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):** 10,000,000
Reviewer and contact person: Dirk Lamberts **Co-reviewer(s):** Imen Meliane
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 5,757,000); Component 2: Innovative local financing systems to build community adaptive capacities in climate sensitive sectors (USD 1,857,000); Component 3: Enhancing district-level planning, awareness-raising and knowledge management for evidence-based resilience and adaptive capacity building (USD 808,000). Requested financing overview: Project/Programme Execution Cost: USD 804,590 Total Project/Programme Cost: USD 9,216,590 Implementing Fee: USD 783,410 Financing Requested: USD 10,000,000

	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.
Date:	13 September 2024

Review Criteria	**Questions**	**First Technical Review Comments (Sept. 2023)**	**Second Technical Review Comments (Jan. 2024)**	**Third Technical Review Comments (13 Sept 2024)**	**IE responses December 2024**
Country Eligibility	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	**Yes.**	**-**	**-**	
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** 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. Climate change impacts include extreme events hazards including droughts and prolonged dry spells, seasonal and flash floods and extreme temperatures. Climate change is also impacting important economic sector, especially agriculture, which supports roughly 85% of the country's population, employing 52% of the country's working-age population.	**-**	**-**	
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Endorsement letter dated 10 January 2022.	**Yes.** As per the Endorsement letter dated 15 January 2024. There is a discrepancy between the executing entities identified in the proposal and	**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 implementation	**CR 5**: As per request, this has been clarified stating that the PMU will be established under MA and MoLF as the ministries mandated to implement agricultural and fisheries / aquaculture related activities. The Ministry of Finance's role will be limited to processing the grant through the government system as mandated (under A. Arrangements for project

			those mentioned in the Endorsement letter. **CR5:** Please clarify the EEs.	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.	implementation p.74). The cover page now carries only the Ministry of Agriculture as the Executing Entity **CR12**: Please, refer to response provided under CR5 to clarify the PMU will be established at the Ministry of Agriculture
	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?	**Yes.** The length of the proposal amounts to 101 pages, inclusive of annexes.	**Yes.** The proposal amounts to 98 pages, with 65 pages of 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.	**CAR 8** As suggested, the number of pages for the main project document has been reduced to comply with the 100-page limit.
	3. Does the project / programme support concrete adaptation actions to assist	**Yes, but more information is required.** The project supports concrete adaptation actions that are intended to address the climate change challenges in the target area and of benefit to the targeted	**No.** The clarifications that have been provided for the three components now	**Partially, but will likely also lead to maladaptation.** **CAR1: Not cleared.**	

	the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	communities. The activities in component 1 are detailed to a sufficient level for a fully-developed proposal. Activities in component 2 however lack important details, in particular the activity on the blended finance (2.1.2.1). Further details on the settings and modalities of such blended finance option is still required. It is also useful to outline how the 3 activities related to setting financing options would interact and complement each other. Most activities in component 2 remain as USP and the use of USPs is neither acknowledged nor justified in the proposal. **CAR1:** Please recognize the use of the USP modality in line with the Fund's guidance on USPs (https://www.adaptation-fund.org/wp-content/uploads/2021/05/Updated-guidance-on-USPs-.pdf). The proposal mentions that "RUFEP will apply IFAD's Social Environmental and Climate Assessment Procedures (SECAP)", please note that the use of USP requires undertaking an environmental and social risk and impact assessment in compliance with Fund's ESP, kindly refer to the above-mentioned guidance. **CR1:** Please provide more information on the settings and modalities of the blended finance activity, in particular, governance and management scheme of the facility, expected sources of additional funding, detailed list of the financing options that will be utilized and how the AF fund will be utilized and capitalized, with reflection on the sustainability of such facility. **CR2:** please provide more information on the financial providers expected to be involved in all activities of the project. The proposal suggested that these will be selected, please provide details on criteria to be used for their selection, and the risk assessment that would be undertaken.	show that it is unlikely that the project will support concrete adaptation actions. In addition, the proposal will likely lead to maladaptation. Regarding component 1: the fish-related activities presented lack all justification and basic information. No distinction is made between capture fisheries and aquaculture, which are fundamentally different practices apart from the fact that both may result in fish. The proposal does not present elementary, correct relevant technical information required for justifying any of the activities in this sector or to demonstrate that the proposed interventions will lead to building adaptive capacity. None of these activities are presented in an implementable format. There is an on certainty bordering likelihood that these fisheries and aquaculture-related activities as described will lead to a loss of livelihoods assets and adaptation capacity for those involved, i.e. to maladaptation. This is yet exacerbated by the removal of the financing activities	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 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.	**CAR1** Thank you for this comment. The project structure has been entirely redesigned with particular attention to Component 2 which now hosts a Grant Facility, acknowledging the use of USPs under the proposed project. **CAR1bis:** Further to the response to CAR1 above, the proposed Grant Facility aims to finance eligible sub-projects in three target value chains, namely horticulture, fisheries and aquaculture. Sub-projects falling under the fisheries thematic area will be able to finance sustainable fishing gear, to reduce pressure on vulnerable ecosystems and to reduce the depletion of the resource base. One of the objectives of the Grant Facility is to provide technical and financial assistance to new and existing aquaculture operators to incentivize communities to turn to aquaculture for fish production and consumption. This is supported by the establishment of hatcheries and feed processing plants. This will directly contribute to the feasibility of pond-based aquaculture by securing a reliable, local and resilient supply of fish fry, fingerlings and feed, addressing systemic barriers identified. The project description includes further detail on the technical assistance and eligible activities and investments to be supported by the Grant Facility.

			from the project and the lack of identification of project activities, whereby the activities of 1.2.1, 1.2.3, 1.3.1, 1.3.2, 1.3.3 and 3.1.1 are to be considered USPs. This amounts to 60 per cent of the activities budget. Similar considerations apply to the mango value chain. This includes a fruit processing plant to produce mango pulp, dried mango slices, jams, and jellies, and the necessary equipment for collecting and transporting the produce nationally and abroad. Such a plant would require a substantial investment – in the order of millions of USD – and a guaranteed supply of high quality fruit and fuel wood for operating the kilns. The proposal presents no information to support the feasibility of this activity. **CAR1: Not cleared.** The removal from the proposal of the financing activities of component 2 has left the proposal decapitated and incoherent, without clear focus and no		

			longer relevant to its title. **CAR1bis:** Please modify the proposal to exclude the possibility of maladaptation. **CR 1: No longer relevant.** **CR 2: No longer relevant.**		
	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?	**Yes.** Section II-B outlines a number of social and environmental benefits, with some quantified estimations. The proposal includes general information on the expected beneficiaries, but does not identify particularly vulnerable communities, or marginalized groups, expect for a broad statement that women and youth are socially marginalized. No particular benefits are outlined for women and youth and no estimated are provided for such groups. It is unclear how the recommendation of the gender assessment have been integrated in the design of the project. **CAR2 (4):** please clearly identify particular benefits to women and youth and outline how their concerns and needs have been integrated in the design of the project. Please provide quantified estimates of benefits to these groups where possible.	**No.** The previous version of the proposal included the following – now deleted – sentence: "In this regard, Component 2 complements Component 1 by focusing on a very socioeconomically debilitating aspect of vulnerable people's coping strategies, resilience and adaptive capacities to the challenges of climate change – innovative financing to invest in climate-sensitive sectors that underpin livelihoods". The removal of the financing element from the proposal renders it greatly unlikely that the other components will achieve their envisaged outcomes. **CAR2 (4): Not cleared.**	**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.	**Please see response to CAR1 above.**
	5. Is the project / programme cost effective?	**Yes.**	**No.** The cost-effectiveness depended to a large	**Yes.** **CR 6: Cleared.**	

		As per the information provided in Section II-C.	extent on the now removed financing component. The feasibility of the remaining activities is not demonstrated, as is their cost-effectiveness. **CR6:** Please clarify the cost effectiveness of the project.	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 programs of action and other relevant instruments?	**Yes.** The proposal provides an overview of the project's alignment with key national strategies and plans including the National Climate Change Response Strategy; the Nationally Determined Contribution (NDC); the National Policy on Climate Change (NPCC) and Zambia's National Agriculture Policy, among others.	**Partially.** The proposal – despite its substantive focus on fish – remarkably makes no reference to the *National Fisheries and Aquaculture Policy of Zambia*. The launch of this policy was widely publicized in June 2023. The same applies to the *National Fisheries and Aquaculture Policy Implementation Plan 2022-2026*. **CR7:** Please clarify how the project is consistent with all relevant national strategies and policies.	**Yes.** **CR 7: Cleared.** As per the additions in section II.D.	
	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.** The proposal provides a table of some standards and the relevant Authorities that the project will work with to ensure compliance. However the table is as per the AF ESP principles. Please note that the relevant national technical standards and regulations should be identified depending on the nature of the activities. If one specific activity of the project requires	**No.** **CR3: Not cleared.** Despite the strong focus on food production and value chains, no reference is made to the *Food Safety Act, 2019*.	**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	**CR3**: The comment is well noted. In response, additional information has been provided on p.50 regarding the Zambia's Public Finance Management Act 2018 to which the project will comply. Embedding financial management standards and monitoring mechanisms will provide the requisite alignment with Zambia's Public Finance Management Act, assuring project stakeholders of Component 2's financial integrity. It should be noted however,

		compliance with technical standards, the steps taken to comply with it and the nature of the authorization/clearance granted for the project to be implemented is explained. **CR3:** Please ensure that all the relevant national technical standards that may be needed to comply with by the project activities are identified, and compliance stated in a logical manner. In particular, please identify any financial standards or regulations that the project needs to comply with in the implementation of activities under component 2.		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.	that the project will not engage any other institutions to manage project financial resources. All financial flows for the project will be as detailed in the institutional arrangement as shown in the graph on p.74 **Adherence to the Food Safety Act No. 7 of 2019:** The comment is noted, and in response, additional info has been provided on p.49. Position of strategies, policies and safeguards: As suggested, this info has been moved to under GRM on p.70 ff
	8. Is there duplication of project / programme with other funding sources?	**No.** The proposal presents a list of potentially relevant project and outlines the lack of duplication and complementarity. In addition, development partners will also be engaged through bilateral meetings as well as project progress reviews and workshops to ensure coordination.	**Unclear.** The focus of the project having shifted away from rural finance, it is now unclear to what extent there may be duplication or opportunities for complementarity with other projects. Despite the focus on fish production and processing, there is no mentioning of e.g. the ongoing AfDB USD 45 million *Aquaculture Enterprise Development Project*, the EU *Zambia Aquaculture Project Technical Assistance (ZAP-TA)* or the GIZ EUR 6 million *Sustainable Fisheries*	**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.	**CAR 3:** The comment is noted, and in response, information about the three projects has been provided on p.53 - 54

			and Aquaculture in Zambia project. **CAR3:** Please describe how there will be no duplication with other funding sources and how opportunities for synergies and complementarity have been identified and integrated in the project design.		
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** Component 3 of the project is largely dedicated to knowledge management. 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. The lessons and knowledge from the project will be captured through specific activities that will complement the monitoring and evaluation system of the project.	**Unclear.** With the change to component 2, the potential for lessons learning for the project has considerably changed, but this is not reflected in the activities of Component 3. **CR8:** Please clarify the knowledge management component.	**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.** As outlined in Section II-H consultation has taken place following the approval of the project concept and the process is summarized in section H with a brief summary of the inputs received. Evidence of gender consideration is included in the proposal.	**Unclear.** The changes made to the proposal have only to a limited extent been carried through in this section of the proposal. **CR9:** Please clarify the consultative process that was held, removing no longer relevant aspects and showing that all relevant stakeholders were consulted in line with the current content of the proposed project.	**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.** The proposal demonstrates that the project activities are relevant in addressing its adaptation objectives. However, it is not clear that, taken solely, without additional funding from other donors, they will help achieve these objectives. The blended finance facility in component 2 does not provide details on complementary sources of funding from the private sector. **CR4:** Please clarify if the project has co-financing, and if so, please provide more details on their sources, and availability. Please also demonstrate that the Adaptation Fund project would be able to deliver its outcomes and outputs regardless of additional funding.	**Unclear.** The proposal overall lacks sufficient details to be able to appreciate the full cost of adaptation. There appear to be substantial additional funding requirements for most the activities of component 1. The justification for the activities of component 1 relies in part on the establishment of an "emergency food security fund" (p. 61), which is not mentioned elsewhere in the proposal. **CR4: Not cleared.**	**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:** The comment is well noted, and in response, the section on the full cost of adaptation has been edited to reflect changes to the project description and activities.
	12. Is the project / program aligned with AF's results framework?	**Yes.** The proposal specifies the alignment with Adaptation Fund revised strategic results framework in Part-III Section D.	**-**	**-**	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** The project proposal addresses various key areas of sustainability: economic, financial, institutional and environmental as described in section II-J. It also explains how maintenance of potential installations under the project would be maintained.	**Unclear.** Further to the uncertainty regarding the full cost of adaptation reasoning, it is unclear if the current version of the proposal will indeed have the financial sustainability that is claims. Paragraph 189 states "Communities and financial and	**Unclear.** **CR 10: Not cleared.** The sustainability aspects have been shown in light of the revised component 2. However, please see the findings on the likelihood of maladaptation under point 3 above.	**CR10:** The sustainability section has been revised in light of the amended project structure.

			value chain providers as well as private sector investors will be delivering these interventions (…)" suggesting that indeed substantial additional financing is required for achieving the adaptive capacity that is envisaged. Without this additional funding, it is hard to see how many of the outcomes can be achieved or sustained. The technical issues identified with several of the proposed activities cast considerable additional doubts over the environmental sustainability of the project outcomes. **CR10:** Please clarify how the sustainability of project outcomes has meaningfully been taken into account in the design of the current proposal.		
	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?	**Not Clear.** The proposal presents a summary of the risk assessment in Section II-K, however the summary of the risks do not correspond to the ones included in the Annex3 (table 28). For example, the table on cumulative impact in the annex mentions the risk of increased gender based violence. Whereas the table in Section II-K does not raise any risk. **CAR2 (14)**: please ensure that the result of the overall risk assessment provided in the Annex is accurately reflected in the Section II-K.	**No.** The risks identification presented on p. 66-68 has several issues. (i) It is unclear which activities have been considered in the risks identification and if the USPs of activities 1.2.1, 1.2.3, 1.3.1, 1.3.2, 1.3.3 and 3.1.1 have also been included; (ii) the table concludes that for none of the principles the project will present	**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.	**Thank you for this comment. The E&S risk section has been edited. However, please note that the ESMP is currently under revision to match the updated project structure.**

		Additionally, while the project contains USPs, the use of this modality is not fully recognized in the proposal document. Please refer to **CAR1** above.	risks of negative impacts, which is not corroborated by the narrative clarifications in the table. E.g., UNHCR states that there are at least seven main population groups in Zambia. The risks finding states that "Technically, there is no group in Zambia that identifies itself an Indigenous People". Another example relates to child labour. No risk is found, however, the narrative states that "no child labour will be tolerated". That is a mitigation measure and should not be taken into consideration in the risk identification. Child labour – particularly in the agriculture sector that is the focus of the proposal – is known to be common in the project areas; (iii) There are several contradictions in the proposal. Paragraph 143 of the proposal includes a table with for each of the 15 ESP principles "areas of concern" that have been identified. These will be "cleared" with the competent authorities prior to implementation of an activity. Such 'concerns' are identified for nearly all	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. **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	

			the AF principles, some with multiple concerns, yet no risks have been identified in section II.K of the proposal. The 'concerns' listed include e.g. child labour and resettlement. **CAR 2 (14): Not cleared.** **CR 11:** Please clarify how risks findings are aligned with the AF ESP and GP.	ESP compliance as described in paragraph 329 for some of the USPs, can be (cost-) effective and fit for purpose.	
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	**-**	**-**	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.**	**-**	**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.**	**-**	**Yes.** Please see CAR 9.	
Eligibility of IE	1. Is the project/programme submitted through an eligible	**Yes.**	**-**	**-**	

	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?	**Yes.** The implementation arrangements include a description of the roles and responsibilities of the different entities and the various implementing partners that are involved in the project and incorporate gender responsive elements.	-	-	
	2. Are there measures for financial and project/programme risk management?	**Yes.** The proposal identifies some major risks and includes some mitigation actions, as described in section III-B.	-	-	
	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?	**Yes.** An Environmental and Social Management Plan (ESMP) is included in Annex 3 of the proposal and identifies credible measures to manage the impacts for the environmental and social risks that have been identified. The ESMP: also contains clearly allocated roles and responsibilities as well as budget provisions for its implementation	**No.** Considering the extensive and as yet unjustified use of USPs, and the shortcomings in the risks identification in the revised proposal, it cannot be concluded that the proposed management measures are relevant or adequate. There is no process to identify environmental and social risks for any USPs. Paragraph 219 includes a long list of potential impacts from project activities, contradicting the findings presented in II.K. This section further includes a list of generic management measures that cannot	**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.	As above.

			be meaningfully linked to the activities. Annex 3 presents an ESMP that was designed for the project. It includes 8 pages of text copied from the AF ESP Guidance document. It also includes the risks findings stating that for none of the 15 AF ESP principles further assessment is needed (as there are no risks identified) or that the principle is not relevant. Nevertheless, a 5-page “Consolidated ESMP” is presented listing “ESMP Measures” and the parties responsible. The ESMP includes also a detailed description of a GRM. It includes statements like “This will be established in each participating country and at every sub-project Offices (sic)” (p. 149), suggesting that it lacks relevance to the proposal. It is entirely different from the proposed grievance mechanism of the proposal (paragraphs 206 and 207), which states that the project will utilize as much as possible a wide variety of external avenues to address complaints.		

