ADAPTATION FUND

REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund
Board Secretariat
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MSN N7-700 Washington, D.C., 20433 U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category: Regular

Country/ies: Zambia

Title of Project/Programme: Climate Change Adaptation of Livelihoods through Rural Finance (CALRF)

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: International Fund for Agricultural Development (IFAD)

Executing Entity/ies: Ministry of Finance and National Planning / Ministry of Green Economy and Environment

Amount of Financing Requested: 10 M (in U.S Dollars Equivalent)

Project / Programme Background and Context:

1. Climate Vulnerability Context

1. The climate vulnerability context introduces three sections focused on the following contexts: socio-economic and environmental context; historical trends and projections in Zambia; and the impacts of climate change and climate variability. These sections set out the vulnerability context that rationalizes and within which the proposed project is designed to enhance resilience while building adaptive capacities of the poor and vulnerable communities in five provinces in Zambia.

1.1 Socio-economic and environmental context

2. With a population estimated at 19.3 million,[1] Zambia's economic progress has been unsteady. The economy of Zambia fell into a deep recession due 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 is the result of 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 depreciation of the kwacha 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.[2] Within this economic volatility, Zambia's HDI value for 2019 is 0.584 - which puts the country in the medium human development category - positioning it at 146 out of 189 countries and territories.[3] Poverty levels remain stubbornly high with more than 55% of the population living below the poverty line. Climate-induced changes are already exerting considerable stress on the country's vulnerable sectors; hauling particularly the poor into further poverty.[4]
3. The ND-GAIN index ranks in the 137th position, being the 41st most vulnerable country and the 53rd least

[1] Worldometer: Zambia's population
[2] AfDB (2022). Zambia Economic Outlook
[3] UNDP (2020). The Next Frontier: Human Development and the Anthropocene Briefing note for countries on the 2020 Human Development Report: Zambia
[4] Irish Aid (2018). Country Climate Risk Assessment Report: Zambia

ready country to face climate change. The high vulnerability score and low readiness score of Zambia places it in the upper-left quadrant of the ND-GAIN Matrix (see **Figure 1**)[5]. 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. The government's pursuit of expansionary fiscal policy for public investments, despite falling revenues, resulted in widening fiscal deficits (8.3% of GDP in 2019 and 11% of GDP in 2020).

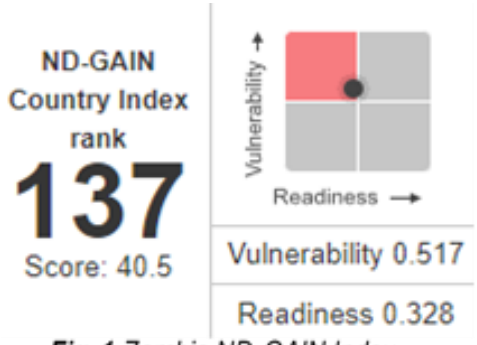

Fig. 1 Zambia ND-GAIN Index

4. While there is economic instability, the natural resource base keeps getting 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.[6] 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.

5. In Climate Change Adaptation of Livelihoods through Rural Finance (CALRF) target provinces (Western, Southern, Central and Luapula – see **Figure 2**), the rate of deforestation differs in some specific way: the rate in Western and Southern provinces is comparatively lower than in Central and Luapula provinces. This is because Western and Southern are already generally denuded, and lie in the first agro-ecological zone that receives the least amount of annual rainfall in the country. On the other hand, Central and Luapula provinces lie in the second and third agro-ecological zones, respectively. In these provinces, deforestation rates are comparatively higher than in southern and western provinces. Between 2001 and 2020, Luapula and Central provinces lost 277,000 ha and 212,000 ha of trees, respectively.[7] Unsustainable production systems such as chitemene system (slash and burn), fuelwood including charcoal production and expansion of agricultural farms which have all increased due to population growth but also limited access to electricity continue to contribute to deforestation in the provinces. It should be noted that charcoal production is demand-driven, particularly in urban centres. The electricity access rate for urban and rural areas is approximately 67% and 4.4%, respectively.[8] During drought years, the country experiences power-outages which increase the demand for charcoal, particularly in urban centres. Therefore, limited access to electricity, lack of accessible alternative energy sources and power outages are important contributing factors to the rate of deforestation in the country.

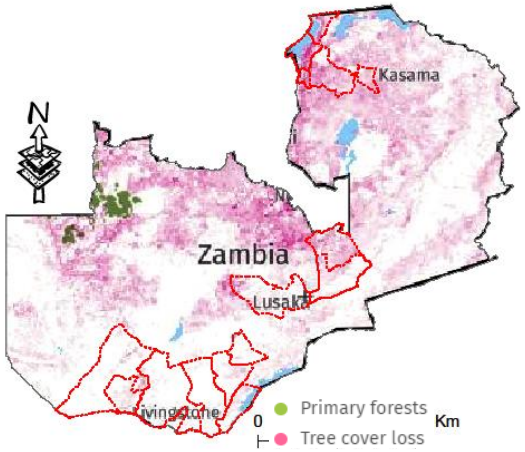

Fig. 2 Tree cover loss in Zambia (2010-2020) and CALRF target districts

6. Other environmental threats in Zambia include: habitat transformation; encroachment; genetically modified organisms; uncontrolled wild fires; climate change; invasive species; unsustainable utilization;

[5] The ND-GAIN Country Index: Zambia
[6] Global Forest Watch (n.d). Tree cover loss in Zambia
[7] Global Forest Watch (n.d). Tree cover loss in Zambia
[8] Government of Zambia (2021). Report of the committee on energy, water development and tourism on the report of the auditor general on the promotion of renewable energy sources in rural areas in Zambia, 2015-2019 for the fifth session of the twelfth National Assembly

pollution; and diseases and pesticides[9] – given the country's low readiness and economic instability as indicated above, all these factors exacerbate the socioeconomic and environmental vulnerable context of the poor who are already vulnerable in rural areas.

1.2 Historical trends and projections in Zambia

7. 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.

