells and streams. Secondly, poor/infertile land for agriculture. This has been generally attributed to poor methods of land preparation for farming such burning fields. Thirdly, lack of community clinics for proper medical attention in all the communities. Thus, services are accessed at the nearest community with a facility. Fourthly, school infrastructure especially teachers houses at communities with schools while communities without emphasis building a classroom block. Lastly, poor road network and infrastructure, which hinders communities access to markets especially in the rain season.

Addressing the challenges (Solutions)

8. In addressing the challenges the communities resolve is to accessing funds and as a community to raise necessary resource. Thus, sinking communal hand pumps is an immediate and feasible solution to have access to clean water. Practicing conservation farming, crop rotation and avoiding burning of fields during land preparation improves soil fertility for agricultural practices. To mitigate inaccessible health services, at community level building of a structure to serve as health post is ideal with at least one health personnel. Build a community school in which communities can organise material such as bricks.

Factors Hindering from addressing the challenges

9. The communities have factors that are internal and external however, internal factors are significant. External factors are lack of support from Government Ministries and District offices. While internal, include lack of good community leadership and trust in the leaders, limited cooperation among community members and lack of knowledge on how to apply for funding such as Constituency Development fund.

Access of Inputs through Cooperatives, Others or Shops

10. Existing cooperatives usually benefit a few people and only help with supply of animal feeds. However, farming inputs are bought from shops at the distant markets.

Price Increments in recent years

11. Prices of inputs have been on the raising side. Currently, prices are the highest they have ever been. This is further exaggerated by distance farmers have to travel to access the market for the inputs.

Effects of Increased prices of farming Inputs

12. Firstly, farmers have no autonomy in setting prices for their farming output, the buyers dictate the prices. Hence, selling prices have been on the lower side leading to significant losses. Secondly, reduced farming capacity due to low returns from sells coupled with high input prices. (E.g., famer reduced farming land from 11 ha to 6 hectares).

Thirdly, household savings have reduced significantly affecting their livelihood and have resorted to unsustainable practices of charcoal burning.

When changes in prices

13. Changes in began being unstable from 2016 and are increasing until date. For example, a farming implement such a plough was bought K1300 in 2019 and in 2021 was being bought for 2400.

Aspects of Natural resource men are interested in more than women and vice versa.

14. Men are mainly interested land for farming settlements and rearing livestock such as cattle. Further forest are of interest for mainly production of charcoal by cutting down trees. Water source are mainly for fishing. Women are mainly interested in water sources as streams for their gardening activities of growing vegetables.

Use of Natural Resources by Men and Women

	Land	Water sources	Forests
Men	Farming settlements,	Fishing	Bee Keeping, Charcoal
Women	Farming	Gardening	Firewood
youth	Farming	Moulding bricks	Charcoal, hunting

Traditional practices and customs the regulate men and women access and use natural resources.

15. There no significant practices and customs to access of natural resources however, their trends of men owning more land than women. Men argue biblical concepts still give them more authority over natural resources.

Observed changes in temperature and rainfall pattern.

16. Rainfall patterns have changed. Currently rains are delayed to start and usually amounts vary each season. Temperature changes are evidenced by higher temperatures in the hot season.

How changes in temperature and rainfall pattern are affecting livelihoods activities.

17. Heavy rains destroy properties and crops. Further delayed rainfall disturbs the seasonal farming cycle. Diseases prevalence is high of Malaria and Diarrhoea.

How changes affect Women, differently-abled and youth.

18. These people are affected more compared to men because of lack empowerment to survive the harsh conditions. Agricultural activities of women are disturbed when streams dry up fast and youths have no sources of water for brick moulding.

How changes affect Health (especially malaria or diarrhoea)

19. Pregnant women are affected by heat exhaustion. There is an increase in people complaining of Blood pressure symptoms. Malaria cases are also dominant coupled with diarrhoea due to temperature changes.

How changes affect livelihood options (people migrating to urban areas)

20. On the contrary, people are migrating to rural areas to be farmers. People only move to settlements within the same location to continue farming.

Benefits from building and promoting diversified, resilient and sustainable community livelihood options.