			CAR 6: Please include relevant and adequate measures to manage environmental and social risks, identified in accordance to the AF ESP and GP.		
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.**	**-**	**-**	
	5. Is an explanation and a breakdown of the execution costs included?	**Yes.** The budget table includes a breakdown of the Execution costs.	**-**	**-**	
	6. Is a detailed budget including budget notes included?	**Yes.**	**-**	**The budget contains errors.** **CAR 9:** Please correct the budget, throughout the proposal.	**CAR 9:** Comment appreciated, and in response, the budget figures have been corrected
	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?	**Yes.**	**-**	**-**	
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of	**Yes.**	**-**	**-**	

	the M&E function?				
	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?	**Yes.**	**-**	**-**	
	10. Is a disbursement schedule with time-bound milestones included?	**Yes.**	**Yes.** However, the disbursement schedule contains errors. **CAR7:** Please present a disbursement schedule with correct figures.	**Yes.** **CAR 7: Not cleared.** Please see CAR 9.	**CAR 7:** Please refer to response provided above to CAR9

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:** 10 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: 9/08/2024

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. This sequence averages drought occurrence to every 4 to 5 years, but increasingly reducing due to climate change. 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]

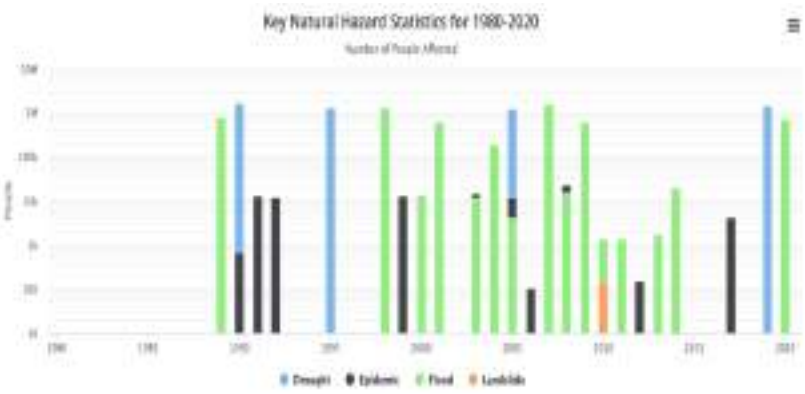

Figure 1: Overview of the most frequent natural disasters in Zambia and number of affected people

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 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

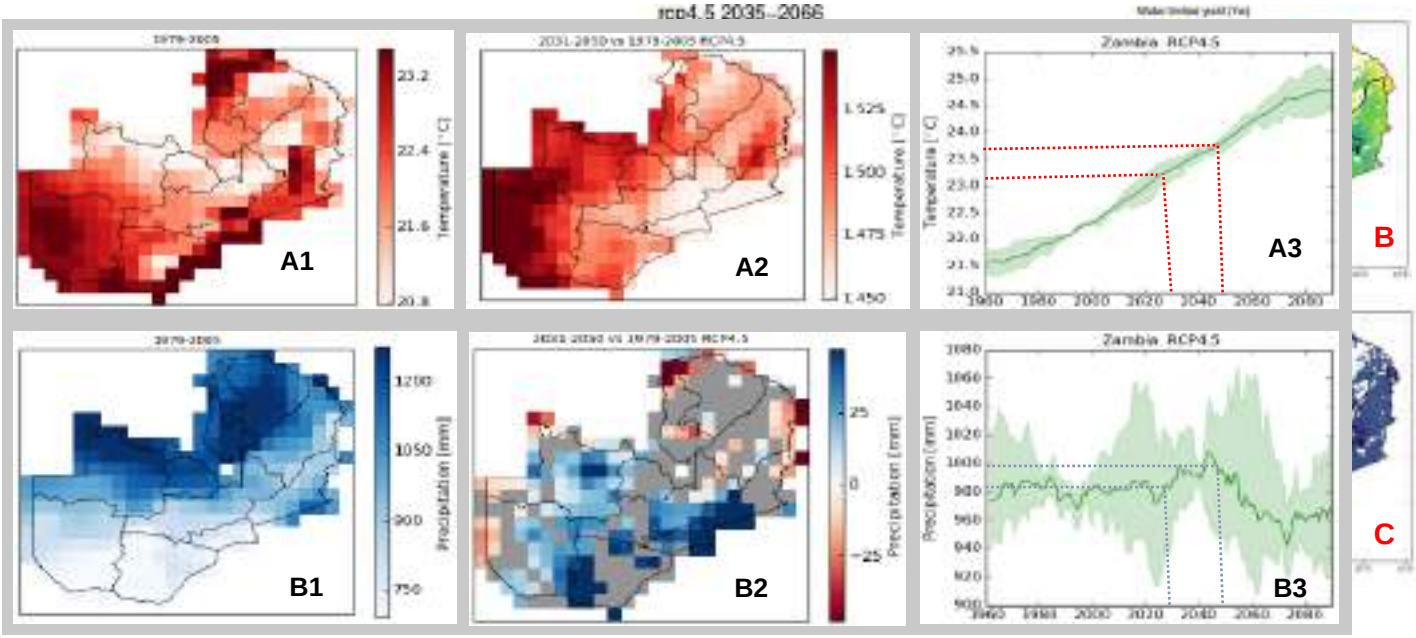

Figure 2:Under the RCP4.5 scenario 1979-2005 (A1) period is projected to get warmer in the 2031-2050 (A2) period, with temperature projected to continue to rise (A3). Across the country, the temperature variation will be between +1.45°C and +1.50°C. Under the as

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)

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 2 (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 3 (**B**)) and further lower yields under water and nutrient stress (Figure 3 (**C**)) - threatening food security, production landscapes and the ecosystem services and disease outbreaks.

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 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.

[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*

[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*

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 15 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 1.5ºC and 1.3ºC 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. 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:

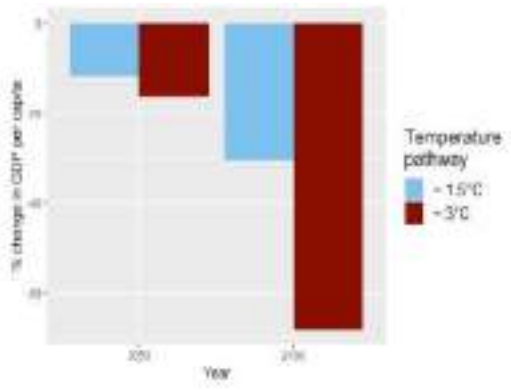

Figure 4: Impact of climate change on Zambia's GDP

- 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;
- 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

[14] Ngoma et al., 2017; Hamududu and Ngoma, 2019; Mulenga et al., 2017
[15] Mulenga et al., 2019b; Chisanga et al., 2018
[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

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*

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 map on the right with project districts).

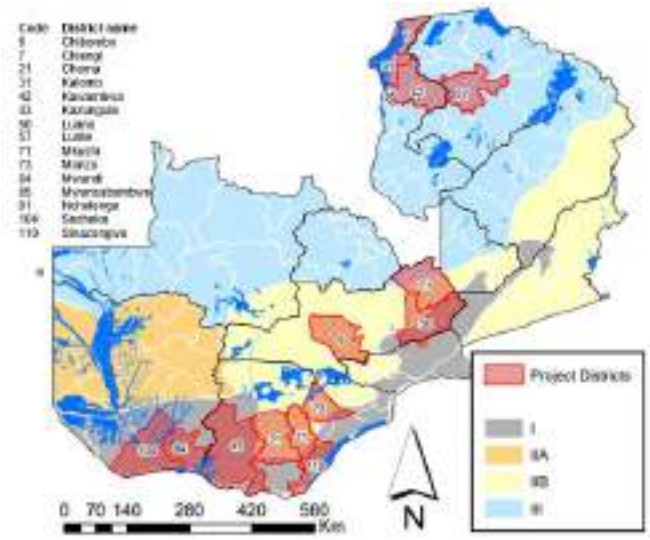

Figure 5: Map of Zambia showing the agroecological zones and the project districts

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

21. 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.

[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

22. 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.

23. 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 aluminum and manganese, both of which are toxic to most crops unless soils are limed to increase pH.

Major cropping systems

24. 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.

25. 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.

26. 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. This region receives over 1000 mm of precipitation yearly, and the growing season ranges from 120-150 days. 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.

27. 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]

28. 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 aluminum 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

29. 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

30. 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 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 season. The President Hichilema said 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).

31. 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

32. 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

[21] Chikowo, R. Global Yield Gap Atlas: Description of cropping systems, climate, and soils in Zambia
[22] Central Province Provincial Admin. 'Zambia Needs K23.5 Billion for Drought Intentions.'

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.

33. 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.

34. 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.

35. 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.

36. 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 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.

37. 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.

38. 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].

[23] National Policy on Climate Change

39. 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 4**). 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]

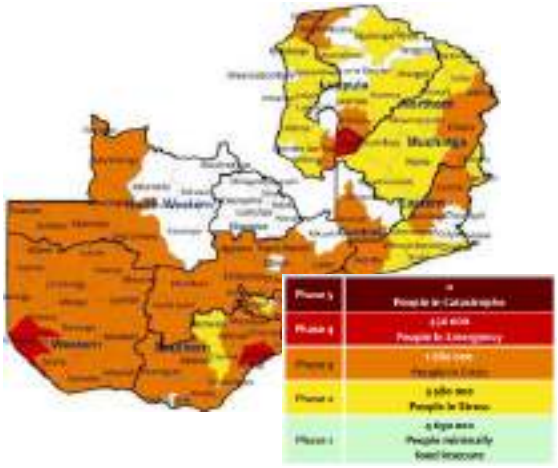

Figure 6: IPC Projections 2019-2020

40. 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.

41. 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.

42. 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 5**),[27] and soy and wheat usually produced for sale by mostly medium to large-scale farmers.

43. Consistent with CARD (**Fig 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.

[24] Climate Service Center, 2016; IFAD/WFP 2016

[25] Vulnerability Assessment Committee Results (2019): Zambia

[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.

44. 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).

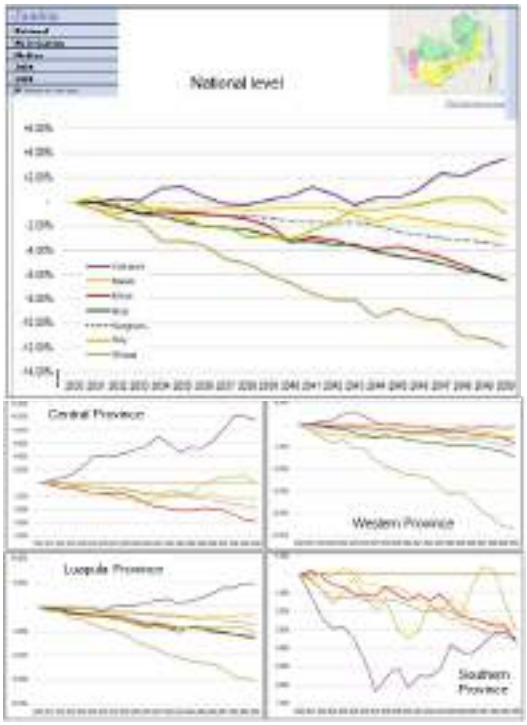

Figure 7: Projected reduction in yields of selected crops

45. 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, 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**).

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

[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] https://climateknowledgeportal.worldbank.org/country/zambia/vulnerability

Barriers to Climate Change adaptation in the Context of Climate Vulnerability

46. 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.

47. 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]

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

48. 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 is 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.

[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.

49. Past IFAD interventions in Zambia, other funders' experiences, and from a sectoral analysis of constraints/ 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.

50. 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.

51. 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

52. 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.

53. 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]

54. 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.

55. 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. CARLF 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 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.

56. 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.

[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.

57. **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.

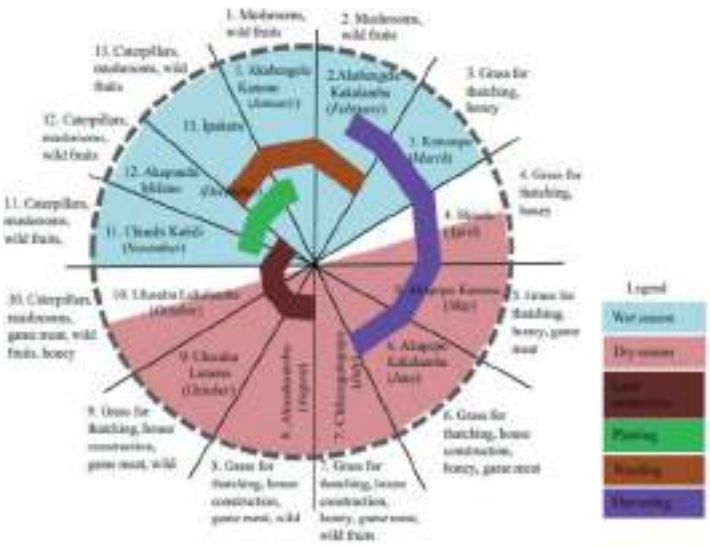

Figure 9: Community use of land and forest resources January-December

58. 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.

59. 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.

60. 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.

61. 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 CARLF districts) are located in semi-arid regions, with mean annual rainfall ranging between 600 mm– 800 mm. Western Province, Zambia's largest

[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*

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]

62. 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.

63. 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 the 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:

[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

64. 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 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.

65. 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	Outcome 1. Fostered national and local level technical capacity to support the uptake of resilience measures	**1,574,900**
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)	**6,529,100**
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)			**8,558,000**
Project Execution costs (including M&E) (B)			**658,590**
Total Project Costs (A+B)			**9,216,590**
Project Cycle Management Fees charged by the Implementing Entity (if applicable) (8.5%) (C)			**783,410**
Total Amount of Financing Requested (A+B+C)			**10,000,000**

A. Projected Calendar:

Milestones	Expected Dates
Start of Project Implementation	June, 2025
Mid-term Review (if planned)	September, 2027
Project/ Closing	June, 2029
Terminal Evaluation	September, 2030

PART II: PROJECT JUSTIFICATION

66. 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.

67. 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.

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.

Output 1.2. Communities are aware and have capacity to trigger behavioural 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

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.

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 will provide training to communities including traditional leaders on the updated technical guidelines and recommendations for sustainable agriculture, capture fisheries and aquaculture. The training materials will be applied 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.
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. This approach would help bridge the gap in extension services at the grassroots level while also enabling access to reliable information on sustainable horticulture and aquaculture production practices to communities in the most remote areas.

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, 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. It is envisaged that this localized approach will establish a reliable seed supply chain that will ensure consistent access to seeds for farmers. Further to this end, this activity will facilitate the formation of Community Seed Banks 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.

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 of Livestock and Fisheries, 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:

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:

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

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 Tilapia baloni, Tilapia jallae, 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 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.

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 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 provinces, 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, CARLF 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 195 grants, spread in 175 individual grants and 20 community grants for a maximum funding amount of USD 25,000 and USD 50,000, respectively. The profiles of beneficiaries targeted by the Facility are:

- 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.
- **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 has been informed by prioritization exercises conducted by the GoZ as well as stakeholder consultations during the design of the proposed project.

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.

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 DA. 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.

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.

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 CARLF, 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). This service will be accessible even to those with basic mobile phones, not necessarily smartphones.
- 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.

Activity 3.1.2. Organisation of knowledge exchange platforms

This activity will pertain to the organisation of 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. This activity will create 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.

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.

B. Economic, social and environmental benefits

68. 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. The table below offers a summary of the project's economic, social and environmental benefits and co-benefits compared to the baseline.

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 regards to livelihoods impacted by climate change • Integration of women's and vulnerable populations'	• 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

Activity	Baseline	Expected changes	Economic, social and environmental benefits
		dynamics in district-level adaptation planning strategies	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 2.1.1 Establishment and operationalisation of the Grant Facility	• Low revenue and income for farmers, fishers and aquaculture producers • Risk-averse financial	• Enabled access to technical assistance and financing for new and existing farmers, fishers and aquaculture operations to support	• Reduced environmental degradation of natural resource base • Demonstration of economic

Activity	Baseline	Expected changes	Economic, social and environmental benefits
	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	resilient investments	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 availability and access to climate information at the community and national levels	• No access to reliable, weather and climate information services for farmers • Limited coverage of existing communication channels for early warnings	• 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
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	• Absence of district-level adaptation planning strategies that include	• Development of locally-led adaptation planning strategies that integrate	• Increased integration and consideration of communities' needs and

Activity	Baseline	Expected changes	Economic, social and environmental benefits
climate change priorities and support capacities for implementation		women's and vulnerable groups needs and priorities	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

69. 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.[40] This is about $223[41] 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.

70. 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;
- 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.

71. 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,

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

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

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 685,000 households at a cost of USD 22 per beneficiary.

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 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.

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.