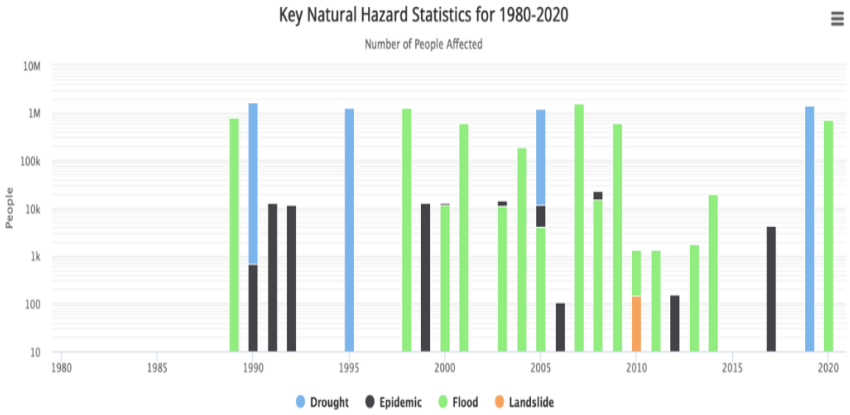

Fig. 3 *Overview of the most frequent natural disaster in Zambia and number of affected people*

8. 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.[10] 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 has changed with a trend towards increased number of floods (see **Figure 3**).[11] Annex 1 presents Zambia's projected climate, presented spatially, as a seasonal cycle, time series, or heat plot, which shows seasonal change over long-term time horizons. While impacts in Zambia will differ by agro-ecological region, crop diversification is accepted as a key adaptation measure.

9. 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. Other equally important sectors that are 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).[12] With constrained asset portfolios, the impacts of climate change on livelihoods are larger for rural households that depend on rain-fed agriculture (Hamududu and Ngoma, 2020).[13] 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 (Libanda and Ngonga, 2018).[14]

10. In other simulations, over the whole country, the number of wet days is likely to decline. In the near future,

[9] Government of Zambia (2015): Zambia's Second National Biodiversity Strategy And Action Plan (NBSAP -2) (2015-2025)
[10] National Policy on Climate Change 2016
[11] WB Portal for Climate Change.
[12] 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
[13] 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
[14] 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

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 4 (A)**).[15] Taking maize as both a political and staple food crop in Zambia 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.[16] 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 recover and overcome the constrains. Climate resilient agriculture, supported by improved access to rural finance, which is targeted at investments that respond to changing climatic conditions, may become the main driver of sustainable rural development.

13. Overall, climate change is projected to affect the southern parts of Zambia more than the northern ones and on average, rainfall is expected to be more variable and rainy seasons are likely to shift.[17] Further, Zambia has witnessed crop failure in the western and southern parts, electricity rationing of up to 15 hours per day due to rainfall variability, and high volatility in the staple maize crop and maize meal prices due to supply shortfalls and limited irrigation.[18] 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 by 2050.

[15] Siatwiinda, M.S. et al. (2021). Climate change impacts on rainfed maize yields in Zambia under conventional and optimized crop management. *Climatic Change 167: 39*
[16] Siatwiinda, M.S. et al. (2021). Climate change impacts on rainfed maize yields in Zambia under conventional and optimized crop management. *Climatic Change 167: 39*
[17] Ngoma et al., 2017; Hamududu and Ngoma, 2019; Mulenga et al., 2017
18 Mulenga et al., 2019b; Chisanga et al., 2018

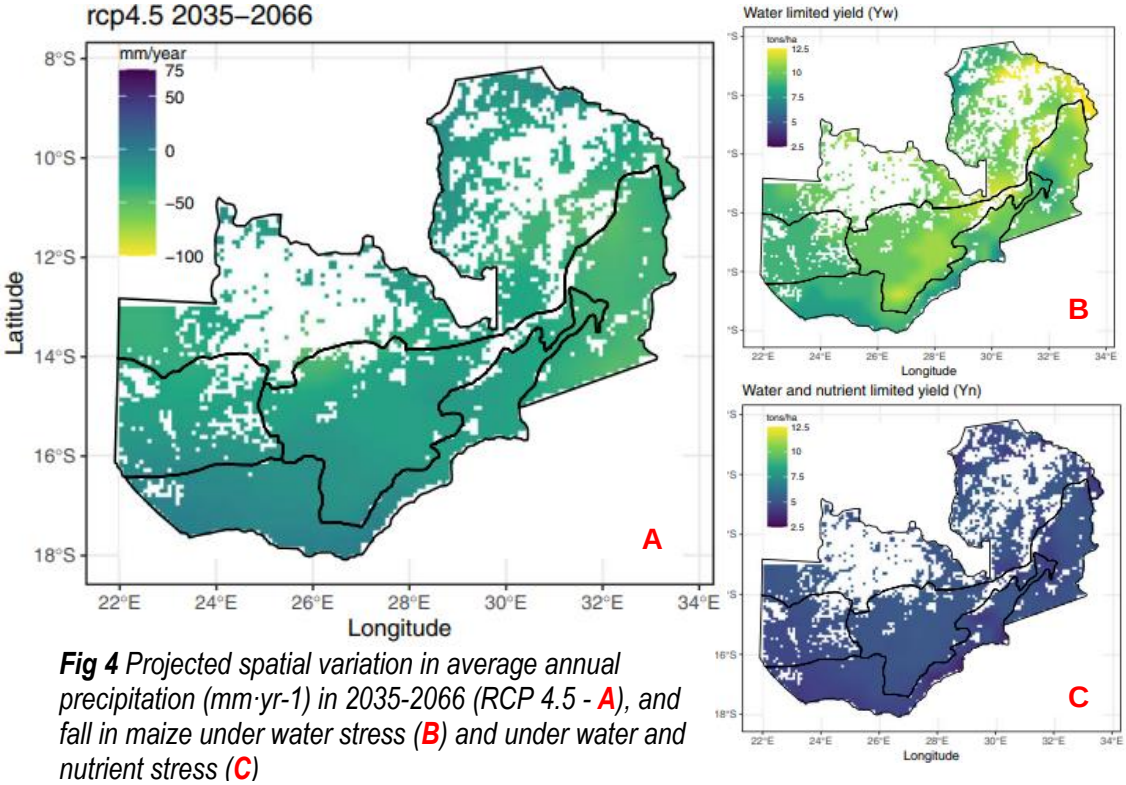

Fig 4 *Projected spatial variation in average annual precipitation (mm·yr-1) in 2035-2066 (RCP 4.5 - **A**), and fall in maize under water stress (**B**) and under water and nutrient stress (**C**)*

14. Under the 1.5ºC and 1.3ºC temperature pathways, the percentage differences between GDP per capita are about 11% and about 18%, respectively (see **Figure 5**).[19] Over the past 30 years, floods and droughts have cost Zambia US$13.8 billion – equivalent to 0.4% of annual GDP growth. Climate variability could cost Zambia US$4.3 billion in lost GDP over the next decade, reducing annual growth by 0.9%.[20]

15. The place of the agriculture sector in the country's economy is crucial. It provides employment to nearly 87-90% of the rural population,[21] 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 reduction in 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:

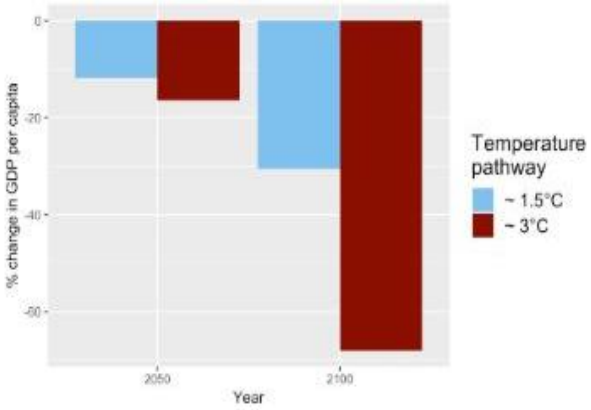

Fig 5. *Impact of climate change on GDP Zambia's GDP*

- 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;

[19] Climate Analytics: The economic damages of 3°C warming for SIDS and LDCs - Zambia
[20] Makondo et al. 2014, MTENR 2007, Sishekanu 2013
[21] Aid Irish, 2017. Zambia Climate Action Report 2016 1–20

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

16. Since over 90% of smallholder production is rain-fed and the market conditions are poor, Zambian agriculture is vulnerable to climate shocks.[22] The impact on food security and nutrition in Zambia will be high because of already high poverty levels and low diversification in food production, particularly in rural areas.[23] Currently, about 63% of human energy requirements in Zambia come from cereals and yet cereals like maize – the staple food – are vulnerable to climate change and yields are projected to dwindle (see Fig 3). Thus, disruptions in cereal production and supply will impact food access.[24] Heavy reliance on maize compromises the country's efforts to build climate resilience and ensure sustainable food and nutrition security, as exemplified by Zambia's low ranking on the global hunger scale.[25]

1.3 Impacts of climate change and climate variability

17. Despite the preponderance of agriculture in the Zambian economy, the sector's role and contribution to reducing rural poverty and increasing the adaptive capacity of communities remains insignificant. 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[26].

18. Changes in rainfall have been substantial with the north experiencing more intense rainfall, while the south has had decreased amounts.[27] 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 areas where communities are poor.

19. A recent assessment of the vulnerability context of Zambia highlights the gravity of the vulnerability of the country following droughts in some parts of the country and floods in others. About 2.3 million people between October 2019 and March 2020, were estimated to be facing the Integrated Food Security and Phase Classification (IPC) Phase 3 or worse food security situation (**Figure 6**). About 16% of the rural population is already in IPC Phase 3, marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies, and about 3% are in IPC Phase 4 and facing large food gaps. Malnutrition is also expected to increase.[28]

20. 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 main causes of reduced crop production contributing to the acute food insecurity conditions across the country. The 2020/2021 rain season has not been different.

[22] GRZ, 2016a; GRZ, 2016b
[23] Verhage et al., 2019; Alfani et al., 2019
[24] Mwanamwenge and Harris, 2017
[25] Mwanamwenge and Cook, 2019; von Grebmer et al., 2019
[26] National Policy on Climate Change
[27] Climate Service Center, 2016; IFAD/WFP 2016
[28] Vulnerability Assessment Committee Results (2019): Zambia

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. Building on the Rural Finance Expansion Programme (RUFEP) that has been supporting community access financial services across Zambia, the implementation of the Climate Change Adaptation of Livelihoods through Rural Finance (CALRF) project will target the Central, Luapula, Southern and Western provinces.

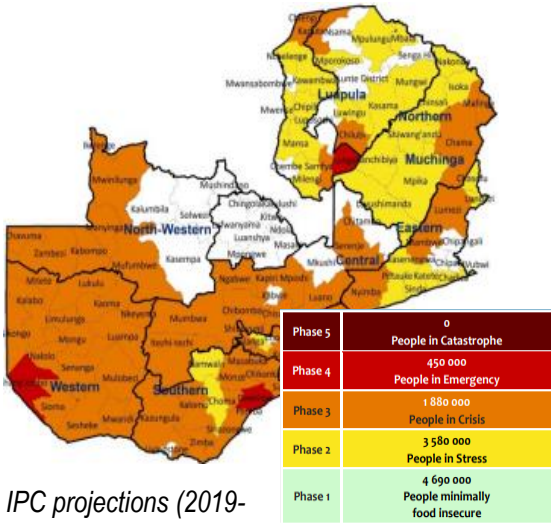

***Fig. 6** IPC projections (2019-2020)*

21. 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.

22. 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.[29] 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, sorghum, millet and groundnuts – crops, which are mostly grown by smallholder farmers in rural Zambia (see **Figure 7**).[30]

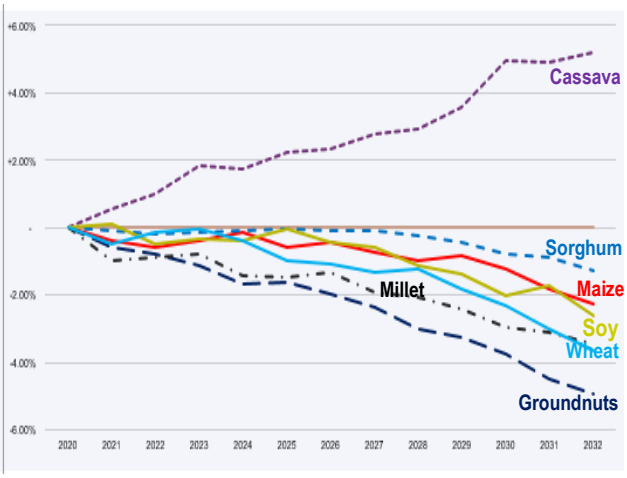

***Fig. 7** Reduction in yields of selected crops*

23. 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 has 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.[31] The 2017/2018 rainfall season had prolonged dry spells, affecting mainly the southern half of the country. The strong drought in 2015/2016, due to a strong El-Niño, affecting most countries in Southern Africa, already 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**).

[29] Ngoma et al., 2019; Hamududu and Ngoma, 2019; Verhage et al., 2018; Mulenga et al., 2017
[30] All data 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.
[31] https://climateknowledgeportal.worldbank.org/country/zambia/vulnerability

Fig. 8 *Examples of impacts of extreme weather events in target provinces*

Barriers to Climate Change adaptation in the Context of Climate Vulnerability

24. 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

25. As has been noted, there are territorial and demographic disparities in wealth distribution and economic development in Zambia that have left rural areas lagging behind. Additionally, rural livelihoods, including socio-cultural and traditional activities almost entirely revolve around the exploitation of natural resources, principally land and forests and associated resources. In the words of Dewees et al,[32] 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.