21. Livelihoods of most communities are agricultural dependant, thus, most benefits accrued are based on conservation the environment to avoid harsh weather conditions, increased nutrition at household level, minimised farming losses due to improved soil fertility.

Benefits from local financial service providers to build community adaptive capacities in climate sensitive sectors.

22. Corporate social responsibility through planting of trees and promotion of sustainable agricultural activities. Access to micro-financing to small scale farmers to adopt better farming methods and increase their production capacity. Further, benefits would be provision of insurance to farmers with equipment their yields. Lastly, benefits of knowledge on financial literacy and saving to the communities.

Benefits from enhanced district-level planning and awareness raising for evidence-based resilience and adaptive capacity building.

Benefits are capacity building in climate change through agricultural extension officers to promote conservation farming.

Role played in building and promoting diversified, resilient and sustainable community livelihood options.

23. Community cooperation and participation.

Role played in financing build community adaptive capacities in climate sensitive sectors.

24. Community mobilization can be conducted to help in financing, especially material contribution from local resources.

Role played in enhanced district-level planning and awareness raising for evidence-based resilience and adaptive capacity building.

25. Adoption of various initiatives that are put in place in the communities. This entails acceptance and ownership of various initiatives.

Recommendations

26. Based on the views and responses from the participants, the following highlight key areas of interest to community members:

27. The unequivocal need to continue community engagement through participatory approaches – and this includes during actual project implementation to ensure benefits directly accrue to communities. This will facilitate community ownership of the project and its sustainability.

28. Important government ministries and non-government actors that are more immediately related to community needs (such as Agriculture, Forestry, Community Development and Financial Service Providers) need to be more present in communities to provide the much-needed technical capacity to communities. These will also be critical in rolling out the project activities during the implementation phase of the project.

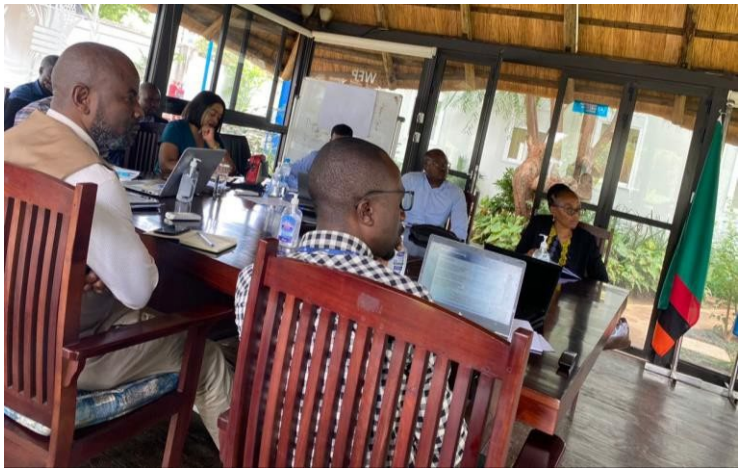
Conservation agriculture, the use of bio-fertilizers and soil management practices, access to clean water and sanitation and awareness campaigns on climate change and mitigation, links to markets are some of the critical areas the cut across all the districts needing urgent support to the communities.

Annex 5 Consultations with various stakeholders

In pictures, various consultations conducted in CALRF's target districts.

The first picture, featuring a clear blue sky, depicts a landscape in a CALRF-target district of Southern Province, located in an eco-zone with the lowest annual precipitation levels in Zambia. This image showcases land degradation and the seasonality of water sources for both human and animal consumption. The limited socioeconomic resources for coping with and recovering from flash floods, zoonotic outbreaks, malaria, and other shocks are also evident. Crop and pastoral production landscapes in Southern Province generally share these characteristics, as seen in this image.