75. National priorities on climate change have been elaborated through several key documents, between 2007 and 2016. The National Policies and Strategies Consistent with CARLF are listed down (detailed explanations of each are in annex 7):

- Zambia 8th National Development Plan (2022 -2026)
- Zambia National Adaptation Programme of Action (NAPA) in 2007
- National Climate Change Response Strategy (NCCRS) in 2010
- Nationally Determined Contribution (NDC) in 2015 and updated in 2020
- National Policy on Climate Change (NPCC) in 2016
- Zambia National Agriculture Policy (ZNAP - 2013):
- National Land Policy of 2017
- Zambia National Adaptation Plan (NAP) (2023)
- Zambia National Resettlement Policy (ZNRP) (2015)
- Zambia Disaster Management Act (ZDMA) (2010)
- Zambia Climate Change Gender Action Plan (ccGAP) (2018)
- Zambia National Drought Plan (ZNDP) (2018)
- Zambia National Disaster Management Policy (ZNDMP) (2005)
- 2009 National Policy on Environment (NPE - 2009)
- National Forestry Policy (2014)
- National Forest Act (2015)

- National REDD+ Strategy 2015
- National Fisheries and Aquaculture Policy Implementation Plan 2022-2026
- National Fisheries and Aquaculture Policy (NFAP):

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[42] 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:

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

- *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.[43]

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 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.[44]

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

[43] Government of Zambia (2019): The National Strategy on Financial Education for Zambia.
[44] Government of Zambia (2017): National Financial Sector Development Policy

interest register to increase asset-based lending, especially to SMEs; and building capacity of regulators to undertake financial consumer protection supervision.[45]

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.[46]

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.[47]

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.[48]

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

91. 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. CARLF 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.

92. Table showing projects for complementarity

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)	The project will build on networks and partnerships in the finance space within the target districts. CALRF will therefore work with various service

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

No.	Project title	Project description	Areas of complementarity and justification
		Strategic Partnerships; (ii) Innovation and Outreach Facility (IOF) and (iii) Knowledge Management and Programme Implementation.	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 enabling environment for livelihood investments, improving rural livelihoods, conservation of ecosystems and reducing emissions and providing assistance in case of emergency relief or disaster	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 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	CARLF'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 CARLF 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	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.

No.	Project title	Project description	Areas of complementarity and justification
		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.	
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
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.	CARLF 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	CARLF 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

No.	Project title	Project description	Areas of complementarity and justification
		accelerating diversified, resilient and inclusive agricultural growth. The program seeks to promote agricultural diversification, sustainability and jobs in the agri-food sector in Zambia.	value chains to complement ZAMGROW.

93. 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)49: 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)50: 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 Project51: 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.

94. 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

95. 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.

96. 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

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

development of district-level planning strategies, directly informed by rounds of consultations and gathering of information from communities.

97. 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 amon 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.

98. 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.

99. 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.

100. 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.

101. 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.

102. 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

103. 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.

104. 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.

105. 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.

106. 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.

107. 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.

108. 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.

109. For an adaptation project such as CALRF, participatory engagement of women has been critical. This is because the impacts of climate change affect women is some different ways than that of 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.[52] 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.[53]

110. 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.

111. 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 CARLF 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.

#	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 sound, To 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.

[52] 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*

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

#	Stakeholders	Contribution to the proposal development
		• 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.

112. 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.

113. 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.

114. 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.

115. 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, CARLF 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.

116. 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 CARLF on fisheries, and HODI and ReSEI will collaborate with the project on fruit tree value chain development.

117. 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.

118. Table highlighting a summary of key issues raised during stakeholder 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 1,000 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 certain key roles in society, including the manner of using natural resources.	The project intends to: i) 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). 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 have bad road networks, and often the 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. iii) 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

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[54] projects increases in domestic revenue to finance its ambitious

[54]

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.

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.

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.

J. Sustainability of the project outcomes

119. 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.

120. 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.

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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 avocados. The progressive depletion of the resource base coupled with land degradation due to unsustainable fishing and farming practices will inevitably result in economic losses, the results of which would impact national economic stability. Under this project, AF funding would act as 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.

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

123. **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.

124. **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.

125. **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.

126. **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.

127. **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.

128. **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.

129. **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.

130. *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.

131. **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**.**

132. **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.

133. Finally, to consolidate CARLF'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, CARLF'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 CARLF's infrastructure and installations.

K. Overview of the environmental and social impacts and risks

134. 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.

135. 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 project and classified as a moderate risk project, with some, potential adverse impacts and risks that are reversible or mitigated.

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

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	**Yes**	**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	**Yes**	**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.
3. Marginalized and Vulnerable Groups	**Yes**	**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.
4. Human Rights	**No**	**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.
5. Gender Equality and Women's Empowerment	**Yes**	**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	**No**	**Low risk:** The project will support activities that will require human labour. 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**	**No risks:** Technically, there is no group in Zambia that identifies itself as an Indigenous People. Where the project activities will be implemented, principles of Free, Prior and Informed Consent (FPIC) will be adhered to.

8. *Involuntary Resettlement*	**No**	**Low risk:** There will be no resettlement as part of the project activities.
9. *Protection of Natural Habitats*	**Yes**	**Low risk:** 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*	**Yes**	**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*	**No**	**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.
12. *Pollution Prevention and Resource Efficiency*	**No**	**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*	**No**	**Low risk:** 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.
14. *Physical and Cultural Heritage*	**Yes**	**Low risk:** The project will ensure that all project-related workshops have representation of indigenous and local communities to ensure that all activities and outcomes are locally-led and focused. This will be particularly significant for the development of the 15 district-level adaptation planning strategies.
15. *Lands and Soil Conservation*	**Yes**	**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. At more strategic level, the Technical Advisory Group will also have members with expertise in gender equality and social inclusion to be able to support gender causes for the project.

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.

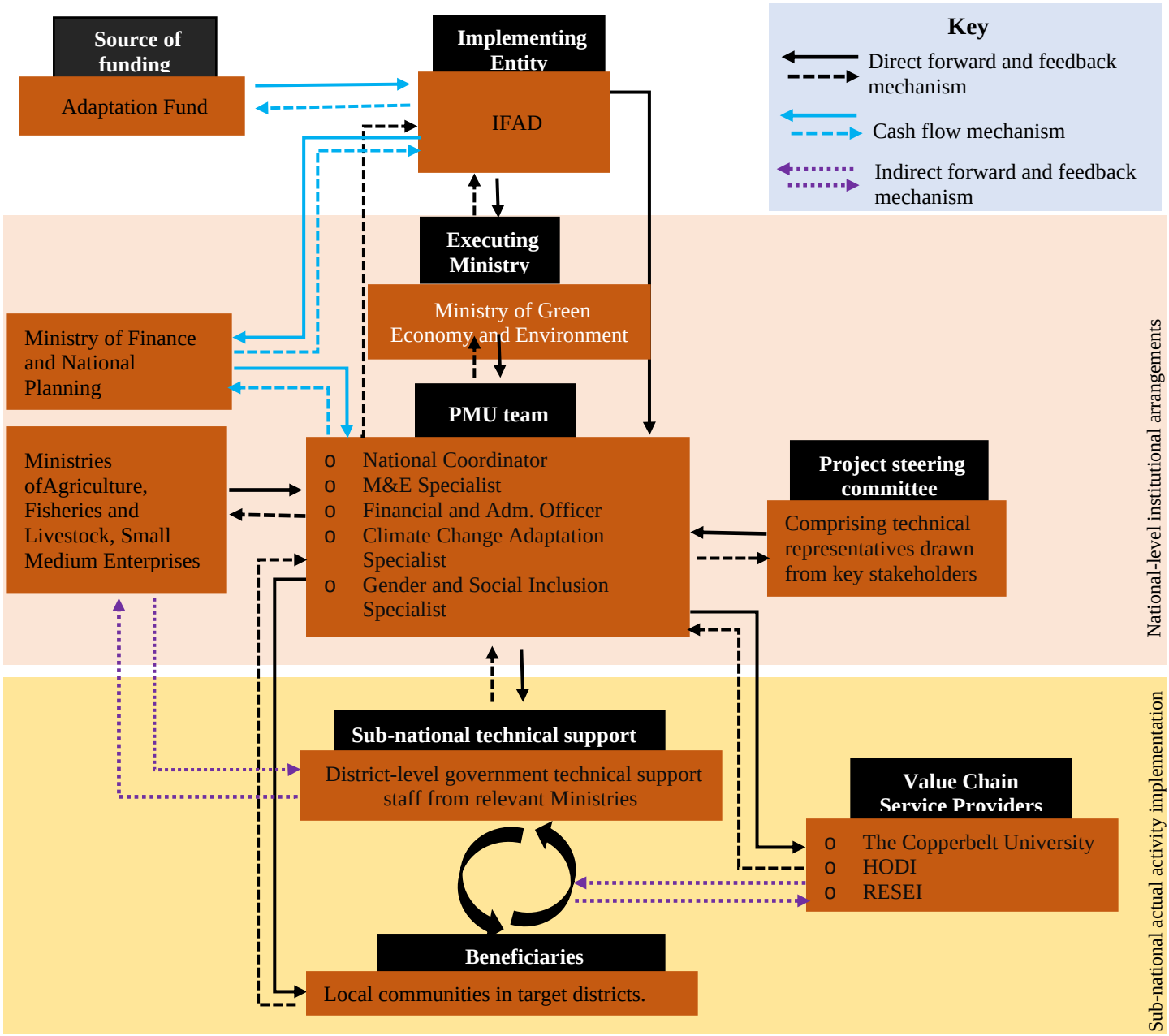

Fig. 12 showing the implementation structure of CALRF

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.

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
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	All the components

Entity	Role	Priority component
	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.	
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 CARLF'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 being an engine of rural development in Zambia. MSME will be represented on the PSC and the TAG.	Component 1 and 2
Zambia Alliance of Women (ZAW) and	No direct execution role in project activities, however will closely offer technical and policy directions so that the implementation of the activities remain	All components

[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
Zambian Women in Agriculture (ZWA),	compliant and consistent with women development initiatives. ZAW and ZWA will be represented on TAG	
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

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.

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 the AF-specific 15 Environmental and Social Principle (ESP) screening and social, environmental and climate assessment procedures (SECAP) of IFAD. 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 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.

a. Table 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

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.

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

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 risks)	PMU, IFAD	Semi-annually	10,000
Semi-Annual Progress Report	PMU	Semi-annually	-
Supervision missions	IFAD	Annually	Covered by IE fee
Mid-Term Evaluation	PMU	Mid-point	25,000
Annual Work Plans and Budget	PMU, IFAD	Annually	-
Site visits	PMU, IFAD	Annually	8,000
Terminal Evaluation	IFAD, External consultants	End of project	35,000
		Total	**120,000**

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 people (50% of whom women direct beneficiaries, and ~217,000 as indirect beneficiaries).	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.
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	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

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

Project Objective(s)[1]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
					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 and sustainability of Grant Facility	Number of extension agents with increased technical and operational capacity in selected value chains (gender disaggregated)	0	1,500 (of which at least 30% 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
	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 technical training manuals 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 30% 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

Project Objective(s)[1]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Output 1.2. Communities are aware and have capacity to trigger behavioural change to support the uptake of resilience measures	Percentage of target population capacitated to inform district-level planning strategies and sustain diversified livelihood options	0	100%	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	
	Percentage of target population with increased technical capacity to sustain diversified livelihood options	0 Fishers engage in unsustainable fishing practices resulting in ecosystem 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	100%	Training reports Participants lists Post-training surveys	
	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	

Project Objective(s)[1]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Output 1.3. Supply of locally-adapted resilient seeds and fish fingerlings and feed is established	Percentage of target population with access to locally-adapted resilient seeds	0 Farmers do not have access to a reliable, locally-adapted resilient supply of seeds	100%	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 demonstration plots established to produce legumes and small grains seeds	0 Farmers do not have access to resilient seeds and are unaware or risk-averse to try resilient seed varieties	75 (5 per district)	Field surveys	Communities remain meaningfully engaged throughout the project lifetime and continue to maintain plots post-project end
	Percentage of target population 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	50% (northern districts where aquaculture operations take place	Field surveys Self-scored questionnaires	Government funding is secured to sustain operations of the hatcheries and feed plants post-project end
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 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	175 individual grants (representing 875 people) incl. 30% of grants awarded to women 20 community grants (representing 1000 people) incl. 30% of community grants awarded to women-headed initiatives	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

Project Objective(s)[1]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
					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
	Percentage of target population reached by awareness campaign	0	100%	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
Output 2.2. Candidate grantees receive technical assistance to develop and sustain context-appropriate, resilient sub-projects	Percentage of grantees with increased technical and operational capacity to sustain financed sub-projects	0	100%	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

Project Objective(s)[1]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
					women's constraints and responsibilities Willingness and ability of fishers to endorse sustainable fishing practices
Component 3: Enhancing knowledge management for evidence-based adaptation planning					
Outcome 3. Enhanced availability of reliable data and information to sustain fish and fruit value chains	Percentage of target population with access to weather, climate and early warning services	0	100%	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. 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
	Percentage of target population reached by radio broadcasts	0	100% 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	12 (2 per year from Year 2 to Year 7)	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)

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

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	**8,558,000**
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	**Grant Amount (USD)**
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	**1,574,900**
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 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	**6,529,100**
Outcome 3. Enhanced availability of reliable data and information to sustain fish and fruit value chains	Percentage of target population with access to weather, climate and early warning services	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**

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	93,000
	Output 1.1 subtotal	**153,000**
Output 1.2. Communities are aware and have capacity to trigger behavioural 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
	Total component 1	**1,574,900**
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 175 individual and 20 community sub-grants awarded USD 25,000 for individual grants, USD 50,000 for community grants	5,375,000
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	5,463,500
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	1,065,600
Activity 2.2.2. Post-grant support to candidate grantees to enable the long-term technical, economic and environmental sustainability of sub-projects		
	Output 2.2 subtotal	1,065,600
	Total component 2	**6,529,100**
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)	**8,558,000**
Project Execution costs (including M&E) (B)	
Project staff personnel (Coordinator, M&E Specialist, CC Adaptation Specialist, Gender Specialist, Financial Officer, Driver)	404,590
Project vehicle	50,000
All staff travel expenses	60,000
Inception Workshop, mid-term and terminal evaluations (M&E)	99,000
External audits	45,000
Total	**658,590**
Total Project Costs (A+B)	
Total	**9,216,590**
Project Implementing Entity (8.5%) (C)	
Operational and Financial Management	170,018
Project Development and implementation support	313,018
Technical support and supervision	300,374
Total	**783,410**
Total Amount of Financing Requested (A+B+C)	**10,000,000**

16. Include a disbursement schedule with time-bound milestones

Project disbursement schedule (USD)

Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Total
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	60,000					60,000
Activity 1.1.2. Delivery of training and capacity building for national extension services		93,000				93,000
Output 1.1 subtotal	60,000	93,000	0	0	0	153,000
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	81,750					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		77,250	77,250	77,250		231,750
Output 1.2 subtotal	81,750	77,250	77,250	77,250	0	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	50,000	50,000	50,000			150,000
Activity 1.3.2 Building of fish hatchery and feed plants to enable a reliable supply of inputs for aquaculture operations	479,200	479,200				958,400
Output 1.3 subtotal	529,200	529,200	50,000	0	0	1,108,400
Total component 1	670,950	699,450	127,250	77,250	0	**1,574,900**
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		1,343,750	1,343,750	1,343,750	1,343,750	5,375,000
Activity 2.1.2 Launch of awareness campaign and call for expression of interest		22,125	22,125	22,125	22,125	88,500
Subtotal output 2.1	0	1,365,875	1,365,875	1,365,875	1,365,875	5,463,500
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		133,200	133,200	133,200	133,200	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		133,200	133,200	133,200	133,200	532,800
Subtotal output 2.2	0	266,400	266,400	266,400	266,400	1,065,600
Total component 2	0	1,632,275	1,632,275	1,632,275	1,632,275	**6,529,100**
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	139,500	69,750	69,750			279,000
Activity 3.1.2. Organisation of knowledge exchange platforms		10,000	10,000	10,000	10,000	40,000
Subtotal output 3.1	139,500	79,750	79,750	10,000	10,000	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		33,750	33,750	33,750	33,750	135,000
Subtotal output 3.2		33,750	33,750	33,750	33,750	135,000
Total component 3	139,500	113,500	113,500	43,750	43,750	454,000
Annual projections	**810,450**	**2,445,225**	**1,873,025**	**1,753,275**	**1,676,025**	**8,558,000**

Budget type	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total (USD)**
Activities cost	$810,450	$2,445,225	$1,873,025	$1,753,275	$1,676,025	$8,558,000
Execution cost	$62,369	$188,175	$144,141	$134,925	$128,980	$658,590
Project Cycle Management fee charged by the Implementing Entity	$74,190	$223,839	$171,459	$160,497	$153,425	$783,410
TOTAL	$947,009	$2,857,239	$2,188,625	$2,048,697	$1,958,431	**$10,000,000**

17. IE Fees Breakdown

IE Fees Breakdown of M&E Supervision	Responsibility	Budget (USD)	Frequency
Technical supervision visits	IFAD, PCU, Government	80,000	Biannually
Training workshops on M&E	IFAD, PCU	50,000	2025
Mid-term evaluation	IFAD, PCU	90,000	2028
Final evaluation	IFAD, PCU	100,000	2030
Supervision missions and policy support	IFAD, PCU	23,000	Annually
Portfolio management	IFAD, PCU	120,000	Biannually
Oversight	IFAD, PCU	112,000	Biannually
Financial management	IFAD, PCU	80,000	Biannually
Knowledge management activities and publications	IFAD, PCU	128,410	Biannually
		783,410	

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
0211-252591

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

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. Screening and categorization

a. Guidance for Implementing Entities on Compliance with the Adaptation Fund Environmental and Social Policy

9. The Adaptation Fund (AF) has established an Environmental and Social Policy (ESP) to guide projects and programmes it supports. Approved in November 2013 and revised in March 2016, this policy seeks to maximize

positive environmental and social outcomes and minimize potential risks and adverse impacts. Effective management of these risks is crucial to the success of projects/programmes and their desired outcomes. The ESP encompasses 15 principles. Out of these 15 principles, the following 12 have been identified as relevant to the proposed project: Principle 1: Compliance with the Law; Principle 2: Access and Equity; Principle 3: Marginalized and Vulnerable Groups; Principle 5: Gender Equality and Women's Empowerment; Principle 8: Involuntary Resettlement; Principle 9: Protection of Natural Habitats; Principle 10: Conservation of Biological Diversity; Principle 11: Climate Change; Principle 12: Pollution Prevention and Resource Efficiency; Principle 13: Public Health; Principle 14: Physical and Cultural Heritage; and Principle 15: Lands and Soil Conservation.