26. 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.[33] 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

[32] 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.
[33] 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

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 'specialise and die, or diversify and survive'[34] the effects of climate variability and change – considering that diversification of livelihood activities is a survival strategy.[35]

27. Adaptation is neither free nor does it happen in a vacuum. Rural communities, isolated from centres of power with limited and unpredictable government support in terms of social services don't have options and means to sustainably adapt to the impacts of climate change. The government of Zambia does, in some cases, respond to emergencies such as floods through the Disaster Management Unit – but it should be noted that the Unit works on a lean budget, and the support to affected communities tends to be a one time off intervention without sustainability strategies – which is left to communities themselves to essentially figure out how they will cope with climate change related shocks beyond the government emergency support in the form emergency food packages and tents. The approach is more reactive than proactive to ensure a broadened economic base with diversified livelihood income streams and capacities to enable affected communities cope better with the ever changing vulnerable context.

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

28. 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 very 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.

29. It should be mentioned that where financial service providers exist or are accessible by smallholders, the providers lack the relevant knowledge and mechanisms to integrate climate change risk management in their agricultural and rural development portfolios. Therefore, there is a level of disconnect between needs of smallholders and what financial service providers are seeking to provide. However, there are also potential opportunities that lie ahead. There are many benefits associated for e.g with taking a "value chain approach" to climate resilience because climate change affects companies beyond corporate fence lines and national borders and presents important opportunities for lifecycle thinking and creative collaborations. Within this approach, special focus may be given to local communities and the natural environment because of their essential roles within ''business'' value chains. Community risks are business risks because communities provide key resources to value chain providers, as well as a "social license to operate." Though rarely quantified, ecosystems provide natural goods and services of considerable economic value to businesses, such as flood protection, water treatment and circularity. CALRF use the ADAPT (**A**nalyze current baseline conditions, **D**evelop new approaches and technologies, **A**ssess feasibility, **P**rioritize solutions, approaches and practices, and **T**ackle existing barriers and risks) tool. The ADAPT tool will be used as a conceptual framework to guide the development of the project to ensure that all key processes are adhered to and support the coherence between what the project seeks to achieve

[34] 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

[35] 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. Policy Econ. 13, 258–265.

and the climatic and socioeconomic contexts of priority districts.

30. In the context of land and associated resources, access to financial services is further constrained: i) by prevailing land tenure system – where, as mentioned above, customary land is viewed too risky for financial service providers and cannot be collateralized (institutional and policy challenge); ii) lack of market literacy attributed partly to high illiteracy levels in rural areas; (technological and institutional gaps); and iii) extreme rural poverty and high unemployment in rural areas, which stifle the ability and limit the possibility of rural communities to access appropriate technologies and financial service – women, particularly bear the brunt of this challenge (linked to economic and social challenges).

31. One important element to solidify community adaptive capacities in climate-sensitive sectors constitutes local-level institutional arrangements – which in rural areas, are built on mutual trust, respect and loyalty, particularly to one's identified community leadership. There is need to improve the governance of community common pool resources which play a critical role in community adaptive capacities – otherwise, the tragedy of the ungoverned common pool resources such as grazing grounds, fishing grounds and water points become imminent. However, meaningful social organization to strengthen community based organisations and farmer groups or associations, water user associations need financial support and capacity development. In fact, service provision to communities needs to be accompanied with capacity development so that beneficiaries are supported to invest in climate-resilient agricultural production systems, including sustainable land management and integrated water management and fishing practices – critical areas that underpin rural livelihoods but also which are highly sensitive to climate change. Local institutional capacity development is important because financial services to invest in improving the management of both common pool and individual resources strengthens the people's abilities to service borrowed money – including bridging the gender-divide that keeps women from accessing financial services and resources. This approach is holistic but also helps to simultaneously address local institutional, socio-cultural and financial challenges that weaken community and individual resilience and the ability to adapt to the impacts of climate change. Overall, community-level investments in rural Zambia are scanty, yet they are less risky for both service providers and individual beneficiaries – and hold potential in building resilience and adaptive capacities - increasing the resilience of communities and individuals to socioeconomic and environmental shocks.

32. The design of CALRF is cognizant of the fact that land and forest associated resources are a lifeline of rural communities. However, the lifeline is under increasing threat from both anthropogenic factors (such as unsustainable agricultural production systems besides expansion of agricultural land, infrastructure development, fuelwood, illegal logging of high value tree species such as *Pterocarpus chrysothrix* – locally known as *Mukula*) and natural factors associated with climate change such as droughts, floods, temperature and diseases. Therefore, ecosystems services that underpin livelihoods are being modified due to anthropogenic and natural factors. Within this compromised ecological and socioeconomic context, communities are highly constrained, principally because of their specialisation in their livelihood income streams, which are tied to the integrity of natural resources.

33. In the Zambian context, it should be noted that climate-sensitive sectors are at the core of the socioeconomic struggles of the rural poor –sectors that have untapped potential and hold promise for reducing rural poverty, build resilience and increase people's adaptive capacities. Thus, Zambia's approach to climate change adaptation and mitigation needs to be holistically multisectoral to include, *inter alia* ecosystems, agriculture, water resources and health (Libanda, 2020).[36]

34. The approach of the project will therefore, reflect this complex interdependence between human wellbeing and the environment to continue providing the services to humans. The approach will account for the socioecological vulnerability to propose a suite of interventions that will build resilience and improve people's ability to adapt to the impacts of climate change in a sustainable manner – by targeting concrete

[36] Libanda, B., 2020. Multi-model synthesis of future extreme temperature indices over Zambia. Model. Earth Syst. Environ. 6, 743–757. https://doi.org/10.1007/s40808-020-00734-9

actions in sectors that are climate-sensitive, coupled with financial and technical capacity development as enabling environments to support community investments in transformative sectors. As mentioned above addressing the uncertainties created by a changing climate requires robust risk management strategies. Adaptation need not be laborious or expensive, and there will be "low-hanging fruit," opportunities to increase resilience through low-risk and low-cost measures. Responding to the effects of a changing climate will also provide opportunities for climate resilient products and services and new markets.

Project Area and Target Group

35. As has already been alluded to, CALRF will be implemented in 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.

36. Zambia has been hailed as one of the countries besides Mozambique and Nigeria with enormous potential to establish herself as an agricultural economy to compete on regional and international markets as did the Cerrado region in Brazil (using commercial agriculture approach) and the North Eastern region of Thailand (using smallholder farmer approach).[37] However, realizing this potential remains a herculean task, given the different challenges ranging from symbolic funding of the agriculture sector, institutional and policy gaps, impacts of climate change, and land and forest degradation – leading to impoverishing soil fertility status, among others.

37. Poor soils make it more expensive to produce because producers have to use more artificial fertilizers. **Figure 9** shows the Zambian soils – highlighting dominant soils in the target districts for the project. With the exception of Luapula that is dominated by moist good soils and sub-humid good soils (see description of agro-ecological zones below), Western, Southern and Central Provinces are characterised by dry poor, moist moderate, patches of moist poor and sub-humid good soils.