The second picture illustrates a national-level stakeholder consultation in Lusaka, involving various players such as representatives from bilateral and multilateral development partners, as well as government officials, including the Director DPP from the Ministry of Agriculture, in attendance.



i.*Attendance lists of various stakeholders consulted in CALRF's target districts*

ADAPTATION

CLIMATE CHANGE ADAPTATION MEETING

Stakeholder Consultation Exercise - Nchelenge District

Attendance Register

Date: 16/11/2022

S/N	FULL NAMES	NRC	MOBILE NUMBER	SIGNATURE
1	MUKUPA FRANK C	153637/35/1	0763179995	
2	JOSEPH KAPESA C	179644/35/1	0967873435	
3	BESA FIELD	305150/33/1	0776887103	
4	CHISHIMBA JACKSON	100766/35/1	0968782404	
5	CHITIOSHI MESCHDA	294488/33/1	0969561961	
6	PULE MOSES	167994/35/1	0762349887	
7	Elijah Chola	205381/33/1	0979013173	
8	MUKUPA CHITEMA GEOFFERY	198404/35/1	0976-26-3027	
9	Mlache dorius	102954/35/1	097545034	
10	KABULA SEISON	206299/33/1	0979279492	
11	BEDFORD CHIYAMBI	155688/33/1	0978523094	
12	NSAMA CHRISTINE	239900/33/1	0978505813	N. C.
13	HENRY CHITALU	112463 31 1	0967742464	
14	KABASO COSMAS	276462/33/1	0978663734	
15	Maxwell Munkonta	290132/33/1	0974736804	
16	Katwishi Kelvin	261524/33/1	0974419458	
17	KAPUTA PATRICK ~~NSAMA CHRISTINE~~	46263/33/1 ~~239900/33/1~~	0971834304 ~~0978505813~~	
18	SWABA FACKSON	195914/33/1	0961035733	
19	KANGWA MORIS KASOMA	246457/33/1	0772228770	
20	MUSONDA TIMOTHY	206700/33/1	0979797370	
21	NKOLE DAVISON	108755/30/1	0770685533	NDK
22	KAWAMA AMOS	298211/33/1	0768353855	
23	Kolunda Julius	102662/33/1	0771134349	
24	NGWDE John	103837/35/1	0974682907	
25	MWEWA JUSTINA	186885/64/1	0974706726	
26	BWALYA THRESSA	289184/33/1	0965824284	
27	CHISHALA JUDITH	187181/33/1	0979615446	C.J.
28	LIKOLBE GLADYS	305623/33/1	0976478658	G. Likonde
29	MUHOWE MIRRIAM	116295/34/1	0964622009	muhowe
30	MWAPE EVERLYNE	211921/64/1	0977982016	E. mwape
31	MWENYA JOICE	154402/35/1	0972097265	J. mwenya
32	MWILA LUCY	152864/33/1	0975522881	
33	BARBRA CHISANGA	160511/35/1	0974876648	B. Chisanga
34	MARI KORI			M ARI
35	MPUNDU CARREN	185418/35/1	0771133003	C. mpundu
36	LUPUPA MONICA	26/27/26/33/1		L. mpa
37	CHARITY CHILUBA	151291/33/1	0976443465	C. C.
38	Chanda Jacob	196831/16/1	0966411077	

Adaptation Fund (AF) Proposal Design Mission

Stakeholder Consultative Meeting at IFAD Country Office

Date: 11/11/2022

Attendance List

	Name	Organisation	Designation	Email address
1.	PEGGY MLEWA	MOA PPD	DIRECTOR PPD	peggy.mlewa@agriculture.gov.zm mlewapeggy@gmail.com
2.	Douglas Dawa	GIZ	Snr Advisor	douglas.dawa@giz.de
3.	Ivonald Da Cruz	IFAD	Programme Management Specialist	i.dacruz@ifad.org
4.	M SABHARA	IFAD	CONSULTANT	M.SABHARA@IFAD.ORG
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8.	Nelson Lukhele	MoFNP	Economist	nelson.lukhele@mofnp.gov.zm nelsonlukhele@gmail.com
9.	Habeenzu Simamba	RUFEP	PSO	Habeenzu.Simamba@rufep.org.zm
10.	Emmanuel Gondwe	WFP	PPO	emmanuel.gondwe@wfp.org
11.	AFIA NKRUMAH	IFAD	Consultant	a.nkrumah@ifad.org
12.	Lucia Rakotovololona	IFAD	consultant	l.rakotovololona@ifad.org
13.	Bernard Mumba	MoA	Chief Agricultural Economist	bernard.mumba@agriculture.gov.zm
14.	Michael Mbuto	RUFEP	Programme Coordinator	michael.mbuto@rufep.org.zm
15.	Albert Chalamba	IFAD Consultant	IFAD Consultant	chalambas@yahoo.co.uk
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ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2022	Community/Stakeholder Consultative Meeting	Southern	Monze (Njola)