10. This Environmental and Social Management Plan (ESMP) outlines how the project will adhere to the AF guidelines. The Adaptation Fund guidelines and Principles are detailed in the table below.

Table 2: Principles to Guide Screening and Management of Environmental and Social Impacts of planned activities for the proposed activities

Principle	Explanation
Principle 1: Compliance with the Law	Compliance with the Law Projects/programmes supported by the Fund shall follow all applicable domestic and international law. In this regard, the Implementing Entity (IE) will ensure that the project/programme comply with applicable domestic and international law as described at section 2 above. In support of the Proposal, the IE will provide, when relevant, a description of the legal and regulatory framework for any project activity that may require prior permission (such as planning permission, environmental permits, construction permits, permits for water extraction, emissions, and use or production or storage of harmful substances). For each such a requirement, the IE will describe the current status, any steps already taken, and the plan to achieve compliance with relevant domestic and international laws.
Principle 2: Access and Equity	Projects/programmes supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. Projects/programmes should not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups. The process of allocating access to project/programme benefits should be fair and impartial. A fair process treats people equally without favouritism or discrimination, and an impartial process treats all rivals or disputants equally. Furthermore, the project/programme will be designed and implemented in a way that will not impede access of any group to the essential services and rights mentioned in the Principle. Possible elements that may be considered The IE can demonstrate compliance of the project/programme by describing the process of allocating and distributing project/programme benefits, and by showing how this process ensures fair and impartial access to benefits. It may also state clearly that there will be neither discrimination nor favouritism in accessing project/programme benefits. The IE may demonstrate that the project/programme does not impede access of any group to the essential services and rights indicted in the principle. ESP Guidance document 7 In addition, the project/programme can use a risk analysis to identify and assess the risk of impeding access to essential rights and services, and of exacerbating existing inequalities. The IE may conduct stakeholder mapping in order to identify the potential beneficiaries, rivals, disputants, marginalized, or vulnerable people.
Principle 3: Marginalized and Vulnerable Groups.	Projects/programmes supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS. In screening any proposed project/programme, the implementing entities shall assess and consider particular impacts on marginalized and vulnerable groups. Impacts on marginalized and vulnerable groups must be considered so that such groups do not experience adverse impacts from the project/programme that are disproportionate to those experienced by others. Marginalized groups are groups of people who are excluded from the normal economic and social fabric of societies, thus lacking access to basic essential services and facilities. Furthermore, they lack the means to improve themselves (motivation, social capital, skills and knowledge) and have

	low resilience. Vulnerable groups are groups of people unable or with diminished capacity to anticipate, cope with, resist, and recover from the impacts of (external) pressures, facing a higher risk of poverty and social exclusion than the general population. Vulnerability can stem from belonging or being perceived to belong to a certain group or institution, and is a relative and dynamic concept. Using accepted methods based on disaggregated data, where possible, the IE should identify and quantify the groups mentioned in the principle (children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS) as well as any groups identified additionally such as seasonal migrants or illegal aliens. If any are present, the IE should: Describe the characteristics of the marginalized or vulnerable groups. • Identify adverse impacts that each marginalized and vulnerable group are likely to experience from the project/programme, taking into consideration the specific needs, limitations, constraints and requirements of each group. For example, a small detour or the construction of a minor obstacle for most able-bodied people could be an insurmountable obstacle to wheelchair users or persons with certain disabilities. These are examples of disproportionate adverse impacts. ● Describe how the impacts are not disproportionate compared to no marginalized and non-vulnerable groups, or how they can be mitigated or prevented so as not to be disproportionate. These mitigation measures could be design or operational features of infrastructure, or access guarantees to ESP Guidance document 8 project benefits for those without complete administrative files such as refugees and internally displaced persons or tribal groups. ● Describe monitoring that may be needed during project/programme implementation for the possible occurrence of disproportionate adverse impacts on marginalized and vulnerable groups, as situations may change over time (e.g. the arrival of refugees or internally displaced persons).
Principle 4: Human Rights	Projects/programmes supported by the Fund shall respect and where applicable promote international human rights. The Universal Declaration of Human Rights (UDHR) of 10 December 1948 provides a common standard of achievements for all peoples and all nations by setting out fundamental human rights to be universally protected. A number of human rights bodies were created based on the UN Charter, including the Human Rights Council, and under the international human rights treaties to monitor their implementation. The Office of the High Commissioner for Human Rights (OHCHR) supports the different human rights monitoring mechanisms in the United Nations system.8 Promotion of human rights in the project/programme will be achieved by creating awareness with all involved in the project/programme operations, including design, execution, monitoring, and evaluation, about the Universal Declaration of Human Rights as an overarching principle in the implementation of the project/programme. The text of the UDHR is freely available in 438 languages.9 Possible elements that may be considered Information that the IE may consider when assessing the project/programme potential risks with regard to this principle: • When the host country or countries of the project/programme are cited in any Human Rights Council Special Procedures, be they thematic10 or country11 mandates, the IE may provide an overview of the relevant human rights issues that are identified in the Special Procedures and describe how the project/programme will address any such relevant human rights issues. • Human rights issues should be an explicit part of consultations with stakeholders during the identification and/or formulation of the project/programme. The findings on human rights issues of the consultations should then be included in the project/programme document, and details of the consultations added as an annex. 8 The Human Rights Council uses so-called Special Procedures, which are mechanisms to address either specific country situations or thematic issues in all parts of the world. Special Procedures' mandates usually call on mandate-holders to examine, monitor, advise and publicly report on human rights situations in specific countries or territories, known as country mandates, or on major phenomena of human rights violations worldwide, known as thematic mandates. There are 30 thematic mandates and 8 country mandates. All report to the Human Rights Council on their findings and recommendations:

	http://www.ohchr.org/EN/UDHR/Pages/SearchByLang.aspx http://www.ohchr.org/EN/HRBodies/SP/Pages/Themes.aspx http://www.ohchr.org/EN/HRBodies/SP/Pages/Countries.aspx ESP Guidance document • Even if the country or countries where the project/programme will be implemented is not a Party to any of the nine core international human rights treaties, compliance with UDHR, at a minimum, will be monitored.
Principle 5: Gender Equality and Women's Empowerment.	Projects/programmes supported by the Fund shall be designed and implemented in such a way that both women and men 1) have equal opportunities to participate as per the Fund gender policy; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process. In many societies, different roles are allocated to men and women based on cultural, traditional, religious, or other grounds. Gender equality refers to the equal rights, responsibilities, opportunities and access of women and men and boys and girls as well as the equal consideration of the respective interests, needs, and priorities. To ensure gender equality, measures often need to be taken to compensate for or reduce disadvantages that prevent women and men from otherwise operating on an equitable basis. Gender equality and women's empowerment must be applied in the project/programme design and its implementation regardless of the legal and regulatory framework in which the project/programme is set. Principle 5 is guided by Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), which refers to ―anthropogenic interaction‖ — therefore interaction of women and men — within the climate system. The UNFCCC has adopted a number of decisions on gender since 2001. The Paris Agreement acknowledged that Parties in their climate actions should be guided by respect for human rights, gender equality and the empowerment of women in its Preamble while stressing the importance of following ―a country-driven, gender-responsive, participatory and fully transparent approach‖ for adaptation action in Article 7(5). Principle 5 is intended to be consistent with other international conventions, in particular with the Universal Declaration of Human Rights (UDHR), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the International Labour Organization (ILO) core conventions, the Millennium Development Goals (MDGs) and follow-up Sustainable Development Goals (SDGs), and the 2030 Agenda for Sustainable Development. 13 The design and implementation of the project/programme should ensure that it: 1) Does not include elements that are known to exclude or hamper a gender group based on legal, regulatory, or customary grounds 2) Does not maintain or exacerbate gender inequality or the consequences of gender inequality. For example, unequal access to education based on gender may result in lower literacy rates among the disadvantaged group. This lack of literacy may, as a secondary effect of gender inequality, limit access to benefits or increase adverse effects of the project for that particular group. Possible elements that may be considered Information that may be considered by the IE when assessing the potential risks with regard to this principle: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CoreInstruments.aspx https://sustainabledevelopment.un.org/post2015/transformingourworld ESP Guidance document• An analysis of the legal and regulatory context with respect to gender equality and women's empowerment in which the project/programme will take place will identify any obstacles to compliance. In addition, analysis of the cultural, traditional, religious, or any other grounds that might result in differential allocation of benefits between men and women, or of the disproportionate adverse impacts from the project/programme may be appropriate. • Actively pursue equal participation in project/programme activities and stakeholder consultation. Ensure that all positions in the project/programme are effectively equally accessible to men and women, and that women are encouraged to apply and take up positions. • The project/programme design and implementation arrangements will ensure equal access to benefits and that there are no disproportionate adverse effects. This may be achieved by any appropriate means, including, e.g.: ▪ Conducting a gender analysis of the sector the project/programme will support; ▪ Describing the current situation of the allocation of roles and responsibilities in the project/programme sector or area; ▪ Showing how the project/programme will pro-actively take measures to promote gender equality e.g. by organizing separate working groups or conducting separate stakeholder consultations at

	times and locations conducive to soliciting opinions of all.
Principle 6: Core Labour Rights.	Projects/programmes supported by the Fund shall meet the core labour standards as identified by the International Labour Organization. The ILO core labour standards are stated in the 1998 ILO Declaration of Fundamental Principles and Rights at Work. 14 The Declaration covers four fundamental principles and rights, which are further developed in eight fundamental rights conventions: 15 ▪ Freedom of association and the effective recognition of the right to collective bargaining (conventions ILO 87 and ILO 98); ▪ Elimination of all forms of forced or compulsory labour (conventions ILO 29 and ILO 105); ▪ Elimination of worst forms of child labour (conventions ILO 138 and ILO 182); 16 ▪ Elimination of discrimination in respect of employment and occupation (conventions ILO 100 and ILO 111). Regardless of whether the countries where Fund‘s projects/programmes are implemented have ratified the conventions, in the context of the Fund‘s 14 More information on the core labour rights can be found at http://www.ilo.org/declaration/lang--en/index.htm 15 The full text of the eight conventions (ILO Conventions 29, 87, 98, 100, 105, 111, 138 and 182) is available from the ILO information system on international labour standards http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB :1:0 16 ILO 182 includes not employing children in forced, economically exploitive or hazardous work; or in a way that interferes with educations or is harmful to health or physical, mental, spiritual, moral, or social development. ESP Guidance document 11 project/programme operations the IE will respect, promote, and realize in good faith the principles mentioned above and ensure that they are respected and realized in good faith by the EE and other contractors. Where applicable, the project/programme will incorporate the ILO core labour standards in the design and implementation of the project/programme and create awareness with all involved on how these standards apply. The IE will summarize in the Proposal how they are ensuring that the EE is implementing the ILO core labour standards. Possible elements that may be considered Information the IE may consider when assessing the project/programme potential risks with regard to this principle: • If the project/programme host country has ratified the eight ILO core conventions, the risks involved may be smaller. National compliance makes it more likely that a project/programme can and will achieve compliance. • The latest ILO assessments of application of the standards in the project/programme country is available in the reports of the two ILO bodies, The Committee of Experts on the Application of Conventions and Recommendations and The International Labour Conference‘s Tripartite Committee on the Application of Conventions and Recommendations. Other assessments by reputable sources (e.g. the World Bank or regional development banks) may also be used. • Past/present/planned ILO assistance to meet the standards through social dialogue and technical assistance. • Information on any ILO Special procedures relevant to the Member nation or to the project/programme, including details on the triggering representation or complaints. • Demonstration on how the ILO core labour standards will be incorporated in the design and the implementation of the project/programme, as appropriate. • In the case of problematic assessments by ILO of compliance or in the case of Special procedures at the national level, the IE will provide information on how these issues will be addressed, if they are relevant to the project/programme. Reference may be made to a monitoring process during project/programme implementation for future possible problematic ILO assessments or new Special procedures.
Principle 7: Indigenous Peoples	The Fund shall not support projects/programmes that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples. The 2007 UN Declaration on the Rights of Indigenous Peoples (UNDRIP) has its legal foundation in ILO Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries. As part of the system of thematic Special Procedures, the Human Rights Council has appointed a Special Rapporteur on the rights of indigenous ESP Guidance document 12 peoples. The Special Rapporteur promotes good practices, reports on the overall human rights situations of indigenous peoples in selected countries, addresses specific cases of alleged violations of the rights of indigenous peoples, and conducts or contributes to thematic studies. —Other applicable international instruments relating to indigenous peoples‖ means any treaties, conventions, protocols, or other international instruments related to indigenous peoples to

	which the project/programme country is a party and that are currently in force. These include but are not limited to the following United Nations (UN) conventions: 17 ▪ Convention against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment; ▪ Convention on the Elimination of All Forms of Discrimination against Women; ▪ Convention on the Rights of the Child; ▪ International Covenant on Civil and Political Rights; ▪ International Covenant on Economic, Social, and Cultural Rights; ▪ International Convention on the Elimination of All Forms of Racial Discrimination. If indigenous peoples are present in the project/programme implementation area the IE will: 1) Describe how the project/programme will be consistent with UNDRIP, and particularly with regard to Free, Prior, Informed Consent (FPIC) 18 during project/programme design, implementation and expected outcomes related to the impacts affecting the communities of indigenous peoples. 2) Describe the involvement of indigenous peoples in the design and the implementation of the project/programme, and provide detailed outcomes of the consultation process of the indigenous peoples. 3) Provide documented evidence of the mutually accepted process between the project/programme and the affected communities and evidence of agreement between the parties as the outcome of the negotiations. FPIC does not necessarily require unanimity and may be achieved even when individuals or groups within the community explicitly disagree. 4) Provide a summary of any reports, specific cases, or complaints that have been made with respect to the rights of indigenous peoples by the Special Rapporteur and that are relevant to the project/programme. This summary should include information on subsequent actions, and how the project/programme will specifically ensure consistency with the UNDRIP on the issues that were raised. Possible elements that may be considered 17 Links to these conventions are available at www2.ohchr.org/english/law. The ratification status of each convention by country is available. 18 Free, Prior, Informed Consent (FPIC) is the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use. ESP Guidance document 13 Information that the IE may consider when assessing the project/programme potential risks: • Status of ratification of ILO Convention 169 by the country or countries in which the project/programme will be implemented. • Project/programme consistency with the UNDRIP may further be enhanced by creating awareness about the rights of indigenous peoples and how it is a general principle in the implementation of the project/programme.
Principle 8: Involuntary Resettlement.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. Involuntary resettlement refers to both physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood). Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement because of either: 1) lawful expropriation or temporary or permanent restrictions on land use, and 2) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail. This principle does not apply to resettlement resulting from voluntary land transactions in which the seller is not obligated to sell and the buyer cannot resort to expropriation or other compulsory processes sanctioned by the legal system of the host country if negotiations fail. The IE should determine if physical or economic displacement is required by the project/programme and if it is voluntary or involuntary. If it is involuntary, the IE will: 1) Provide justification for the need for involuntary resettlement by demonstrating any realistic alternatives that were explored, and how the proposed involuntary resettlement has been minimized and is the least harmful solution. 2) Describe in detail the extent of involuntary resettlement, including the number of people and households involved, their socio-economic situation and vulnerability, how their livelihoods will be replaced, and the resettlement alternatives and/or the full replacement cost compensation required whether the displacement is temporary or permanent. 3) Describe in detail the