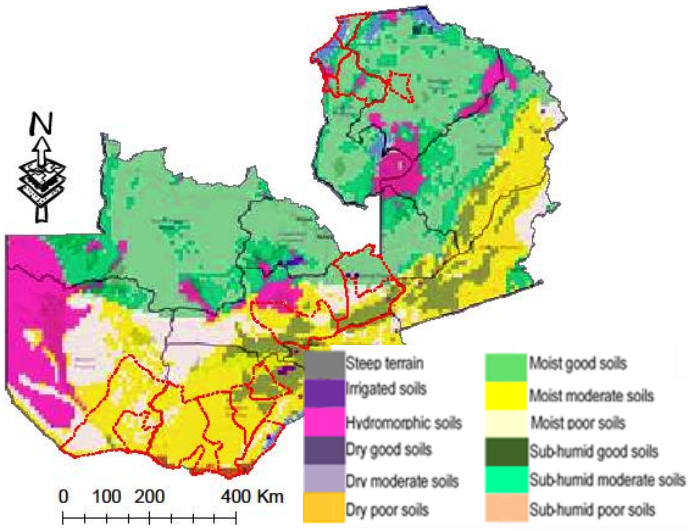

Fig. 9 *Zambian soils and CALRF target districts*

38. Western and Southern lie in the agro-ecological zone I. The mean annual rainfall in the agro-ecological zone 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. Maize, sorghum, groundnuts, sunflowers and cowpeas are cultivated, cattle rearing, and fishing industry (though in decline) are the main socioeconomic activities in this zone. 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 CALRF implementation.

39. The agro-ecological zone II 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.

[37] World Bank (2009). Awakening Africa's sleeping giant: Prospects for commercial agriculture in the Guinea Savannah Zone and beyond.

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 this zone 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. The zone has ample irrigation potential, which allows for a diverse mix of crop and livestock enterprises. Maize is the principal crop, but a wide variety of other crops are grown; including beans, groundnuts, sorghum, cassava, millet, sweet potato, sunflower, cotton, rice, tobacco, paprika along with vegetables and fruits. In this agro-ecological zone lie Mkushi, Luano and Chibombo districts (of Central Province) that have been targeted for CALRF implementation.

40. 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 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. 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.

41. It should be emphasised that the lack of alternative and diversified income streams in the face climate change, particularly extreme weather events and the erosion of ecosystem services through deforestation and land degradation – weaken the adaptive capacities and resilience of particularly rural communities with lean asset portfolios. Rural communities have a vulnerable context that needs to be addressed through broadening their socioeconomic base by diversifying livelihood option, but also improving their access to financial services and capacity to make better informed investment decisions in climate-sensitive sectors. These include agricultural production systems, land restoration and rehabilitation, infrastructure, among others. Other areas of interventions include the promotion of off-farm livelihood opportunities to lessen the reliance and overexploitation of natural resources – which lead to their degradation in some cases, and depletion in others.

42. The design of CALRF has largely been informed by lessons from RUFEP, particularly component 2 on improving the financial situation of communities to enhance their ability to invest in climate-sensitive sectors. RUFEP has set the foundation on which CALRF will build – riding on RUFEP's institutional arrangements at national and sub-national levels, including project partners that include community based organisations and financial service providers in 15 districts. The map in **Figure 11**[38] shows how CALRF's and RUFEP's districts overlap to synergize in some cases, and scale-up best practices in others.

43. 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;

[38] Based on various data sources including: Harris, I. et al (2020) Version 4 of the CRU TS monthly high-resolution gridded multivariate climate dataset. Sci Data 7, 109 & DIVA-GIS Country shapefile data;

- 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 financial service providers and other partners to support the delivery of services and activities of CALRF.

44. **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 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.

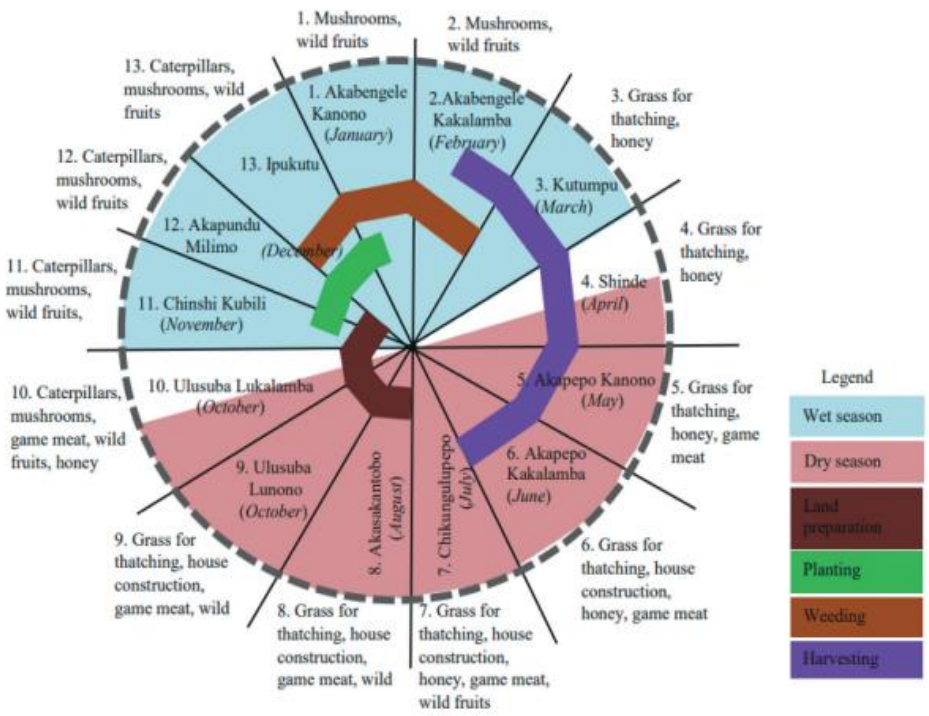

Fig. 10 *Community use of land and forest resources January - December*

45. 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 10**[39] 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.