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1.	LUMBA MAAMBO	206340/77/1	M	1995	Kayumba Kaumba	0770181315	
2.	MIZINGA MWAKA	120165/77/1	M	1980	KAYUMBA KAUMBA	0974508891	
3	JONATHAN DINDE	192692/77/1	M	1991	HANAMOONGA	0953677341	
4	Enock miyobo	215681/11/1	M	1965	Chelo	0975251095	
5	Muleya Oliver	186685/77/1	M	1983	Hanamoonga	0954812128	
6	TEDY MWIINANGA		M	1981	HAMOONGA	0954308377	T-m
7	MAFRED HANYANGA	"	M	1993	HANAMOONGA	0950449218	

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2022	Community/Stakeholder Consultative meeting	Southern	Monze (Njola)

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	Sidel chabuka	216440/77/1	Male	1998	Chuuka	0777783997	S. Chabuka
2	Gretrude nkoloha	128523/77/1	Female	1972	Himikata	0972681103	g. nkolola
3	milla malambo	253358/77/1	Female	2002	Himikata	0779898790	m. malambo
4	OBVIOUS MALAMBO	188520/77/1	Female	1990	MALOMO	0976568616	O. malambo
5	mildred nkolola	184879/77/1	Female	1988	chuuka	0954292194	M. nkolola
6	maxene chisikwa	132581/77/1	female	1984	simaremba	0976400627	M. chisikwa
7	Loza mihundu		Female	1974	Chuuka	0975144227	L. mihundu
8	Opara malambo	216566/77/1	Female	1999	Himikata	0971774284	O. malambo
9	Size Hangubo	254975/77/1	Female	2003	muinga	0975312583	S. Hangubo
10	Maureen Hadenta	298129/77/1	Female	2002	Chuuma	0976836488	M. Hadenta
11	PRECIOUS MOONGA	130528/77/1		1982	Malambo Moonga	—	P. moonga
12	MATIMBA MUCHOPA		Female	2003	Himikata	0779376666	m. muchopa
13	Chabota chiyanika	131418/96/1	female	1995	Cuka		c. ciyanika

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2022	Community/Stakeholder Consultative Meeting	Southern	Monze (Njola)

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	Makakaanga mutinta	148938/77/1	F	1971	Chuuka	0974949431	
2	Mukkuli Janet	147706/74/1	F	1949	Chuuka	0971877629	J. Mukuli
3	mutinta mwaka	173382/77/1	F	1986	malambo kaluma	0978622672	M. Mwaka
4	Prenia mweemba	188596/77/1	F	1990	malambo kalima	0977221688	P. mweemba
5	mildred moonga	330625/77/1	F	1980	mainga	0978852300	
6.	Mutinta mweene	202131/77/1	F	1994	Handomes	0772990445	
7	Mangret BUSIKU	251622/74/1	F	1966	HIMIKata	0950146796	M Busiku
8	CooLwe Hamulili	240049/77/1	F	2002	HandomeA		c. Hamulili
9	mary Mazuba	246681/77/1	F	1965	Hazala	0772814520	M. Mazuba
10	OZILLY LUUMBO.	216660/77/1	FM	1996	CHiyoma	0971860265	luumba
11	JUNIOR moonga	216661/77/1	M	1997	CHiyoma	0971137473	moonga

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2022	Community/ Stakeholder Consultative meeting	Southern	Monze (Njola)

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	Peggy Sichoya	132578/77/1	F	1974	Nalwinga	0975968252	P. Sichoya
2	Majory Michelo	159143/77/1	F	1984	Chilupa	0975267714 0779333899	M. Michelo
	Mwinza K Siboene	223146/77/1	F	1980	Potuko	0779333899	M. K. S
	Fines Malumbo	157784/77/1	M	1982	Nalwinga	0999109698	[illegible]
	Catherine Chiwala	227951/77/1	F	1995	Kalwinga	0972813618	C. Chiwala
	Christine Mweemba		F	1956	Chuuka		C. M
	[illegible] Mukamba	179681/77/1	m	1990	[illegible]		[illegible]
	Kelvin [illegible]	251674/77/1	m	2000	Tambo		[illegible]
	HACKMAN NAMWEENE	216456/77/1	M	1996	Mowka	0972346883	[illegible]
	Evidence Mwiinga	213018/77/1	m	1995	Hachoonga	0770222960	[illegible]