	involuntary resettlement process that the project/programme will apply, and the built-in safeguards to ensure that displaced persons shall be informed of their rights in a timely manner, made aware of the grievance mechanism, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. This also should include an overview of the applicable national laws and regulations. 4) Justify the conclusion that the involuntary resettlement is feasible. ESP Guidance document 14 5) Describe the adequacy of the project/programme organisational structure to successfully implement the involuntary resettlement as well as the capacity and experience of the project/programme management with involuntary resettlement. 6) Build awareness of involuntary resettlement and the applicable Principles and procedures of the project/programme.
Principle 9: Protection of Natural Habitats	The Fund shall not support projects/programmes 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. The Convention on Biological Diversity defines a 'habitat' as the place or type of site where an organism or population naturally occurs. ―Critical natural habitat‖ refers to habitats that are not man-made and that fulfil a critical role for an organism or a population that in the absence or disappearance of that habitat might be severely affected or become extinct. Specific knowledge about a habitat (either common knowledge, traditional insights, or the result of formal scientific research) is always the basis for identifying critical natural habitats. Often, but by no means always, this has resulted in assigning a protected status to such a critical habitat. The principle refers to legal protection at all levels of governance. The absence of legal protection alone cannot be used to conclude that a habitat is not to be considered a critical natural habitat. Reference is made to knowledge about the importance and intrinsic value of a habitat. The precautionary principle prevails where such knowledge is inadequate or inconclusive. The IE will identify: 1) the presence in or near the project/programme area of natural habitats, and 2) the potential of the project/programme to impact directly, indirectly, or cumulatively upon natural habitats. If such habitats exist and there is a potential of the project/programme to impact the habitat, the IE will: 1) 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. 2) 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. Possible elements that may be considered Information that may assist the IE in decision-making include: • The laws and regulations within the country that protect natural habitats, including the different forms of protection, and the institutional arrangements for their implementation and enforcement that apply to the habitat. ESP Guidance document 15 • The critical natural habitats nationwide, their location, characteristics and critical value. These areas may be identified based upon their actual or proposed legal protection status, on common knowledge or traditional or indigenous knowledge, or on scientific information on their value. The legal protection refers to all levels of government, as well as international conventions and agreements like the Convention on Wetlands (Ramsar, Iran, 1971). Scientific knowledge may be in the form of peer-reviewed, published scientific research, or inventory lists prepared by authoritative sources like the UNESCO Man and the Biosphere Programme, the International Union for Conservation of Nature (IUCN) and the United Nations Environment Programme (UNEP). Large non-governmental conservation organizations like the World Wide Fund for Nature, Bird Life International, and Conservation International may also be sources of useful information.
Principle 10: Conservation of Biological Diversity.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species. The Convention on Biological Diversity (CBD) defines biological diversity as ―the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological

	complexes of which they are part; this includes diversity within species, between species and of ecosystems.‖ This definition implies that biological diversity concerns not only living organisms of all taxa but also ecosystem processes, habitats, hydrological cycles, processes of erosion and sedimentation, landscapes, etc. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international treaty governing the movements of living modified organisms (LMOs) resulting from modern biotechnology from one country to another. The IE will identify: 1) the presence in or near the project/programme area of important biological diversity; 2) potential of a significant or unjustified reduction or loss of biological diversity, and 3) potential to introduce known invasive species. If important biological diversity exists and will be significantly or unjustifiably impacted or if the project/programme will introduce known invasive species, the IE will: Biological diversity • Describe the elements of known biological diversity importance in the project/programme area, using any relevant sources of information, such as protection status, status on the IUCN Red List of Threatened Species19 and other inventories, recognition as a UNESCO Man and the Biosphere Programme reserve20, Ramsar site, 21 etc. • Describe why the biological diversity cannot be avoided and what measures will be taken to minimize impacts. 19 International Union for Conservation of Nature, www.iucnredlist.org 20 United Nations Educational, Scientific and Cultural Organization, www.unesco.org/new/en/naturalsciences/environment/ecological-sciences/man-and-biosphere-programme 21 Convention on Wetlands of International Importance, called the Ramsar Convention, www.ramsar.org ESP Guidance document 16 Invasive Species • Describe the invasive species that either may or will be introduced and why such introduction cannot be avoided. • Provide evidence that this introduction is permitted in accordance with the existing regulatory framework22 and the results of a risk assessment analysing the potential for invasive behaviour. • Describe the measures to be taken to minimize the possibility of spreading the invasive species
Principle 11: Climate Change.	Projects/programmes supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change. The main drivers of climate change that are considered here are the emission of carbon dioxide gas from the use of fossil fuel and from changes in land use, methane and nitrous oxide emissions from agriculture, emission of hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, other halocarbons, aerosols, and ozone. Compliance with the principle may be demonstrated by a risk-based assessment of resulting increases in the emissions of greenhouse gasses or in other drivers of climate change. Projects/programmes23 in the following sectors require a greenhouse gas emissions calculation using internationally recognized methodologies: 24 energy, transport, heavy industry, building materials, large-scale agriculture, large-scale forest products, and waste management. The calculations will be used as a basis for a substantiated evaluation of the significance and justification of any increase. Other projects/programmes may demonstrate compliance by carrying out a qualitative risk assessment for each of the mentioned drivers of climate change, plus any impact by the project/programme on carbon capture and sequestration capacity.
Principle 12: Pollution Prevention and Resource Efficiency.	Projects/programmes supported by the Fund shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants. There are two distinct aspects to this principle. Projects/programmes shall on the one hand minimize in a reasonable and cost-effective way the resources that will be used during implementation. This applies to all sources and forms of energy, to water, and to other resources and materials inputs. On the other hand, the project/programme will minimize the production of waste and the release of pollutants (including GHGs). Possible elements that may be considered 22 Including the Cartagena protocol for countries that have ratified it. 23 If a programme contains one project that is in one of the sectors mentioned, the requirement will apply to the whole programme. 24 In line with the Guidelines for National Greenhouse Gas Inventories (2006) of the Intergovernmental Panel on Climate Change (IPCC) www.ipcc-nggip.iges.or.jp/public/2006gl/. Tools are available from a number of sources, including www.ghgprotocol.org, www.epa.gov/climatechange/emissions/ghgrulemaking.html,nd

	www.defra.gov.uk/publications/2011/03/26/ghg-guidance-pb13309 ESP Guidance document 17 IEs may illustrate the minimization of resource use by showing how this concept has been applied in the project/programme design and how this will be effective during implementation. Such illustration may include references to certain design options/alternatives and implementation arrangements. Where international standards for maximizing energy efficiency and minimizing material resource use apply, these will be listed and a description provided on how the design and implementation arrangements of the project/programme are consistent. Preventing waste and pollution may be achieved by preparing a waste and pollution prevention and management plan for the whole project/programme. The nature and quantity of the waste, as well as those of possible pollutants the project/programme may produce, will determine the level of detail and the performance requirements of the waste and pollution prevention and management plan. The plan should include the cost of implementation arrangements and as well as implementation and performance monitoring. The guiding principles of the waste and pollution prevention and management plan should be prevention, a precautionary approach, evidence-based monitoring, and participation and consultation. Implementation of the plan will be duly documented and all those involved in project/programme implementation will be familiarized with the plan and its implications.
Principle 13: Public Health.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health. Possible public health impacts of a project/programme can be determined by assessing its impact on a range of so-called determinants of health. 25 Public health is determined not just by access to medical care and facilities and lifestyle choices, but also by a much broader set of social and economic conditions in which people live. Possible elements that may be considered The project/programme may demonstrate that it will not cause potentially significant negative impacts on public health by screening for possible impacts and including the results of the screening in the Proposal. Health impact screening is a process of rapidly and systematically identifying the project/programme‘s potential impacts on public health. It will typically also elucidate the risk of such effects and determine if a further thorough public health impact assessment and the development of a management plan is needed to prevent potentially significant impacts and to demonstrate compliance with the principle. This screening can thus be the first step in a full health impact assessment, depending on the outcome of the screening. A range of health impact assessment and screening tools exist. For the purpose of demonstrating compliance, a checklist for health impact assessment screening may be used. Such a checklist considers the potential impact of the project/programme on a comprehensive range of health determinants for the population as a whole and for groups within the population. A health impactscreening checklist should include at least the following sections: 1) a section on the background and context of the project/programme; 2) a section with an adequate list of health determinants, with space for a nuanced assessment, for each determinant, the likelihood of impact occurring; and 3) a section identifying the group(s) most likely to be affected by each health determinant 25 Further information on determinants of health is available e.g. from the World Health Organization website http://www.who.int/hia/evidence/doh/en/ ESP Guidance document 18 If the outcome of the screening is that no potentially significant negative impacts on public health are likely, then the screening may be used to demonstrate compliance. If on the other hand the screening concludes that further health impact assessment is needed, then the outcome of that process may be used to demonstrate compliance. Both screening and possibly health impact assessments must comply with the relevant WHO recommended practices.
Principle 14: Physical and Cultural Heritage.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources. The reference for international recognition of physical and cultural heritage is the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage. Convention Articles 1 and 2

	provide definitions of what is considered cultural and natural28 heritage. The List of World Heritage in Danger29 (Article 11 (4) of the Convention) also provides a reference. The IE will identify the presence of cultural heritage in or near the project/programme. If cultural heritage exists, the IE will: • Describe the cultural heritage, the location and the results of a risk assessment analysing the potential for impacting the cultural heritage; and • 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. Possible elements that may be considered Information that may assist the IE when assessing the project/programme potential risks include: • Status of ratification and entry into force of the Convention Concerning the Protection of the World Cultural and Natural Heritage by the country or countries in which the project/programme will be implemented. 26 http://www.who.int/hia/en/ 27 monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science; groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view. 28 natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty. 29 http://whc.unesco.org/en/danger ESP Guidance document 19 • National legal and regulatory framework for recognition and protection of physical and cultural heritage in the country or countries where the project/programme is implemented. • Inventory of the physical and cultural heritage present in the wider project/programme area that enjoys recognition at community, national, or international levels.
Principle 15: Lands and Soil Conservation.	Projects/programmes supported by the Fund shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services. Principle 15 concerns the stewardship of land to either be maintained in its natural state, where possible, or if it is converted to promote and protect its functioning. Soil conservation refers to a set of measures to prevent, mitigate or control soil erosion and degradation. 30 There are two aspects to the principle: promotion of soil conservation and avoidance of degradation or conversion of valuable lands. This applies to soils and lands directly affected by the project/programme as well as those influenced indirectly, or as a secondary or cumulative effect. Soil conservation should be incorporated in project/programme design and implementation. Soil conservation The IE will identify: 1) the presence of fragile soils (e.g. soils on the margin of a desert area, coastal soils, soils located on steep slopes, rocky areas with very thin soil) within the project area or 2) project/programme activities that could result in the loss of otherwise non-fragile soil. If such soils exist and potential soil loss activities will take place, the IE will: • Identify and describe: o Soils that may be impacted by the project/programme; o Activities that may lead to loss of soils; o Reasons why soil loss is unavoidable and o Measures that will be taken to minimize soil loss. • Describe how soil conservation has been promoted to the EE. Valuable lands The IE will identify: 1) productive lands and/or lands that provide valuable ecosystem services within the project/programme area. If such lands exist, the IE will: • Identify and describe: o The lands; o Project/programme activities that may lead to land degradation; o Reasons why using these lands is un-avoidable and the alternatives that were assessed, and o Measures that will be taken to minimize productive land degradation or ecosystem service impacts. 30 The Food and Agriculture Organization of the United Nations defines soil degradation as a change in the soil health status resulting in a diminished capacity of the ecosystem to provide goods and services for its beneficiaries. ESP Guidance document 20 4. Demonstrating

	compliance with the ESP in the project/programme proposal document This section describes how the IE can present the relevant environmental and social risk information in the funding proposal to the Board, at both concept and fully developed proposal stages. In the Proposal Section II.K, from the concept stage, the IE will document and summarize the findings of the screening/assessment process and categorization, including completing the checklist provided in that section of the proposal. Detailed information on the screening process and findings should be made available as an annex. Categorization The outcome of the screening and assessment process is used to determine the environmental and social categorization of the risk for the project/programme. This should be done at the concept stage. The criteria for categorization are described in paragraph 8 of the ESP. 31 The IE may present the findings of the screening/assessment process to substantiate and support its determination of the category for a project/programme. It is not possible to provide universal reference points to quantify severity of environmental and social impacts. Therefore, the IE will provide rationales to support their determination of severity and acceptability so that the determination can be reviewed as necessary. Category C projects/programmes are those for which no adverse environmental or social impacts are anticipated at the time of screening, and that do not require further impact assessment. Nevertheless, during the implementation of category C projects/programmes, low-level monitoring for unexpected environmental or social impacts will be included in the project/programme design and will be reported on annually. Conducting environmental and social assessments As a general rule, the IE, when required, should conduct impact assessment before submitting the fully-developed project/programme document. Environmental and Social Management Plan Risks and/or impacts that are identified and determined as unavoidable in the assessment process should be captured in an environmental and social management plan. This may be a single plan or a collection of plans. This plan should be submitted at the fully-developed proposal stage. The environmental and social management plan should describe the risk mitigation measures that will be taken to ensure consistency with the ESP Principles and applicable host country laws and regulations. Much of the content of an environmental and social management plan will consist of the specific management plans and related activities that have been identified during the impact assessment in accordance with the separate Principles. The Instructions provide additional detail on management and monitoring plans. In some Category B projects/programmes, where the proposed activities requiring an environmental or social assessment represent a minor part of the project, and when the assessment and/or management plan cannot be completed in time or where 31 See footnote 2 supra. ESP Guidance document 2

11. An environmental and social assessment was conducted to ensure that the AF standards are applicable to the targeted community activities. The assessment against the 15 principles and the identified mitigation measures are summarized below:

Table 3: Assessment of CALRF's interventions against AF Principles

Checklist of environmental and social principles	**No further assessment required for compliance**	**Potential impacts and risks – further assessment and management required for compliance**
1. Compliance with the Law	**Yes**	**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.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
1. *Access and Equity*	**Yes**	**Low risk:** In promoting access to financial services 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. It will also target the poor, isolated from political power and decisions, the vulnerable to build their adaptive capacities and resilience. 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 as potential grantees. It has established selection criteria (see Table of Grant screening Criteria). Though these have been established at development, actual cooperatives will only be identified at implementation, therefore consisting USPs, calling for a screening assessment against the 15 AF ESP principles.
2. *Marginalized and Vulnerable Groups*	**Yes**	**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
3. *Human Rights*	**x**	**Low risk:** 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.
4. *Gender Equality and Women's Empowerment*	**Yes**	**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 50% of the direct beneficiaries will be female
5. *Core Labour Rights*	**x**	**Low risk:** The project will support activities that will require human labour. 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.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
6. *Indigenous Peoples*	**x**	**No risks:** Technically, there is no group in Zambia that identifies itself as an Indigenous People. Where the project activities will be implemented, principles of Free, Prior and Informed Consent (FPIC) will be adhered to.
7. *Involuntary Resettlement*	**Yes**	**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 for land rehabilitation and restoration, for adoption of 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.
8. *Protection of Natural Habitats*	**Yes**	**Low risk:** 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.
9. *Conservation of Biological Diversity*	**Yes**	**Low risk:** 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.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
10. Climate Change	**Yes**	**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. Activities centered on assisted natural regeneration and agroforestry systems, for example, will have mitigation benefits to the impacts 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 is less likely to lead to important levels of greenhouse gas emissions through land restoration activities which may include digging the soil.
11. Pollution Prevention and Resource Efficiency	**Yes**	**Moderate risk:** The Project will be the subject of an Environmental and Social Impact Analysis that will consider pollution, public health, physical and cultural heritage, as well as Lands and Soil Conservation will be examined in the analysis. However, water conditions may be affected through establishing small, community-owned processing units for drying, juicing, and preserving local fruits under component 1 but also the construction of cisterns – even if cisterns will certainly improve water use efficiency, particularly as the country continues to experience droughts.
12. Public Health	**X**	**Low risk:** 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.
13. Physical and Cultural Heritage	**Yes**	**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.
14. Lands and Soil Conservation	**Yes**	**Low risk:** Sustainable land management and improved soil fertility are part of the project results. The environmental and social impact analysis at design will determine whether any impacts on land and soil conservation are envisaged and will provide management and monitoring measures if required. 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.

b. Overall Risk Categorisation

12. 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. As has been noted under involuntary resettlements in the overview of the assessment against AF principles Table above, the focus to implement land

restoration and support towards agroforestry systems will overall benefit the socioecological system; ensuring minimum social and environmental disturbances in the targeted places. The climate risk classification of the CALRF is substantial risk category as per IFADSECAP 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.

c. USP ESC Screening

13. 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 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. 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. Also, the project will:

- Look at existing benefit sharing mechanisms and responsibilities in groups – these will be part of proposal and expressions of interest vetting process.
- Government prescribed community engagement practices in natural resources management which include the recognition of community resources with certification by the Director, Forest Department.
- Ensure overall compliance to relevant national policies, regulations and standards.

14. To deliver on its objective, the project will be vigilant and ensure a robust system for screening project activities against the AF principles as reflected in table 2 above. Thus, 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 PIU. Below is a consolidated EMSP table that summarizes project safeguards for each priority of the Adaptation Fund's ESP and GP and reporting plan – as has been assessed at design as relevant to the project.