[39] 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*

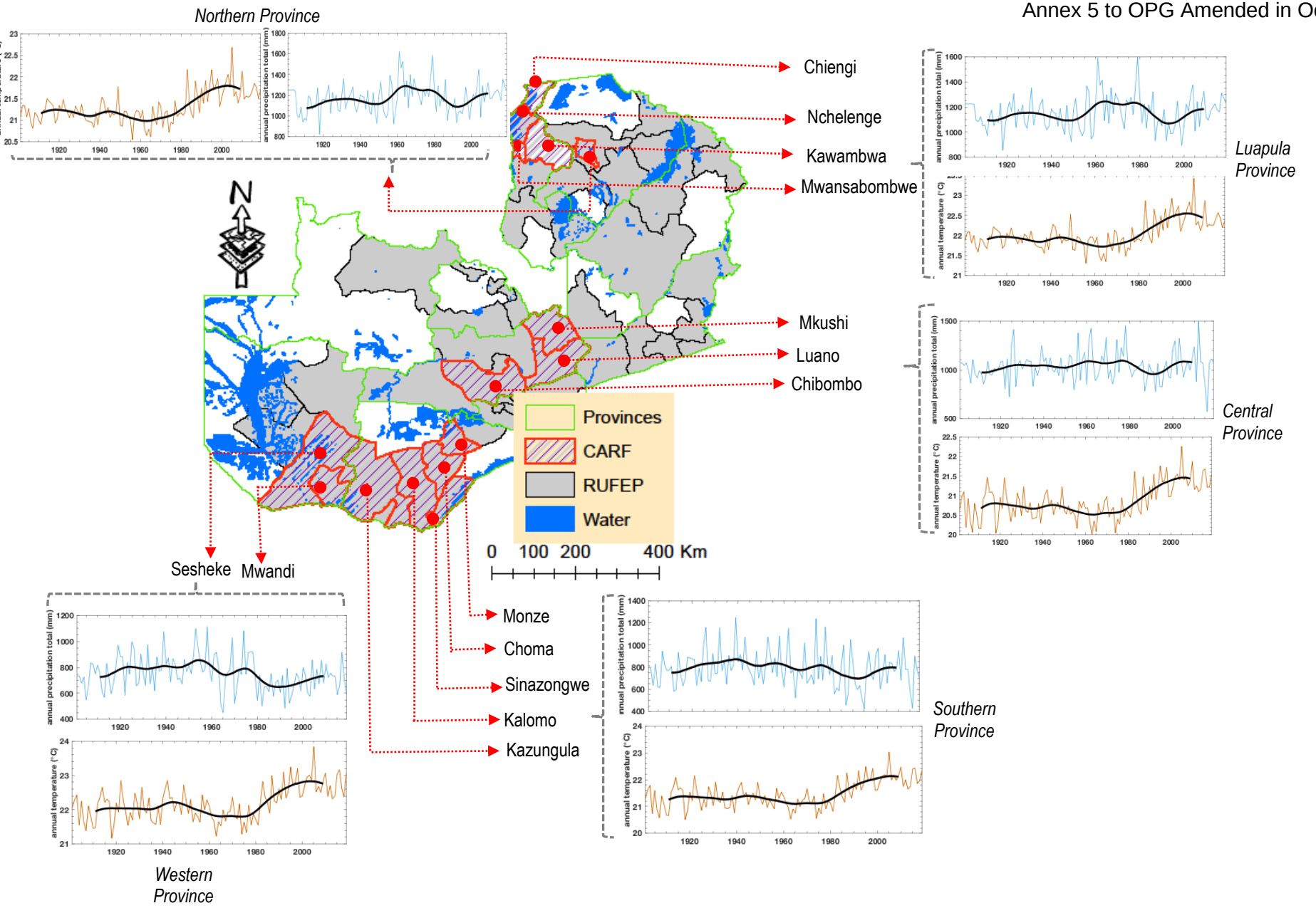

Figure 11 Map showing CALRF and RUFEP districts and historical trends in temperature and precipitation patterns.

46. The project recognizes the differential access to socioeconomic opportunities between rural communities and urbanites, but also cultural biases that limit women's access to build 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 project to achieve its development objective. This will particularly be critical to ensure financial inclusion of women and the youth, 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.

47. All IFAD programmes in Zambia have targeted the rural poor and those adversely affected by climate change. As has been noted, the project will ride on the institutional arrangements of RUFEP while drawing lessons from it as well as from other IFAD-implemented projects in Zambia, particularly the following: Enhanced Smallholder Agribusiness Promotion Programme (E-SAPP); Enhanced- Smallholder Livestock Improvement Programme (E-SLIP); and Smallholder Productivity and promotion Programme (S3P). In this regard, the project will prove to be more cost-effective. In terms of the number of beneficiaries per province and district, the project will directly impact 43,400 people or 8,680[40] households as detailed in the table below:

Province	District	Est. beneficiaries		Total per province (% of pop.)	# of households	District population	Provincial head count poverty[41]
		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 / Programme Objectives

48. 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 others and temperature rise are projected to increase in frequency and intensity, potentially

[40] 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

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

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 the 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 are hardly able to cope with external shocks on their already vulnerable and precarious socioecological context. The primary objective of the project 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 are integral to the primary objective.

49. 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.

Specific objectives

50. Building on the overall objective, the project has two specific objectives that reinforce each other to enhance the resilience and build community adaptive capacities to extreme weather events in five provinces in Zambia. These objectives are:

- *Building diversified and sustainable socioeconomic livelihood opportunities of vulnerable and poor people in five provinces in Zambia*. This objective will be achieved through a holistic approach that will seek to address the key challenges that stifle people's ability to be more resilient to the extreme weather events – the challenges that also weaken people's adaptive capacities to external shocks linked to the climate change phenomenon, such as droughts, floods, disease outbreaks, rise in temperature – and internal shocks such as unsustainable production agricultural systems, land degradation, deforestation, lack of access to markets and other social services due to lack of storage facilities or roads, among others. Interventions will improve the productive capacities of smallholders to ensure food and nutritional security, but also surplus to broaden and diversify income base and income streams, respectively.
- *Supporting innovative financing opportunities for vulnerable community members in five provinces in Zambia*. This objective will focus on facilitating community access to financial services to capacitate them to invest in climate-resilient sectors, including sustainable production systems or technologies. It builds on the first objective, and rationalised on the basis that financial resources can create multiplier effects that contribute to i) improving the management of natural resources with the right informed investment decisions (e.g. irrigation systems, climate resilient seed varieties and animal species); ii) increasing the levels of production and reap the benefits of the economies of scale; and iii) offering alternative means to fall back on should there be external shocks. Another rationale would be that responding to the effects of a changing climate will also provide opportunities for climate resilient products and services and new markets. There are already many worldwide examples of the private sector, 'businesses and value chain providers'' embracing such opportunities. Financial leaders are developing innovative climate-insurance products for communities at increased risk of weather-related natural disasters; engineers are working on more-resilient construction materials and design standards, ICT (information, communications, and technology) suppliers are starting to offer equipment and smart networks to monitor and manage climate-related impacts, and new technologies are being developed and deployed to address increased water stress. Financial and value chain providers that have engaged early on with government on climate change impacts are positively influencing policy and developing new services. The economic possibilities for innovative, forward-looking communities and companies are extensive.