Date	Activity	Province	District
17/11/2022	Community/ Stakeholder Community Consultative meeting		

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	Ntew Christine	251231/76/1	F	1960	Mweemba		C. Ntew
2	Sakala Susan	163554/77/1	F	1979	Malambo	0777183207	S. Sakala
3	Chifwale Christabor	213617/79/1	F	1961	Hachangu	0972408317	C. Chifwale
4	Mufwidakule Hedor	387049/79/1	m	1992	Kaumba	0977250600	[illegible]
5	Adam Mwiinga	251355/76/1	F	1966	Hacwemi	0977182328	[illegible]
6	Constance Mweemba	171929/77/1	F	1991	Sikaulu	0972066661	[illegible]
7	Busiku Pious Mwiinga	192474/74/1	m	1953	Cheelo	0972277657	B. P [illegible]
8	Gift Halub	380404/74/1	m	78	Mahabi	0971017384	[illegible]
9	Mathias Chibombo	155362/79/1	m	31yrs	Hachoonga	0776390966	[illegible]
10	Evidence Mwiinga	213018/77/1	m	1995	Hachoonga	0770222960	[illegible]
11	NCHIMUNYA LWANDO	303399/77/1	M	1993	HACHOONGA	0978402084	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2022	Community/ Stakeholder Consultative Meeting	Southern	(Njola) Monze

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	JOHN RENNIE MWENGA	167185/74/1	M	1969	MANSA	0950073668	[illegible]
2	Chigalula Hamatende	2106/77/1	m	2000	Hinzikata	0772563822	[illegible]
3	MWIINGA HAMATENDE	192640/77/1	m	1994	Himikata	0974564934	[illegible]
4	Michelo Mwiinga	214278/77/1	m	1997	Hazanka	0972060942	[illegible]
5	Teddy Malambo	250322/74/1	m	1964	Mpokota	0772563912	[illegible]
6	Conrad Milundu		m		Chuuka		C. Milundu

Approved by: STEPHEN · MUMBI Signature: [illegible]

ATTENDANCE REGISTER ~~GLOBAL~~ ADAPTATION FUND STAKEHOLDERS MEETING ON 17/11/22 IN SESHEKE DISTRICT

Nu	NAME	SEX	ORGANISATION	NRC	SIGNATURE
1	KENNEDY MUNOIA	M	C.R.D.F	267567/73/1	[illegible]
2	NOSIKU SIMALOYA	M	MAFISA	127248/85/1	[illegible]
3	MUBUKA KACHANANA	F	EDUCATION	259652/82/1	K. Mubuka
4	MWAKA SITUMBEKO	F	MAFISA	155712/85/1	[illegible]
5	Kalandwa Nasilele	M	Mafisa	221821/82/1	[illegible]
6	S. NAMUNJI LUKUKU	M	INDUNA	101144/83/1	S.N.L
7	SIBALWA EVANS	M	EDUCATION	122830/97/1	[illegible]
8	Mubita Liswani	M	Farmer	168201/85/1	ML
9	Matakala Inyambo	M	Farmer	158649/85/1	[illegible]
10	Lisulo Mubuka	M	Mafisa	184575/85/1	[illegible]
11	Priscillah N. Kafulo	F	Mafisa	156107/85/1	N. Kafulo
12	Matakala M	F	Mafisa	194657/85/1	[illegible]
13	CHEBINDA MUYEBA	m	councillor	173421/85/1	[illegible]
14	MWANIKA TREVOR	M	Agricultural Assistant	114489/79/1	[illegible]
15	Mubita Honest Matakala	M	EDUCATION	265933/82/1	H. Matakala
16	Brodrick Lumano Sakayuwa	M	FARMER	152063/85/1	B. Sakayuwa
17	Simumbo Muyunda L.	M	FARMER	111884/85/1	[illegible]
18	PHILLIP SIMATAA SANSANI	M	FARMER	132002/97/1	[illegible]
19	MWELWA EVARISTO	M	Education	289826/33/1	[illegible]
20	Ilalabani Katiba	m	farmer	133209/85/1	Katiba
21	MUKULUKWA SIMASIKU	M	FARMER	136853/85/1	[illegible]
22	Malomola Maboshe	F	farmer	105173/85/1	M. Maboshe
23	S. Masiye Kafungele	m	Farmer	134444/85/1	[illegible]
24	Margaret Nyambe	F	Farmer	111937/85/1	M Nyambe
25	Monde Likokoto	F	farmer	216625/85/1	[illegible]