Table 3 Adaptation Fund's ESP and GP and reporting plan

Summary Management and Reporting Plan	
ESP	**Management Plan and Reporting Requirements**
ESP 1 Compliance with the Law	A) The project will identify: Relevant Laws concerned by contracts with service providers, and include provisions to ensure these Laws are complied with.
	B) Monitoring: The PIU will ensure that the relevant laws are complied with by service providers
	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
ESP 2 Access and Equity	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. Responsibility for the development of these tools will lie with the Gender and Social Inclusion Specialist.
	B) Monitoring: Participation of the project target groups will be closely monitored through the M&E system. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PIU will ensure that no tensions or conflicts arise around the targeting approach, and if they arise, provide the support required through the GRM.
	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)

Summary Management and Reporting Plan	
ESP	**Management Plan and Reporting Requirements**
ESP 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 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.
	B) Monitoring: Participation of the project target groups will be closely monitored through the M&E system. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PIU will ensure that no tensions or conflicts arise around the targeting approach, and if they arise, provide the support required through the GRM.
	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 category and present progress with regards to the gender-related indicators.
ESP 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 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.
	B) Monitoring: Participation of the project target groups will be closely monitored through the M&E system. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PIU will ensure that no tensions or conflicts arise around the targeting approach, and if they arise, provide the support required through the GRM.
	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 women engagement and empowerment through different project activities, including access to financial resources, training etc.
ESP 8 Involuntary Resettlement	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.
	Monitoring: The PIU will closely work with extension workers to ensure that project activities do not lead to any form of involuntary resettlements. For community-owned land for restoration, the project will support communities to get formal recognition of land restoration from the Director, Forest Department as is the case for community forest management groups in Zambia that is based on the Forest Act 2015.
	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 respect for FPIC on project activities on community land, and certification from the Director, Forest Department.
ESP 9 Protection of Natural Habitats	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
	B) 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

Summary Management and Reporting Plan	
ESP	**Management Plan and Reporting Requirements**
	impacts; the severity or significance of the impact; and a demonstration that the impact is consistent with management plans and affected area communities.
	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.
ESP 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.
	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 inventories, recognition as a UNESCO Man and the Biosphere Programme reserve, Ramsar site, etc. ii. Describe why the biological diversity cannot be avoided and what measures will be taken to minimize impacts.
	C) Reporting: 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
ESP 11 Climate Change	A) Monitoring: The project will monitor the implementation of restoration activities and document their (favorable) impact on the local landscape, in terms of improving the productive function of restored land and sustainable management.
	B) Reporting: The project will report both biannually for the progress reports, as well as annually in the PPR to the AF. It will report on: (i) implementation of land restoration activities; and (iii) implementation of other practices that result in carbon storage (e.g. agroforestry).
ESP 12 Pollution prevention and resource efficiency	A) 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).
	B) Monitoring: The PIU and IFAD will monitor adherence to environmental regulations of ZEMA, and will ensure all necessary permits are obtained and cleared by ZEMA before giving no-objections to activities related to establishing small, community-owned processing units for drying, juicing, and preserving local fruits.
	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
ESP 14 Physical and cultural heritage	A) 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.
	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 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.

Summary Management and Reporting Plan	
ESP	**Management Plan and Reporting Requirements**
ESP 15 Lands and Soil Conservation	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.
	B) Monitoring: The PIU with support from extension workers and backstopped by IFAD will monitor adherence practices that enhance the productive function of lands and soils.
	C) Reporting: It is unlikely the project will have any negative impact on Lands and Soil Conservation. 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 Lands and Soil Conservation, the project will develop an ESMP in relation to ESP 15 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.

d. EXCLUSION LIST

15. Table 3 below provides criteria based on which sub-projects and activities which will not be eligible for financing under CALRF :

Table 4: Sub-project and Activity Exclusion List.

No.	*Negative sub project list*
	The proposed CALRF programme will automatically exclude sub-projects that:
1.0	Require physical displacement of people. Temporary economic activities disruptions can be allowed for and treated in line with the SECAP requirements.
2.0	Permanently block the access to or use of land, water points and other livelihood resources used by others
3.0	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)
4.0	Impact on physical cultural resources of national or international importance and conservation value
5.0	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

III. ENVIRONMENTAL IMPACT ANALYSIS

Based on the environment and social risk assessment, the project is categorized as Category B, with some potential adverse impacts and risks which are reversible or mitigated. The table 4 provides an overview of anticipated Environmental and social risks broken down for each component.

Table 5: Anticipated Environmental and social risks per component.

Project/ Components	Expected Concrete Outputs	Potential risks	Mitigation measures
Component 1: Building and promoting equitable diversified, resilient and sustainable community livelihood options	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	Some activities of component 1 present environmental and social risks, including: - Selection of beneficiaries which may favors less marginalized population. - Unsustainable use of chemical fertilizers and pesticides presents a high degree of pollution. - Clearance of land for regenerative agriculture practices	• Setting up of beneficiary identification committees including community representatives • Cutline clearance is to be minimized as far as possible to reduce the potential for any environmental impacts; sensitive habitats should be avoided (wetlands and stream banks); • Clearing should be limited to working areas only, and these include areas for foundations for agricultural infrastructure etc.; 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 re-grassing bare areas; • Sustainable range management must be practiced including rotational grazing, etc.; revegetation, re-grassing of all bare surfaces; minimization of vegetation clearing to working areas only; • Use of existing to access the fields and farm sites and employ drainage control measures and culverts to control natural runoff and overland flow; • Installing soil erosion control structures like, gabions, contour ridges, swells, and check dams; collection of all construction debris for proper disposal at designated landfills; waste from agricultural activities can be further processed into other uses, e.g., organic manure; reuse and recycling must be preferred over disposal of the waste; • Encourage organic farming and limit the use of Agro chemicals like inorganic fertilizers; use Integrated Pest Management (IPM) approaches to minimize pesticide use; conduct awareness training & workshops on safe handling of chemicals
Component 2: Supporting	2.1.1 Financial Service Providers with promising	• FSPs target affluent individuals capable of paying back, women,	• Develop gender-sensitive training programs on sustainable

Project/ Components	Expected Concrete Outputs	Potential risks	Mitigation measures
innovative local financing systems to build community adaptive capacities in climate sensitive sectors	adaptation financial products/services, and innovations relevant to climate-sensitive priority socio-economic sectors identified and supported to increase their community-level financing 2.1.2 Adaptation options based on district-level development plans supported, prioritized and implemented	the youth and differently-abled face exclusion from accessing financial resources, which may lead to elite capture • Gender based violence. • USPs	agriculture, including specific modules on gender equality, to raise awareness and strengthen ownership. • 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. • Regarding the USPs, site specific ESIAs/ESMPs will be carried out and specific mitigation measures will be proposed to ensure that project interventions are aligned with AF 15 principles and Environment and Social Policy
Component 3: Enhancing district-level planning, awareness-raising and knowledge management for evidence-based resilience and adaptive capacity building	3.1.1 Planning and climate change awareness-raising mechanisms set up and institutionalized to enhance resilience and adaptive capacity building.	Activities under component 3 are relevant to capacity building, and knowledge and information management. Therefore, they have negligible risks pertaining to the AF's a5 principles. The risk of elite capture are limited by the project targeting strategy.	

IV. THE ENVIRONMENT AND SOCIAL MANAGEMENT PLAN

16. 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.

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

17. 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.

4.2 GENERAL VIEW OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

a) Positive Impacts

18. Implementation of the proposed project is expected to have the following positive environmental and social impacts:

- ***Capacity development****:* CALRF has a strong component on capacity development at national and subnational levels which will have an overall positive impact on the people's ability to implement activities for adaptation and building of resilience.
- ***Likely positive impact of CALRF on social cohesion****:* CARLF activities will relieve the communities of the hardships that they currently experience due to poor access to resources, inadequate access to food and nutrition because of poorly performing subsistence farming as well as low levels of income. Some families have been torn apart because of women and youth resorting to relocate to urban areas in search of employment and better living conditions. Improved access to resources, general improvements in livelihoods and improved food security can be expected to reverse this trend and restore social cohesion of families.
- Likely increase in employment opportunities: Job opportunities which will benefit locals are likely to be created by the activities that will be happening in the project areas.
- ***Environmental benefits*****:** CALRF activities will result in the regeneration of the habitats for many areas where the activities will be implemented, having a positive impact on animals, including birds. Specific activities may include: (i)limiting clearing, avoiding sensitive habitats, and prioritizing revegetation, (ii) restricting material extraction, ensuring habitat restoration, and practicing sustainable range management; (iii) using existing infrastructure, implementing erosion control measures, and promoting waste recycling; (iv) encouraging organic farming, minimizing agrochemical usage, and promoting safe handling practices through awareness and training; (v) and water quality will improve because of properly managed agricultural activities, re-grassing of bare ground, rehabilitation of sensitive areas like wetlands, sustainably management of grazing in the wetlands, etc.

b). Negative Impacts:

19. The following are negative environmental and social impacts likely to happen during project implementation:

- 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.
- The project areas may suffer from overburdening of services as there will be an increase of people seeking employment or other better socioeconomic life prospects. This may increase the chances for social ills such as competition for resources and the spread of diseases.
- The various activities in the project areas are likely to result in a cumulative increase in waste production. This may result from improvements in economic situation of the communities most likely resulting in increases in

consumer spending, leading to a corresponding increase in solid waste generation. The increases in waste generation will trigger the need for an organised waste management system in the project areas.

- 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.
- Dust accumulation from various activities in the activity areas may cause the dust levels to be a Health hazard or cause poor visibility. The activities include clearing of potential project sites and fields etc.
- The water quality of nearby water sources such as streams in the project areas may degrade due to various sources of impacts which include temporary siltation from cleared surfaces, construction activities within the catchment, littering by increased numbers of people in the project areas.

20. Overall activities related to project implementation may contribute to disturbance of natural systems Enhancement and mitigation measures While measures will be taken to promote the positive impacts of the proposed project, similarly, negative impact will be given equal attention to ensure that any potential adverse impacts are avoided or minimized as much as possible, the matrix below provides detail on mitigation and enhancement plan.

Table 6: AF E&S Screening: Environmental and social impacts of the different activities under CALRF project has been identified as summarized in this table

Project activities	1. Compliance with the law	2. Access and equity	3. Marginalized and vulnerable groups.	4. Human rights	5. Gender equity and women empowerment	6. Core labour rights	7. Ethnic diversity	8. Involuntary resettlement	9. Protection of natural habitat	10. Conservation of biological diversity	11. Climate change	12. Pollution prevention and resource efficiency	13. Public Health	14. Physical and cultural heritage	15. Lands and Soil Conservation
Component 1: Building and promoting equitable diversified, resilient and sustainable community livelihood options															
Activity 1.1.1: Conduct detailed value chain mapping and development of fruit trees, crop and fish value chains															
Activity 1.1.2: Support to land towards land rehabilitation and restoration	√								√	√	√	√		√	√
Activity 1.1.3: Support towards livelihoods diversification		√	√		√										
Activity 1.1.4: Facilitate investments in climate-smart agriculture on 2500 ha focusing on climate resilient seed crop varieties	√	√	√		√				√	√	√	√		√	√
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:	√	√	√		√							√			
Component 2: Supporting innovative local financing systems to build community adaptive capacities in climate sensitive sectors															
Activity 2.1.1.1: Establishing a platform to	√	√	√		√						√				

Project activities	1. Compliance with the law	2. Access and equity	3. Marginalized and vulnerable groups.	4. Human rights	5. Gender equity and women empowerment	6. Core labour rights	7. Ethnic diversity	8. Involuntary resettlement	9. Protection of natural habitat	10. Conservation of biological diversity	11. Climate change	12. Pollution prevention and resource efficiency	13. Public Health	14. Physical and cultural heritage	15. Lands and Soil Conservation
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:	√	√	√		√						√				
Component 3: Enhancing district-level planning and awareness-raising for evidence-based resilience and adaptive capacity building															
Activity 3.1.1: Strengthen climate change and extreme weather-related information systems in 15 target districts															
Activity 3.1.2: Conduct 30 climate change risks awareness-raising campaigns in the 15 target districts															
Activity 3.1.2.1: Support the development of 15 strategies at district and community-levels in target provinces to incorporate climate change priorities and support capacities for implementation															

4.3 Detailed project environment and social impact assessment against 15 principles

Principle 1: Compliance with the Law

No further assessment of potential impacts and risks is required for compliance with the law, since the project complies with all relevant national legislation and policies on agriculture, water management, climate change adaptation, employment, women's rights, among others. Section 'II-E' details the laws that the project is in compliance with as well as the few areas that require the compliance with the national technical standards, including the following.

- Employment Act, No. 15 of 2019
- Zambia's Act of Gender equality and equality (Act No.22 of 2015)
- The Occupational Health and Safety Act, No. 36 of 201
- Land Act, Chapter 184 of the Laws of Zambia
- Zambia's Environmental Management Act - 2011
- Zambia National Policy on Climate Change 2016.
- Zambia's National Public Health Act No.19 of 2020
- Environmental Protection and Pollution Control 1990
- National Heritage and Conservation Act of 1989
- National Agriculture Investment Programme (NAIP) 2014-2018
- National Water Policy 2010
- National Forestry Policy 2014
- National Food and Nutrition Policy (2008)
- National Agriculture Policy 2004-2015

Principle 2: Access and Equity

No further assessment of potential impacts and risks is required for compliance with access and equity since the project will not reduce or prevent communities in the targeted areas from accessing basic services. 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. Primarily, project targeting has been agreed with the government and comprises targeting criteria based on gender and age quotas. The project will advertise broadly through the mass media (radio, social media, town hall and village meetings, workshops etc.) for the implementation of an outreach/mobilisation strategy. Beneficiaries will be explained as they have been throughout the participatory and gender-balanced consultations during the design – that is, the design of the project has been deliberate about social inclusion, and will seek to involve and engage all relevant stakeholders to ensure the benefits reach the neediest in the target areas. The design has thus included for example, gender-responsive indicators to monitor its performance for social inclusion.

Principle 3: Marginalized and Vulnerable Groups

No further assessment of potential impacts and risks is required for compliance with this principle as the entire focus of the project targets marginalized and vulnerable communities in the target provinces to empower them to cope better with the impacts of extreme weather events – building their resilience and adaptive capacity out of extreme poverty while contributing to environmental restoration. Target communities have been consulted during the development of the project, and participative approaches will be pursued to ensure meaningful participation of marginalized and vulnerable groups.

Principle 4: Human Rights

No further assessment of potential impacts and risks is required for compliance with human rights since the project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. Among the Guiding Values and Principles for IFAD's Social Environmental Climate Assessment Procedures (SECAP), is the principle to "support borrowers in achieving good international practices by supporting the realisation of United Nations principles expressed in the Universal Declaration of Human Rights and the toolkits for mainstreaming employment and decent work." Zambia's commitment to Human Rights:

- Ensure that the governing structures and decision-making processes are participatory, fully inclusive and representative of the whole political spectrum and all segments of society, including youth and women, and that marginalized groups find a voice in shaping laws and policies in all spheres of life.
- Ensure accountability for all human rights violations by immediately opening judicial investigations into all credible allegations of violations, prosecuting those responsible, and awarding reparations, including compensation, to victims; and take measures to secure evidence.

- Ensure that development policies are the result of consultative and participatory processes putting the interest and rights of all Zambians at the centre.

Principle 5: Gender Equality and Women's Empowerment

No further assessment of potential impacts and risks is required for compliance with Gender Equality and Women's Empowerment. As required by the Adaptation Fund, gender analysis has been conducted in terms of food and nutrition security; gender-based violence; access to land; poverty; culture context of gender roles; the gendered division of labour; gender-based power structures; gender legal and national strategies; differentiated climate change impacts on gender; and the gender-related issues raised from community consultations. The assessment assisted the project in taking proactive measures to reflect meaningfully gender concerns, including ensuring gender aspects are included in the results framework.

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.

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.

The implementation of activities will therefore offer practical measures to ensure gender inclusion on a continuum – and consistent with the AF Gender Policy, SLIECAZ will reflect gender awareness, gender balance, gender equality, gender equity, gender mainstreaming, gender transformative, women's empowerment and commitment to closing gender gaps.

Principle 6: Core Labour Rights

No further assessment of potential impacts and risks is required for compliance with Core Labour Rights. 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

Principle 7: Indigenous Peoples

No further assessment of potential impacts and risks is required for compliance with Indigenous Peoples. It should be noted that there is no group of people in Zambia that identifies itself indigenous. Thus, this aspect does not seem to be of relevance in terms of further assessment for ESP compliance.

Principle 8: Involuntary Resettlement

As no involuntary physical or economic resettlement is foreseen in any circumstance during project implementation, this aspect does not seem to be of relevance in terms of further assessment for ESP compliance.

Free, Prior and Informed Consent (FPIC) Principle: All consultations will be based on FPIC principle. Should a situation of resettlement or economic displacement arise during the implementation of the project that was not anticipated during design, the implementers and IFAD will ensure that a consultation and negotiation process is undertaken with the potentially affected people,

according to the FPIC and do-no-harm principles. In case no agreement is reached, the project implementers will modify the specific interventions associated with the affected people, or halt them if changes are not possible.

Principle 9: Protection of Natural Habitats

The project is not expected to have any negative impact on critical natural habitats including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by authoritative sources for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional or indigenous local communities. It should be noted that road works, including repairs to crossing points, will be confined to already existing infrastructure – therefore, limiting the possibility to almost zero for project activities to have negative impacts on any natural habitats.
The project will benefit natural habitats through a multitude of approaches. Through targeted activities, the project will ensure that the surrounding natural soils are protected against erosion; and the demo plots will aim to increase soil fertility.