Project / Programme Components and Financing:

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
Component 1: Building and promoting diversified, resilient and sustainable community livelihood options	1.1.1 Rural community-based organisation groups (women, youth & and other producer groups) own adaptation processes associated with climate change: • Community-level identification of resilient growth production areas and systems; • Community-level coping and management strategies of climate change adaptation initiatives, including the role of traditional knowledge; etc 1.1.2 Sustainable crop and animal production systems implemented on at least 1,000 ha of land under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation etc.). • Intensification of food crop and pasture production in target districts • Support towards climate-smart agriculture in the target districts • Climate resilient varieties, multiplication and dissemination. • Integrated pest management and soil management trainings • Land rehabilitation and restoration using mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds. 1.1.3 Targeted individual and community livelihood strategies of the vulnerable members in the target districts established and strengthened in response to the impacts of climate change, including variability, and more specifically increased extreme weather events. • 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 • Value addition of selected products. • Build capacities to improve extension services in target districts; support veterinary services (such as vaccinations, artificial insemination, animal husbandry services in general); management of post-harvest losses; crop disease outbreaks (crop husbandry services in general); 1.1.4 Crop and animal marketing services and infrastructure supported and strengthened in response to climate variability and change -associated extreme weather events and impacts. • Develop market linkages for small-scale farm producer; facilitate improved access to agricultural loans; procure and install small crop processing and storage facilities, including enhancing phytosanitary services; support smallholder irrigation systems; water supply and sanitation infrastructure, among others.	Outcome 1.1:Promoted and diversified livelihood options strengthen the resilience and build adaptive capacities of vulnerable communities (8,680 households) to climate change-related extreme weather events in five provinces in Zambia (Luapula, Northern, Central, Southern and Western), which are very vulnerable to the recurrent extreme weather events	5,839,400
Component 2: Innovative local financing systems to build community adaptive capacities in climate sensitive sectors	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 towards: • 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 etc. 2.2.1.Improved and innovative financing tools to integrate climate risk management and monitoring of climate change adaptation	Outcome 2.1 Vulnerable communities in target provinces access financial services and increase their investments in key climate-sensitive sectors.	

	investments identified and rolled out: 2.3.1 Catalytic financing established to: • finance market driven- profitable climate resilient business solutions • Support food security and livelihood Recovery of 4,000 households through counter-cyclical financing 2.2.4 Adaptation options based on district-level development plans supported, prioritized and funded through the investment plans: • Development strategies at district and community-levels in target provinces incorporate climate change priorities and support capacities for enforcement.		1,560,600
Component 3: Enhance district-level planning and awareness-raising 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: • Strengthen climate change and extreme weather-related information systems to reach target audience and train them in using the information to prioritize adaptation options in component 1; • Develop the taxonomy of viable climate change adaptation investments; • Members at provincial and district-levels trained in climate change and systematic adaptation planning, including support towards policy, legal and regulatory environment for innovative financing; • Climate change risks awareness-raising sessions; • Establish crop and livestock production and environmental data hub in target provinces; • Development of tools for knowledge generation and management	Outcome 3.1 Improved knowledge and awareness of climate change risks to support effective evidence-based adaptation planning at district level	942,000
4. Project activity cost (A)			8,342,000
5. Project/ Programme Execution costs (including M&E) (B)			874,590
6. Total Project/ Programme Costs (A+B)			9,216,590
7. Project/ Programme Cycle Management Fees charged by the Implementing Entity (if applicable) (8.5%) (C)			783,410
8. Total Amount of Financing Requested (A+B+C)			10,000,000

51. Using a broad set of practices, climate resilient agriculture sustainably increases productivity and resilience, reduce and/or remove greenhouse gas emissions where possible and enhances the achievement of food security and development goals.[42] It leads to sustainable food production, improved food security and income for small-scale farmers and agro-pastoralists in disaster-prone areas. Agricultural producers become more resilient to climate related hazards and are able to contribute to restoring degraded natural resources that underpin their critical livelihoods. In this regard, adaptation options in the agriculture and forest sectors need to focus on interventions related to: afforestation and reforestation as adaptation opportunity; use of adapted crops and varieties; conservation agriculture; improve the functional connectivity of ecological networks; improvement of irrigation efficiency; rehabilitation and restoration of rivers and floodplains; adaptation of groundwater management; adaptation of fire management plans; adaptive management of natural habitats; agro-forestry and crop diversification; adaptation of drought and water conservation plans; establishment of early warning systems; monitoring, modelling and forecasting systems; adaptation of integrated land use planning; and water sensitive forest management. Infrastructure development including climate-resilient roads and storage facilities are part of practical interventions to ensure enhanced resilience to the impacts of climate change and variation.

52. The afore-going adaptation measures constitute a suite of grey, green and soft adaptation interventions

[42] Jost, C. (2014). Climate Resilient Agriculture Module

to: i) avoid or reduce exposure to climate risks (such as building new flood defenses, or changing location or activity); and ii) exploit new opportunities (such as engaging in a new activity, or changing practices to take advantage of changing climatic conditions that are exacerbated by anthropogenic activities such as unsustainable agricultural production systems, infrastructure development, fuelwood) – all these contribute to the elevated levels of deforestation in the country, estimated at 250,000 – 350,000 ha per year.[43]

Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	June, 2023
Mid-term Review (if planned)	December, 2025
Project/Programme Closing	December, 2028
Terminal Evaluation	March, 2029

PART II: PROJECT / PROGRAMME JUSTIFICATION

53. 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.

54. Consistent with the barriers that have already been identified, the project is designed around the following three components:
    - Component 1: Building and promoting diversified, resilient and sustainable community livelihood options;
    - Component 2: 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

55. The strategic orientations of the afore-mentioned components to address the climate variability and change resilience and adaptation challenges in the target districts are described below:

Component 1: Building and promoting diversified, resilient and sustainable community livelihood options

56. The project is proposed in 15 rural districts where communities almost entirely rely on rain-fed agriculture for their livelihoods. As has already been noted, the districts face important climate change related extreme weather events. This further worsens peasantry agricultural and pastoral activities that are highly dependent on climatic conditions. Therefore, aspects of food security are threatened, including its availability, access, utilization and stability. Component 1 is built on the understanding that the ability of livelihood systems in the target districts to respond to shocks through various coping strategies is a key determinant of livelihood resilience and vulnerability – ensuring and allowing the spreading of risks over multiple activities, acknowledging that as diversification increases, vulnerability (should) declines because resilience and adaptive capacity are built. The project will therefore, support agricultural households in

[43] Government of Zambia (2014). National Forest Policy

rural economies of target districts to adopt diversification that will lead to better risk-management and more resilient income streams. It is noted here that livelihood diversification strategies are implemented by households in rural environments as a response to threats and opportunities to manage risk and increase or stabilize income and consumption.[44]

57. Broadly, the component will focus on supporting interventions that will improve water use, availability and efficiency; changing farming practices to conserve more soil moisture and nutrients, reduce runoff and control soil erosion; change timing of farming operations; support institutional arrangement to manage equipment and machinery hires for precise and prompt agricultural operations; promote drought tolerant varieties; promote early maturing crop varieties; improve soil conservation practices/technologies; improve sustainable land management; rain water harvesting; increase irrigation efficiency, among others. These will be consistent with component 2 financial support system to promote and sustain investments in these interventions.