Requested by: O. SIBUKU Signature: [illegible]

Approved by: STEPHEN · MUMBI Signature: [illegible]

July 2025 - Meeting with Ms Brenda Lusuko Simainga and the Designate Authority Mr Billy Katonga at the Ministry of Green Economy and Environment.

Following the AFB 44 decision to increase the single country project budget allocation from USD 10 Million to USD 25 Million, consultations were had with the Ministry of Economy and Environment on further enhancing the climate resilience of the CALRF project. It was identified that the project districts suffer from flooding due to extreme weather events due to climate change making crossing points inaccessible to rural communities cutting off their access to aggregation centers, inputs, social services and markets especially during and after extreme weather events such as floods. To help rural communities adapt to these extreme weather events, the project will aim to construct 6 to 12 meter culverts in reinforced concrete in one critical location in five of the already identified districts namely Luano, Sesheke, Kazungula, Monze and Kalomo.

To achieve this the proposal has added an output 1.4 under component 1 with an additional USD 250,000 per crossing for a total of USD 1,250,000. With the increase in PEC as well as IE fee the project total was increased to USD 12,655,103.

In view of the increase project envelope for single country projects the Designated Authority requested that the budget for output 2.1 be increased by USD 750,000 to allow for great effectiveness by increasing the number of individual grants from 195 to 220 and community grants from 20 to 25.

Annex 6 Description of Zambia's Agroecological Zones

Zambia's diverse landscape is divided into three ecological zones on the basis of distinct climatic conditions, soil types, vegetation, and wildlife. These zones—Ecological Zone I, Ecological Zone II, and Ecological Zone III—play critical roles in agriculture, biodiversity, and the overall economy of the country. However, each zone faces specific adaptation challenges and risks, largely due to climate change, unsustainable land use, and deforestation. Each of Zambia's ecological zones presents unique adaptation challenges and risks, but overarching threats like climate change, deforestation, and land degradation cut across all regions.

To effectively adapt, there is need to focus on promoting sustainable land use, climate-smart agriculture, and community-based conservation, while addressing the institutional and infrastructural gaps that hinder resilience-building efforts. Promoting water management systems, reforestation, and alternative livelihoods is crucial for enhancing adaptive capacity and ensuring food security in the face of increasing climate risks.

Cross-cutting Adaptation Challenges

Across all ecological zones in Zambia, several cross-cutting adaptation challenges emerge:

- *Access to climate information*: Many rural communities lack access to timely climate information and forecasts, limiting their ability to make informed decisions. Early warning systems are needed to help communities prepare for extreme weather events.
- *Institutional capacity*: Local institutions often lack the resources and technical capacity to implement large-scale climate adaptation programs. Strengthening governance, providing technical training, and promoting public-private partnerships are essential for effective adaptation.
- *Livelihood diversification*: Over-reliance on rain-fed agriculture makes rural communities vulnerable to climate shocks. Promoting alternative livelihoods, such as agroforestry, sustainable tourism, and non-timber forest products, can improve resilience.