Principle 10: Conservation of Biological Diversity

As with Principle 9, the project is not expected to have any negative impact on critical natural habitats including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by authoritative sources for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional or indigenous local communities. It should be noted that road works, including repairs to crossing points, will be confined to already existing infrastructure – therefore, limiting the possibility to almost zero for project activities to have negative impacts on any natural habitats. Sustainable crop production systems implemented on at least 3,000 ha will overall, have a positive impact on biological diversity.

Principle 11: Climate Change

No further assessment of potential impacts and risks is required for compliance with the climate change ESP, since this is inherently an adaptation project with activities that are based on the adaptive priorities set out in the INDC focused on agriculture, wildlife and water, strategic infrastructure and health systems and enhanced capacity building, research, technology transfer and finance for adaptation and national adaptation strategies. The project will not have any negative impact on climate change. The project does not promote any drivers of climate change (energy, transport, heavy industry, building materials, large-scale agriculture, large-scale forest products, and waste management), it will therefore not contribute to climate change as it is based on the premise of assisting smallholders to adapt in a climate neutral fashion.

The project will support the implementation of climate change related policies, notably the national climate change strategy. The project is aligned to the strategies to adapt to climate change adaptation through protecting community livelihoods; the promotion of alternative Income Generating Activities to diversify incomes; and the promotion of demo plots to teach farmers new climate adaptive techniques that will enhance soil fertility, reduce erosion and support soil biodiversity enhancement.

Principle 12: Pollution Prevention and Resource Efficiency

The project will not pose any significant risks to resource efficiency (water) or pollution risks and no further assessments will be required beyond the procedures already integrated into the project.

Pollution: Infrastructure repairs are not expected to cause intolerable levels dust or noise pollution. However, it is understood that agricultural, livestock, agro-processing, packaging, and marketing operations can produce liquid effluents which can be a hazard to the environment. While this is likely to be minimal given the production levels of target beneficiaries, will be managed through the compliance with the Water Law, by obtaining the relevant Water Conditions and No-Objections. The PMU with support from ZEMA 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.

Resource efficiency: The project will support smallholder farmers with efficient-water irrigation systems to enhance their ability to adapt to droughts. Well-adapted seed varieties to droughts will also ensure that water resources are more efficiently utilized to build adaptive capacities and enhance resilience.

Principle 13: Public Health

- Overall, the project is not expected to directly cause negative impacts on public health. The project is expected to have an overall beneficial impact on the public health with improved access to water, climate-proofed yields and increase quality of produce that will also provide improved food security and nutritional benefits. However, there are consequential health issues such as the

spread of communicable diseases such as HIV/AIDS, and the increase in the prevalence of water-borne diseases (cholera and malaria). In response as mitigation measures, the PMU with support from the Ministry of Health will conduct public health campaigns, awareness raising within local communities and workers through Information, education and Communication (IEC) and distribution of free condoms and counselling and treatment will help alleviate the impacts. As required, the project will provide toilets that are constructed in such a way that they cannot leak into water resources.

Principle 14: Physical and Cultural Heritage

No further assessment of potential impacts and risks is required for compliance with Physical and Cultural Heritage. In the unlikely event that the project would be expected have a negative impact on Physical and cultural heritage, the project will develop a cultural heritage management plan.

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

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 analysing 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.

- Conduct feasibility studies, fencing, introduce proper antiquity education programmes.
- Come up with a Physical cultural resources' management plan.
- Establish procedure for chance finds.

If any natural features, antics, and relics are encountered the trenching should stop immediately and the chance finds procedure be followed.

Principle 15: Lands and Soil Conservation

The project will not have negative impacts on lands and soil conservation. No further assessment of potential impacts and risks is required for compliance with lands and soil conservation. The project has been designed in a fashion that reduces any risk posed by it to the environment, it is also not expected to pose any risks to lands as well as promote soil conservation. However, the potential of risks to land and soil conservation include the following:

- Exposure of land during preparation of land for crop and pasture farming.
- Point source contamination from diesel, lubricants etc. around working areas.
- Increased soil erosion due to vegetation clearing, soil trampling and compaction.
- Increased rapid runoff due to vegetation clearing and soil compaction diminishing infiltration capacity during construction phase.
- Deterioration of soil characteristics due to increased erosion.

In the unlikely event of actual risks to land and soil conservation, the PMU with support from the Ministry of Agriculture will ensure Soil erosion control measures established as the project is underway and restoration programmes to be conducted once an activity has been completed.

Other measures will include:

- 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
- Installing soil erosion control structures like, gabions, contour ridges, swells
- Use existing paths to access the fields and farm sites and employ drainage control measures and culverts to control natural runoff and overland flow.

V. 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.

5.1 Consolidated ESMP

AF Principle	Preventive and mitigation measures	Responsible
Principle 1: Compliance with the law	Failure to Comply with applicable national and international laws. • **CALRF** has and will continuously identify all applicable and relevant Zambian Laws that have to be complied with by **CALRF** PMU, Implementing Partners, contractors, Service providers etc., • Operating Manual and Instructions will include provisions to ensure these Laws are complied with.	**CALRF** PMU with the direct support of the project Legal Officer. PMU will include compliance into day-to-day implementation of the project from inception to completion.
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: • 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. • Use the Grievance Redress Mechanism to make sure individuals and/or communities who will be feeling 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. • 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. 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.	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.
Principle 3: Marginalized and vulnerable groups	• 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. • The project will conduct social inclusion trainings, broad information campaigns and outreach events targeting women and youth. • The project will also include 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.	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. • Stakeholder engagement to be conducted throughout the project life.

AF Principle	Preventive and mitigation measures	Responsible
	• Use the Grievance Redress Mechanism to make sure individuals and/or communities who will be feeling 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.	
Principle 4: Human rights	None	n/a
Principle 5: Gender equity and women empowerment	• 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. • The project will conduct social inclusion trainings, broad information campaigns and outreach events targeting women and youth. • The project will also include 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. • Use the Grievance Redress Mechanism to make sure individuals and/or communities who will be feeling 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. • 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.	**CALRF** PMU- -Gender and Youth Specialist. • The targeting strategy will be communicated at project inception and implementation will be throughout the project cycle. • Stakeholder engagement to be conducted throughout the project life.
Principle 6: Core labour rights	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	**CALRF** PMU With assistance from Ministry of Agriculture • The awareness raising on applicable labour laws will be communicated at project inception and implementation will be throughout the project cycle.

AF Principle	Preventive and mitigation measures	Responsible
	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.	
Principle 7: Ethnic diversity	None	n/a
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	**CALRF** PMU With assistance from Ministry of Agriculture • Excluded at screening stage.
Principle 9: Protection of natural habitat	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 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	**CALRF** PMU With assistance from: • ZEMA • Ministry of Agriculture • Excluded at screening stage. However, should there be any unforeseen case, each affected critical natural habitat to be analysed 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. Thereafter, all necessary protective measures will be carried out during implementation.
Principle 10: Conservation of biological diversity	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. 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	**CALRF** PMU With assistance from: • ZEMA • Ministry of Agriculture • Conservation works will be conducted throughout the project life.

AF Principle	Preventive and mitigation measures	Responsible
	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.	
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	**CALRF** PMU With assistance from: • ZEMA • Ministry of Agriculture The project will report both biannually for the progress reports, as well as annually on the implementation of sustainable pastoral practices.
Principle 12: Pollution prevention and resource efficiency	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.	**CALRF** PMU With assistance from: • ZEMA • Ministry of Agriculture • 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 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,	**CALRF** PMU With the assistance from: • Ministry of Agriculture; and

AF Principle	Preventive and mitigation measures	Responsible
	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	• Ministry of Health • Continuous process throughout the project life.
Principle 14: Physical and cultural heritage	• 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.	**CALRF** PMU with the assistance from the Museum Department • The project will 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	• 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 • Minimisation of vegetation clearing to working areas only • Installing soil erosion control structures like, gabions, contour ridges, swells and catch dams.	**CALRF** PMU with the assistance from Ministry of Agriculture. • The project will report on measures for erosion control 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.

5.2 Monitoring and Reporting

The project will have a comprehensive monitoring and reporting programme that will include quarterly reports, technical reports, annual project reports, the AF PPR tracking, and annual IFAD supervision mission reports, a Mid-term Review and a final evaluation and impact assessment.

The monitoring and reporting of the ESMP will be commensurate with the limited ESMP as required. As presented in table above, ESP compliance for relevant Principles will be reported on through the annual PPR and supervision missions as indicated.

5.3 Implementation Schedule

The implementation schedule of ESMP will be as follows:

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

5.4 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

5.5 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:

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

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 CARLF 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 CARLF 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 CARLF 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.[58] 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, has seriously affected access and participation in empowering socio- economic activities by women. At institutional level,

[58] 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

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.[59] 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.[60]

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 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

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

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[61] 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 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

[61] 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 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[62]. 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[63]. 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[64]. 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 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

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

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[65]. 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.

24. ***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 3).

Table 1: Status in employment among those working in agriculture, forestry and fishing

	Paid employees	Apprentices/ interns	Employers	Self-employed	Unpaid family workers	Total
Men	7.3 %	0.1 %	0.1 %	70.0 %	22.5 %	100 %

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

Women	1.8 %	0.0 %	0.0 %	38.8 %	59.3 %	100%

Source: CSO: Labour Force Survey data 2012

25. 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.

26. ***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[66], 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.

27. ***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 2 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 2: Average harvest per hectare (kgs)[67]

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

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

[67] CSO post-harvest survey raw data 2012

28. 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.

29. ***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.

30. ***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.

31. ***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

32. 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[68]. Female-headed households in the smallholder sector may encounter compounded vulnerabilities, affecting their food security and income[69]. Indigenous and ethnic minority women smallholders, often custodians of traditional farming practices, confront disruptions in local ecosystems that affect their agricultural knowledge and practices[70]. Limited access to resources, including land and credit, constrains women's adaptive capabilities in the smallholder sector[71].

33. 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

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[70] 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.
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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

34. 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.

35. **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

36. **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[72]. Zambia is also regionally and internationally mandated to incorporate consideration of women into environmental planning, and to include them in decision-making processes.

37. **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 3 Other Policies

Policy	Remarks

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

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

38. 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.

39. 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.

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

41. *Gender awareness*: CARLF has engaged different stakeholders who have included women, men, young and old, including the differently abled. By this openness to engaging different stakeholders, the projects 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.

42. *Gender balance*: CARLF 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.

43. *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, CARLF 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, CARLF will provide an opportunity for men and boys to fully engage in promoting gender equality and in changing gender roles that keep women subservient.

44. *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.

45. *Gender gap*: By recognizing the need for gender equality and equity, CARLF 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.

46. *Gender mainstreaming*: As detailed above under gender gap, gender equality and equity, and gender balance, CARLF 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, CARLF 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.

47. *Gender transformative*: It should be noted that CARLF'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.

48. *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.

49. It should be reminded that CARLF'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:

50. Number of beneficiaries (direct and indirect).

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

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

Recommendations

53. 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:

54. 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.

55. 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.

56. 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.

57. 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.

58. 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.

59. 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

60. 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.

61. 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 4: GENDER ACTION PLAN

Outputs/Objectives	Activities	Performance Targets/Indicators	Responsible	Timeframe
Component 1. Building and promoting equitable diversified, resilient and sustainable community livelihood options				
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.).	Conduct a needs assessment on sustainable productions systems for women. Develop gender-sensitive training programs on sustainable agriculture Develop and adopt the CARLF Gender Strategy	Training needs assessment of women identified (baseline: N/A) At least 50% women and girls trained in skills on sustainable agriculture (baseline: 0). The CALRF Gender Strategy developed (baseline: 0)	PMU gender specialist,	Q4 2025– Q4 2027 Q3 2025 -VQ4 2027
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	Conduct at least two diversification livelihood strategies trainings to women and girls that respond to their need	1.1.4.1 At least 50% women and girls trained in livelihood and income generating skills relevant to CALRF the (baseline: 0)	PMU gender specialist, and hired Gender TA	Q4 2025 –Q1 2027
1.1.3: Crop marketing services and infrastructure supported and strengthened in response to climate variability and change - associated extreme weather events and impacts.	Facilitate market linkages between women farmers for crop markets	1.1.5.1 At least 50% women trained in market linkages	PMU gender specialist, and hired Gender TA	Q2 2025– Q4 2026
Component 2: Supporting innovative local financing systems to build community adaptive capacities in climate sensitive sectors				
2.1.1 Innovative and enabling financial platform for various stakeholders established	2.1.1 Define gender-specific mechanisms and agreements with financial service to improve service outreach and facilitate effective and timely access to financial products and services	2.1.1.1 Mechanisms documented on gender-specific mechanisms and agreements with financial service	NTDC, PMU gender specialist, and hired Gender TA	Q3–Q4 2025

2.2.1. Improved and innovative financing tools to integrate climate risk management and monitoring of climate change adaptation investments identified and rolled out:	2.2.1 Provide 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.	2.2.1.1 Innovative tools identified accessible to women	PMU gender specialist	Q1 2025
2.3.1 Catalytic financing established	2.2.3.1 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[73]	2.3.1.1 At least 50% participation of women in SACCOs and other groups	PMU gender specialist	Q4 2025– Q4 2026
2.2.4 Adaptation options based on district-level development plans supported, prioritized and funded through the investment plans	2.2.4 Develop adaptation measures that that include and respond to women's needs 2.2.5 Create women champion groups in climate change adaptation campaigns	2.2.4.1 Adaptation options identified and documented 2.2.5.1 At least 7 groups created for CALRF	PMU gender specialist	Q4 2025– Q4 2027
Component 3: Enhancing district-level planning, awareness-raising and knowledge management for evidence based resilience and adaptive capacity building				
3.1.1 Planning and climate change awareness-raising mechanisms set up and institutionalized to enhance resilience and adaptive capacity building	3.1.1 Conduct awareness-raising campaign attracting more female participation 3.1.2 Conduct training needs assessment for female beneficiaries 3.1.3 Gender-awareness trainings (including Gender-based Violence – GbV) 3.1.4 Train women to form groups and strengthen their leadership and negotiation skills to make informed decisions during the community planning process.	3.1.1.1. At least 50% women participation in project activities 3.1.2.1 At least 50% women participation in project activities 3.1.3.1 At least 80% of the CALRF's male and female beneficiaries report improved knowledge on the Act protecting women against harassment (baseline: 0)[74] 3.1.4.1. Increase number of women in leadership positions to at least 20% (baseline: 0)	PMU gender Specialist and the Gender TA	Q4 2025 Q1 2026 Q3 2026

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

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[73] These measures would include time-saving technologies

[74] The expected learning outcomes of this training is male and female staff have improved knowledge about harassment and key provisions of the law about harassment

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Annex 3 ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS ANALYSIS

Annex 4: Community consultations

Community consultations in Central Province for CARLF Project Development

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ZAMBIA

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

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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. CARLF 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 CARLF project. Therefore, community voices are reflected in the project. In this way, CARLF 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 CARLF's target districts.