Table 26 Description of Zambia's agroecological zones

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
Region I	Ecological Zone I primarily covers Southern Zambia, parts of Western Zambia, and Eastern Zambia. This zone is characterized by low annual rainfall (ranging from 600 mm to 800 mm), high temperatures, and poor soils. The zone encompasses much of Zambia's semiarid regions, where	1. *Drought and water scarcity*: As the driest zone, water availability is the most significant adaptation challenge. Recurrent droughts have led to poor crop yields and increased food insecurity. The depletion of water sources, such as the Zambezi River, exacerbates the risks for agriculture and livestock, especially given the zone's reliance on rain-fed agriculture. 2. *Soil degradation*: Poor soil fertility is another major challenge. Overgrazing and unsustainable farming practices, such as slash-and-burn agriculture, have led to soil erosion and nutrient depletion.	1.1.1: Sustainable crop and fish production systems implemented on at least 3,000 ha of land under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation etc.)	• Activity 1.1.1.1: Conduct detailed value chain mapping and development of fruit tree and fish value chains • Activity 1.1.1.2: Support towards land rehabilitation and restoration • Activity 1.1.1.3 Support towards livelihood diversification

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
	savanna woodlands dominate. Agriculture here is typically rain-fed and vulnerable to droughts, with crops such as maize, sorghum, and millet being widely grown. *Project districts*: Mwandi, Sesheke, Kazungula, Kalomo, Sinazongwe, Choma and Monze districts	Without sustainable soil management practices, yields will continue to decline, pushing more farmers into poverty. 3. *Climate variability*: Unpredictable weather patterns, particularly erratic rainfall, make it difficult for farmers to plan for planting and harvesting seasons. This reduces the productivity of staple crops and livestock, threatening livelihoods. *Adaptation needs*: water management (e.g., irrigation schemes, water conservation techniques) and climate-smart agriculture (e.g., drought-resistant crops, conservation agriculture). The promotion of livestock diversification and agroforestry could also help enhance resilience to water shortages.	1.1.3: Crop marketing services and infrastructure supported and strengthened in response to climate variability and change - associated extreme weather events and impacts 2.1.1 Financial Service Providers with promising adaptation financial products/services, and innovations relevant to climate-sensitive priority socio-economic sectors identified and supported to increase their community-level financing	• Activity 1.1.1.4: Facilitate investments in climate smart agriculture on 2,500 ha, focusing on climate resilient seed crop varieties • Activity 1.1.3.1: Support local level processing and marketing • Activity 2.1.1.1: Provide tailored financial support to agro dealers and value chains SMEs and strengthen crop weather insurance • Activity 2.1.1.2 Support to financial services for productive assets
Region II	Ecological Zone II, which covers the central plateau, including areas around Lusaka, Central, and Copperbelt Provinces, receives moderate rainfall (800 mm to 1,000 mm annually). It has fertile soils suitable for crop cultivation, and it represents the country's agricultural heartland, producing maize, tobacco, cotton, and vegetables.	*1. Increased rainfall variability*: While Zone II generally receives more rainfall, climate change is leading to more erratic rainfall patterns, with longer dry spells and periods of excessive rain. This creates difficulties for farmers relying on rain-fed agriculture, increasing the risk of floods and droughts. *2. Deforestation and land degradation*: The expansion of agriculture, charcoal production, and urbanization is contributing to deforestation and land degradation. Forests in the region, such as Miombo woodlands, play a crucial role in maintaining soil health and water regulation. As deforestation accelerates, soil erosion and reduced biodiversity increase.	1.1.1: Sustainable crop production systems implemented on at least 3,000 ha of land under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation etc.). 1.1.3: Crop marketing services and infrastructure supported and strengthened in response to climate	• Activity 1.1.1.1: Conduct detailed value chain mapping and development of fruit tree and fish value chains • Activity 1.1.1.2: Support towards land rehabilitation and restoration • Activity 1.1.1.3 Support towards livelihood diversification • Activity 1.1.1.4: Facilitate investments in

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
	Project districts: Mkushi, Luano and Chibombo	*3. Pests and diseases*: The changing climate has led to the spread of pests like fall armyworms and tsetse flies, which affect both crops and livestock. Increasing temperatures create favorable conditions for the spread of diseases, impacting food security. *Adaptation needs*: Reforestation, sustainable agricultural practices (e.g., conservation farming, Integrated Landscape) crop diversification), and pest control. Additionally, early warning systems for extreme weather events and insurance schemes for farmers are essential for managing climate- related risks.	variability and change - associated extreme weather events and impacts 2.1.1 Financial Service Providers with promising adaptation financial products/services, and innovations relevant to climate-sensitive priority socio-economic sectors identified and supported to increase their community-level financing 3.1.1 Planning and climate change awareness-raising mechanisms set up and institutionalized to enhance resilience and adaptive capacity building 3.1.2 Adaptation options based on district-level development plans supported, prioritized and implemented	climate smart agriculture on 2,500 ha, focusing on climate resilient seed crop varieties • Activity 1.1.3.1: Support local level processing and marketing • Activity 2.1.1.1: Provide tailored financial support to agro dealers and value chains SMEs and strengthen crop weather insurance • Activity 2.1.1.2 Support to financial services for productive assets • Activity 3.1.1.1: Strengthen climate change and extreme weather-related information systems in 15 target districts. • Activity 3.1.1.2: Conduct 30 climate change risk awareness-raising campaigns in the 15 target districts • Activity 3.1.2.1: Support the development of 15 strategies at district and

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
				community-levels to incorporate climate change priorities and support capacities for implementation
Region III	Ecological Zone III spans Northern Zambia, including Muchinga, Northern, Luapula, and North-Western Provinces. It is characterized by high rainfall (1,000 mm to 1,500 mm annually) and lush vegetation, including dense forests and wetlands. The soils in this region are generally more fertile, supporting a variety of crops like cassava, maize, and millet. *Project districts:* Chiengi, Nchelenge, Mwansabombwe and Kawambwa districts	1. *Flooding and waterlogging*: Zone III is highly vulnerable to flooding, particularly during the rainy season. Heavy rainfall often leads to waterlogging of soils, which reduces crop productivity and damages infrastructure. The wetlands in the region are also at risk, leading to biodiversity loss. 2. *Forest degradation*: Despite being a high rainfall zone, the increasing pressures of agriculture, logging, and charcoal production are causing significant deforestation. This not only threatens biodiversity but also increases the region's vulnerability to climate change, as forests act as carbon sinks and stabilize local microclimates. 3. *Biodiversity loss*: The region is home to many biodiversity hotspots, including the Bangweulu Swamps and Mafinga Hills. Climate change and human activities threaten these ecosystems, which provide important ecosystem services like water purification and carbon sequestration. *Adaptation needs*: flood mitigation strategies, such as wetland restoration and the construction of drainage systems. Protecting and restoring forests, promoting SLM, and encouraging community-based conservation efforts which are critical for biodiversity preservation. Agroforestry and sustainable fishing practices should also be promoted to diversify livelihoods and reduce the pressures on natural ecosystems.	1.1.1: Sustainable crop production systems implemented on at least 3,000 ha of land under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation etc.). 1.1.2: Targeted individual and community livelihood strategies of the vulnerable members in the target districts established focusing on fish and fruit tree value chains - strengthened in response to the impacts of climate change and extreme weather events. 1.1.3: Crop marketing services and infrastructure supported and strengthened in response to climate variability and change - associated extreme weather events and impacts 2.1.1 Financial Service Providers with promising adaptation financial products/services, and innovations relevant to climate-sensitive priority socio-economic sectors identified and	• Activity 1.1.1.1: Conduct detailed value chain mapping and development of fruit tree and fish value chains • Activity 1.1.1.2: Support towards land rehabilitation and restoration • Activity 1.1.1.3 Support towards livelihood diversification • Activity 1.1.1.4: Facilitate investments in climate smart agriculture on 2,500 ha, focusing on climate resilient seed crop varieties • Activity 1.1.2.1: Build capacities to improve extension services in target districts • Activity 1.1.2.2: Promote adoption of sustainable agricultural practices in mixed crop and fish systems • Activity 1.1.3.1: Support local level processing and marketing

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
			supported to increase their community-level financing 3.1.1 Planning and climate change awareness-raising mechanisms set up and institutionalized to enhance resilience and adaptive capacity building	• Activity 2.1.1.1: Provide tailored financial support to agro dealers and value chains SMEs and strengthen crop weather insurance • Activity 2.1.1.2 Support to financial services for productive assets. • Activity 3.1.1.1: Strengthen climate change and extreme weather-related information systems in 15 target districts. • Activity 3.1.1.2: Conduct 30 climate change risk awareness-raising campaigns in the 15 target districts.