The first picture, featuring a clear blue sky, depicts a landscape in a CARLF-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 CARLF's target districts*

ADAPTATION

CLIMATE CHANGE ADAPTATION MEETING

Stakeholder Consultation Forum - Sekelaga District

Attendance Register

Date: 11/11/2022

S/N	FULL NAMES	NRC	MOBILE NUMBER	SIGNATURE
1	Mukepa Frank C	153637/35/1	0763179995	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]
4	Chilimina [illegible]	[illegible]	0968782464	[illegible]
5	Chitembi [illegible]	[illegible]	[illegible]	[illegible]
6	Mule [illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]
10	Habula Gerson	[illegible]	0979277492	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]
12	Nsama Christine	[illegible]	0979505813	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]
14	Kabaso Cosmas	[illegible]	0979663774	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible] Kelvin	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]
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33	[illegible]	[illegible]	[illegible]	[illegible]
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35	[illegible]	[illegible]	[illegible]	[illegible]
36	[illegible]	[illegible]	[illegible]	[illegible]
37	[illegible]	[illegible]	[illegible]	[illegible]
38	[illegible]	[illegible]	[illegible]	[illegible]

Adaptation Fund (AF) Proposal Design Mission

Stakeholder Consultative Meeting at FAO Country Office

Date: 11/11/2022

Attendance List

Name	Organization	Designation	Email address
[illegible]	[illegible]	Director	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	IFAD	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Consultant	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Economist	[illegible]
[illegible]	RUFEP	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Consultant	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	MoA	Chief Agricultural Economist	[illegible]
[illegible]	RUFEP	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	IFAD	Country Programme Officer	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
[illegible]	Consultative meeting	Southern	Monze (Hybla)

No	Name of Participant	NRC No.	Gender	Year born	Village/location	Phone	Signature
1	[illegible]	[illegible]	M	1975	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	M	1980	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	M	1985	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	M	1983	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	M	1981	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	M	1982	[illegible]	[illegible]	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
[illegible]	Community Stakeholder Consultative meeting	Southern	Monze (Hybla)

No	Name of Participant	NRC No.	Gender	Year born	Village/location	Phone	Signature
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
[illegible]	Community Stakeholder Meeting	Southern	Monze (Hybla)

No	Name of Participant	NRC No.	Gender	Year born	Village/location	Phone	Signature
1	[illegible]	[illegible]	F	1971	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	F	1986	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	F	1980	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	F	1966	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	F	2000	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	F	1965	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	F/M	1996	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	M	1997	[illegible]	[illegible]	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2018	[illegible]	Southern	Monze (Hybla)

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	[illegible]	[illegible]	F	1974	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	F	1984	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	F	1990	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	M	1982	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	F	1975	[illegible]	[illegible]	[illegible]
	Christine [illegible]		F	1954	[illegible]		[illegible]
	[illegible]	[illegible]	M	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	M	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	M	1995	[illegible]	[illegible]	[illegible]

Date	Activity	Province	District
17/11/2018	[illegible]		

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	[illegible]	[illegible]	F	[illegible]	[illegible]		[illegible]
2	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
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5	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	F	1991	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	M	1965	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	M	1994	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]

ADAPTATION FUND
ATTENDANCE SHEET

Date	Activity	Province	District
17/11/2018	[illegible] Meeting	Southern	Monze

No	Name of Participant	NRC No.	Gender	Year born	Village/ location	Phone	Signature
1	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	M	2000	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	M	1999	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	M	1957	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]		M		[illegible]		[illegible]

[illegible]

No	Name	Sex	[illegible]	[illegible]	Signature
1	[illegible]	M	[illegible]	[illegible]	[illegible]
2	[illegible]	M	[illegible]	[illegible]	[illegible]
3	[illegible]	F	[illegible]	[illegible]	[illegible]
4	[illegible]	F	[illegible]	[illegible]	[illegible]
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7	[illegible]	M	[illegible]	[illegible]	[illegible]
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9	[illegible]	M	[illegible]	[illegible]	[illegible]
10	[illegible]	M	[illegible]	[illegible]	[illegible]
11	[illegible]	F	[illegible]	[illegible]	[illegible]
12	[illegible]	F	[illegible]	[illegible]	[illegible]
13	[illegible]	M	[illegible]	[illegible]	[illegible]
14	[illegible]	M	[illegible]	[illegible]	[illegible]
15	[illegible]	M	[illegible]	[illegible]	[illegible]
16	[illegible]	M	[illegible]	[illegible]	[illegible]
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19	[illegible]	M	[illegible]	[illegible]	[illegible]
20	[illegible]	M	[illegible]	[illegible]	[illegible]
21	[illegible]	F	[illegible]	[illegible]	[illegible]
22	[illegible]	F	[illegible]	[illegible]	[illegible]
23	[illegible]	F	[illegible]	[illegible]	[illegible]

[illegible] Signature: [illegible]

Approved by: STEPHEN MUWIS Signature: [illegible]

Approved by: STEPHEN MUWIS Signature: [illegible]

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.

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 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,	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. 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	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.) 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	• 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 1.1.3.1: Support local level

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
	Sinazongwe, Choma and Monze districts	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.	products/services, and innovations relevant to climate-sensitive priority socio-economic sectors identified and supported to increase their community-level financing	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. *Project districts:* Mkushi, Luano and Chibombo	*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. *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	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 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	• 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 1.1.3.1: Support local level processing and marketing

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
		insurance schemes for farmers are essential for managing climate- related risks.	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	• 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 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	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	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	• Activity 1.1.1.1: Conduct detailed value chain mapping and development of

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
	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	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.	(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 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	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 • Activity 2.1.1.1: Provide tailored financial support to agro dealers and value chains SMEs and strengthen crop weather insurance

Zone	characteristics	Adaptation Challenges and Risks	Project's response (outputs)	Planned activities
				• 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.

Annex 7 Zambia National Policies and Strategies that CALRF is Consistent

National document	Explanation

Zambia 8th National Development Plan (2022 -2026)	With the theme, 'Socioeconomic Transformation for Improved Livelihoods,' the National Development Plan is anchored on four pillars for the country's sustainable development. These pillars are: Economic Transformation and Job Creation, Human and Social Development, Environmental Sustainability, and Good Governance Environment. CARLF is particularly relevant to Strategic Development Area 3: (Environmental Sustainability), Strategy 1 that relates to strengthening climate change adaptation. The design of CARLF is related to the following priority programs under strategy 1 of Strategic Development Area 3 of the Plan: (a) institutional framework strengthening b) climate change mainstreaming c) long-term adaptation planning d) nature-based solutions e) sustainable land, forest and water management f) sustainable agriculture g) climate-resilient infrastructure development)
Zambia National Adaptation Programme of Action (NAPA) in 2007	The NAPA highlights that communities are vulnerable to climatic hazards (drought, flooding, extreme temperatures and prolonged dry spells), which precipitate widespread crop failure, negatively impact food and water security and affect the sustainability of rural livelihoods. It recognizes agriculture as one of the five sectors most vulnerable to climate change impacts.[75] CALRF therefore, is relevant to reducing the agricultural sector's vulnerability through support towards climate-smart agriculture in the target districts, climate resilient varieties, multiplication and dissemination and integrated pest management and soil management, among others.
National Climate Change Response Strategy (NCCRS) in 2010	The NCCRS mission is "to ensure that the most vulnerable sectors of the economy are climate proofed and sustainable development achieved through the promotion of low carbon development pathways".[76] Key actions planned under NCCRS include: to develop sustainable land use systems to enhance agricultural production and ensure food security; to ensure sustainable management and resilience of water resources; and to develop a less carbon-intensive and climate change-resilient energy infrastructure and grow using a low carbon path.[77] CALRF is relevant to NCCRS through support to activities related to community-level coping and management strategies of climate change adaptation initiatives, land rehabilitation and restoration and adoption of sustainable agricultural practices (including procuring more productive and drought-tolerant seeds); aquaculture; crop diversification; install composting and mulching facilities; provide soil testing services; bee-keeping; among others.
Nationally Determined Contribution (NDC) in 2015 and updated in 2020	The NDC intends to reduce CO_2 emissions by implementing: (i) sustainable forest management; (ii) climate-smart agriculture (CSA); and (iii) renewable energy and energy efficiency. Measures identified based on vulnerability assessment of seven key economic sectors (agriculture, water, forestry, energy, wildlife, infrastructure and health) comprise three goals that have strong synergies with mitigation: (i) adaptation of strategic productive systems (agriculture, forests, wildlife and water); (ii) adaptation of strategic infrastructure and health systems; (iii) enhanced capacity building, research, technology transfer and finance.[78] The enhanced finance for adaptation entails looking at different mechanisms including the development of an insurance market against climate change induced risks. CALRF is relevant to the NDC through activities related to intensification of food crop and pasture production in target districts, land rehabilitation and restoration using mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds, sustainable agricultural practices (including procuring more productive and drought-tolerant seeds); aquaculture; crop diversification; install composting and mulching facilities; provide soil testing services; bee-keeping; 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.
National Policy on Climate Change (NPCC) in 2016:	In line with the Vision "A prosperous and climate resilient economy by 2030", the NPCC aims to provide a framework enhancing coordination between sectoral initiatives while promoting a long-term vision to promote sustainable development. The NPCC also provides a framework for attracting finance and investments to achieve sustainable development goals, guiding principles, policy objectives and implementation framework, which are targeted at reversing the negative effects induced by climate change. The NPCC targets investments in climate resilient and low carbon development pathways in order to generate co-benefits and provide incentives for addressing climate change more effectively, including measures promoting environmentally friendly investments in all relevant sectors and facilitating the acquisition of resources for climate change programmes through innovative financial instruments. CALRF is relevant to the NPCC through activities related to building capacities to improve climate

[75] MTENR 2007

[76] Overall, NCCRS addresses five focal areas: adaptation and risk reduction, mitigation and low carbon development, cross cutting issues, governance issues and finance/investment framework. The NCCRS further identifies priorities for adaptation and mitigation, and proposes an institutional structure for CC in Zambia (the National Climate Change and Development Council). The planning process also recognizes the efforts being made to establish the National Climate Change Development Council for CC coordination in the country as stipulated in the NPCC. Furthermore, the National Designated Authority (NDA) for the Green Climate Fund has already been designated and is expected to play a key role of "clearing house or entity" for CC projects to be funded from GCF in Zambia. The process is on-going to select a National Implementing Entity (NIE) and establishing a National Climate Change Fund (NCCF).

[78] GRZ 2015

	change support and extension services in target districts, improving phytosanitary services, scaling up climate smart technologies, identifying and improving innovative financing tools to integrate climate risk management and monitoring of climate change adaptation investments, and strengthening climate change and extreme weather-related information systems to reach target audience and train them in using the information to prioritize adaptation.
Zambia National Agriculture Policy (ZNAP - 2013):	The policy included promotion of sustainable land management technologies, afforestation, community woodlots and agro-forestry, sustainable utilization of rangeland (grassland ecosystem) and pastures for livestock production; and promotion and strengthening of agricultural production methods that are resilient to climate change; promotion of climate change adaptation awareness; integrating climate change adaptation measures in policies, plans and programmes; promotion of environmentally friendly and climate-resilient farming systems. Therefore, CALRF is relevant to ZNAP through activities related to initiatives for boosting community-level adaptation and management strategies of climate change impacts, strengthening sustainable crop production systems under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation), adoption of sustainable agricultural practices (including procuring more productive and drought-tolerant seeds); aquaculture; crop diversification; install composting and mulching facilities, value addition of selected products, establishing crop and livestock production and environmental data hub in target provinces, and developing market linkages for small-scale farm producers (including facilitating improved access to agricultural grants).
National Land Policy of 2017	The National Land Policy provides for the protection of natural resources, environment and landscape management. The policy also provides for the protection of wetlands. The usage of pesticides and other agrochemicals has a potential to cause land contamination if not properly disposed of after usage.
Zambia National Adaptation Plan (NAP) (2023)	The NAP sets clear goals and objectives for adaptation, which include reducing vulnerability, enhancing adaptive capacity, building resilience, and ensuring sustainable development in the face of climate change. NAP's objectives are: • To identify the country's vulnerabilities to climate change and develop medium and long-term adaptation actions to minimise the impacts. • To integrate climate change adaptation into the national, sectoral and sub-national planning and budgeting processes. • To strengthen institutional and technical capacities for the implementation of identified priority adaptation actions. • To strengthen institutional coordination mechanisms for climate change adaptation actions at national, sectoral, and sub-national levels; and • To leverage emerging opportunities for resource mobilization for the implementation of the prioritized adaptation actions to address current and projected climate risks.
Zambia National Resettlement Policy (ZNRP) (2015)	The ZNRP acknowledges that the number of internally displaced persons (IDPs) is likely to increase due to the effects of climate change. Furthermore, through the framework of Disaster Risk Management, the government (through the office of the Vice President–Disaster Management and Mitigation Unit) works with local leaders to identify populations residing in hazard prone areas (mainly flood prone) with a view of relocating them to high grounds. The overall goal of the policy is to establish and protect resettlement schemes that are economically productive, socially secure and environmentally sustainable for persons settled voluntarily or involuntarily. ZNRP's objectives are: • To effectively manage the resettlement schemes and protect against illegal allocation of land in resettlements. • To create opportunities for self-employment on land for the target groups. • To improve access to public social services by creating viable settlements as opposed to unplanned scattered settlements. • To create new growth points for rural investment and development by providing social and economic infrastructure thereby stimulating economic growth.
Zambia Disaster Management Act (ZDMA) (2010)	The Act, No. 13 of 2010 provides for all legal basis for all operations of disasters and emergencies. The Act has been enacted to: • Provide for the maintenance and operation of a system for the anticipation, preparedness, prevention,

	coordination, mitigation and management of disaster situations and the organisation of relief and recovery from disasters; • Establish the National Disaster Management and Mitigation Unit and provide for its powers and functions • Provide for the declaration of disasters; • Establish the National Disaster Relief Trust Fund; • Provide for the responsibilities and involvement of the members of the public in disaster management; and • Provide for matters connected with, or incidental to, the foregoing.
Zambia Climate Change Gender Action Plan (ccGAP) (2018)	The Plan aims to ensure that Zambia's climate change processes mainstream gender considerations to guarantee that women and men can have access to, participate in, and benefit equally from climate change initiatives.
Zambia National Drought Plan (ZNDP) (2018)	The ZNDP intended to contribute to the protection of Zambia's land from over-use and drought for it to be able to provide the required ecosystem services. The Plan has been developed in order to contribute to risk reduction and preparedness.
Zambia National Disaster Management Policy (ZNDMP) (2005)	The formulation of ZNDMP was intended to deal with weaknesses identified in the by then disaster management regime especially: Lack of a disaster management policy that leads to an ad-hoc management of crisis situations. Lack of a legal framework that gives legal authority to the operations of the disaster management system; Vulnerability to subjective political influence which threatens credibility of programs and sometimes complicates implementation of programs; Coordination which was inadequate, and hence posed a substantial risk of costly duplication of efforts among key players. Lack of reliable information about hazards, risks, vulnerabilities and resources; Absence of legal authority on the part of the Chief Executive Officer responsible for disaster management and mitigation unit negatively affected the timely and effective response to emergencies.
2009 National Policy on Environment (NPE - 2009)	The NPE intends to reduce GHG emissions, and CALRF is relevant to this goal through activities related to climate smart technologies, land rehabilitation and restoration using mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds, and those related to the identification of community-level growth production areas and systems that are resilient to climate change.
National Forestry Policy (2014)	The 2014 Policy encourages participatory forest management anchored on the active participation of local communities, traditional institutions, private sector and other stakeholders in the management and utilization of forest resources at all levels of decision making, implementation, monitoring and evaluation. The policy also encourages the definition of stakeholder roles, resource tenure, costs and benefit sharing mechanism related to forest resources management, investments and forest industries development. CALRF is relevant to the National Forest Policy through activities related to supporting towards climate-smart agriculture in the target districts, land rehabilitation and restoration using mixed approaches (including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds), adoption of sustainable agricultural practices (including procuring more productive and drought-tolerant seeds, aquaculture; crop diversification; install composting and mulching facilities); development strategies at district and community-levels incorporating climate change priorities and support capacities for enforcement, establishing crop and livestock production and environmental data hub in target, and development of tools for knowledge generation and management.
National Forest Act (2015)	That Act provides for the participation of local communities, local authorities, traditional institutions, non-governmental organisations and other stakeholders in sustainable forest management; provide for the conservation and use of forests and trees for the sustainable management of forests ecosystems and biological diversity. CALRF is relevant to the National Forest Act through activities related to supporting towards climate-smart agriculture in the target districts, land rehabilitation and restoration using mixed approaches (including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds), adoption of sustainable agricultural practices (including procuring more productive and drought-tolerant seeds, aquaculture; crop diversification; install composting and mulching facilities); development strategies at district and community-levels incorporating climate change priorities and support capacities for enforcement, establishing crop and livestock production and environmental data hub in target, and development of tools for knowledge generation and management.
National REDD+ Strategy 2015	Guided by effectiveness, efficiency, fairness, transparency, accountability, inclusiveness and sustainability, the strategy seeks to realize a prosperous climate change resilient economy by 2030, anchored upon sustainable management and utilization of Zambia's natural resources.

	Relevant to the CALRF are the following strategic objectives: By 2030, good agricultural practices that mitigate carbon emissions adopted; By 2030, threatened and unsustainably managed national and local forests are effectively managed and protected to reduce emissions from deforestation and forest degradation and contribute with ecosystem services across selected landscapes; and By 2030, selected high value forests in open areas are effectively managed and monitored. CALRF is relevant to the National REDD+ Strategy through activities related to supporting climate-smart agriculture, land rehabilitation and restoration using mixed approaches including assisted natural regeneration, agroforestry practices, adoption of sustainable agricultural practices, strengthening climate change and extreme weather-related information systems, training in the use of climate change data to prioritize adaptation options but also adaptation planning, including support towards policy, legal and regulatory environment for innovative financing, and establishment of a crop and livestock production and environmental data hub in target provinces.
National Fisheries and Aquaculture Policy Implementation Plan 2022-2026	The Plan outlines a clear linkage of the policy objectives, measures, activities and strategies, upon which the key performances indicators were developed.it also provides for annual targets, responsible institutions, and the estimated costs over a period of five years. The plan will achieve the following outcomes: 1) improved food and nutrition security; 2) Efficient and effective extension service delivery; 3) Improved information generation, management and innovation; 4) Improved and developed fisheries and aquaculture value chain; 5) Improved aquatic animal health; 6) Sustainable fisheries and aquaculture development; and 7) Integrated fisheries and aquaculture development.
National Fisheries and Aquaculture Policy (NFAP):	The Policy provides guidance on the implementation of fisheries and aquaculture programmes in Zambia. The Policy will lead to the transformation of the capture fisheries and aquaculture sub-sector which are key to boosting production and productivity in the agricultural sector. Through this transformation, the sub-sector will contribute to accelerating economic growth, ending hunger and malnutrition and improving household and national income through both domestic and international trade. Through this Policy, Government intends to transform and modernize the fisheries and aquaculture sub sector, focusing on increasing production and productivity in a sustainable and inclusive manner, in order to overcome the current fish deficit and make the country a net exporter of fish. In this way, the country will realise its aspiration of becoming a regional breadbasket, and increasing fish exports to the rest of the world. CALRF is relevant to the NFAP through activities related to building capacities to improve extension services in target districts; and conducting detailed value chain mapping and development fish value chain.