58. The decision regarding specific livelihood options will partly be informed by asset portfolios (including infrastructure development, crop and animal 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.[45]

59. Under this component, to promote and diversify livelihoods options to strengthen the resilience and build adaptive capacities of vulnerable communities (8,680 households) to climate change-related extreme weather events in five provinces in Zambia, the project will focus on the following outputs and activities:

60. *1.1.1 Rural community-based organisation groups (women, youth & and other producer groups) own adaptation processes associated with climate change:* Though communities experience impacts of climate variability and change in their production landscapes such as crop failure, disease outbreaks, identification of the adaptation pathways and owning the strategies and processes of doing so are serious challenges. This output will focus on valorizing the role that communities can play in coping with extreme weather events, including the ability of communities to identify adaptation pathways. Key activities will include:

- Community-level identification of resilient growth production areas and systems;
- Community-level coping and management strategies of climate change adaptation initiatives, including the role of traditional knowledge; etc

61. *1.1.2 Sustainable crop and animal production systems implemented on at least 1,000 ha of land under the stress of extreme weather events and human exploitation (floods, droughts, erosion, deforestation etc.):* Addressing impacts of climate change needs to be systemic, and the approach needs to focus on both humans and their production landscapes. This output will focus on sustainable crop and animal production systems and practices that will have also have positive impacts on the crop and animal production landscapes. Key activities will include:

- Intensification of food crop and pasture production in target districts – the intensification will focus on two

[44] FAO. 2016. Diversification under climate variability as part of a CSA strategy in rural Zambia, by Aslihan Arslan, Romina Cavatassi, Nancy McCarthy, Leslie Lipper, Federica Alfani and Misael, Kokwe. ESA Working Paper No. 16-07. Rome, FAO

[45] Terry Cannon, T. (2013). Rural livelihood diversification and adaptation to climate change, in Jonathan Ensor, J. et al (eds), Community Based Adaptation to Climate Change: emerging lessons, Practical Action Publishing.

fronts: first, on more effective delivery of smaller amounts of fertilizer, better targeting of plant or animal protection, and mixed or relay cropping on smaller fields. This focus of intensification is linked to the environmental and social implications[46] of agricultural production systems in the target districts. Second, on increasing agricultural production resulting from improving a combination of production inputs. At full project development, specifics will be furnished regarding intensification to reflect the different climatic factors and the socioeconomic factors in the target districts. It should be noted that in Zambia, the physical environment influences farming systems practiced throughout the country. Soil types and rainfall are the most important factors. Rainfall, apart from having an effect on the soil types, is also an important determinant on the types of crops that could be grown in an area.[47]

- Support towards climate-smart agriculture in the target districts
- Climate resilient varieties, multiplication and dissemination.
- Integrated pest management and soil management trainings
- Land rehabilitation and restoration using mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds.

62. *1.1.3 Targeted individual and community livelihood strategies of the vulnerable members in the target districts established and strengthened in response to the impacts of climate change, including variability, and more specifically increased extreme weather events*: Effective adaptation strategies consider specific contexts to build on existing practices while filling in the gaps – recognizing the nature of existing resource (individual vs common pool resources) and prevailing institutional arrangements – to propose interventions that respond to individual and community-level needs. This output will focus on key concrete livelihood needs that require diversification to enhance resilience and build adaptive capacities. Key activities will include:

- 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
- Build capacities to improve extension services in target districts; support veterinary services (such as vaccinations, artificial insemination, animal husbandry services in general); management of post-harvest losses; crop disease outbreaks (crop husbandry services in general);

63. *1.1.4 Crop and animal marketing services and infrastructure supported and strengthened in response to climate variability and change -associated extreme weather events and impacts:* This output will support and enhance diversified livelihoods under output 1.1.3 to ensure that the livelihood options become more socioeconomically more lucrative with improved systems of production and access to markets. Key activities will include:

- Develop market linkages for small-scale farm producer; facilitate improved access to agricultural loans; procure and install small crop processing and storage facilities; support smallholder irrigation systems; water supply and sanitation infrastructure, among others)

Component 2: Innovative local financing systems to build community adaptive capacities in climate sensitive sectors

64. Lack of financial resources reduces communities' resilience and their ability to respond to the challenges of climate change. Lack of financial resources is tantamount to lack of access to socioeconomic livelihood options, beyond non-monetized and non-marketed non-wood forest products.

65. Financial inclusion in rural areas is low at 55.9% with the national financial inclusion at 69.4%, up from 59.3% in 2015. 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

[46] FAO (n.d) Agricultural Intensification
[47] Saasa, O. (2003). Agricultural Intensification in Zambia: The role of policy and policy processes

as a digital financial service, which would lower its cost. 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.

66. Zambia's financial sector provides opportunities for climate resilient agriculture investments including development and dissemination of services oriented to supporting various actors in climate risk management. Currently the financial sector is dominated by the banking sector, but it consists of a broad array of financial institutions. The banking sector holds nearly 70% of financial sector assets, of which over 80% are held by subsidiaries of majority foreign-owned banks. Other major financial sector institutions include pension funds, microfinance institutions, insurance companies and building societies. Of the 18 licensed commercial banks, five are jointly owned by the government. (World Bank AgriFin Diagnostic Report, 2019).

67. Past interventions of IFAD 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. Experience has shown that thematic interventions are desirable, feasible and profitable in agricultural term finance. Such interventions may include supply/value chain finance, climate change financing, savings-based credit schemes and linkages with development programmes, mobile phone transactions, community-based finance, insurance, and others. In addition, the infrastructure of deposit-taking financial institutions in under-served rural areas is worth support, given the very good returns of such investments for the rural economy and the rural poor. The instruments and tools used to advance access to finance in the above areas may include, but not be limited to well-defined matching grants, selective capacity development, and strategic knowledge management.

68. This means that rural finance can play an important role in strengthening the adaptive capacities of rural communities isolated from steady and predictable government services. Improved financial services offer communities the ability to invest in more sustainable production systems, including investing in better sustainable land management systems. A more innovative, integrative, and participative approach to rural development therefore, needs to be designed to improve the identification and selection of suitable climate change adaptation action, which should in turn improve rural livelihoods. Such an adaptation measure must contribute to stabilizing and improving agriculture yields through rural finance available to small-holder farmers, enabling them to invest in appropriate technologies and know-how – leading to improving incomes.

69. Increased incomes from agriculture also lead to investments in other sectors in rural areas and support the ability of households to make strategic long-term decisions and improve their overall resilience to external shocks by investing in both on and off-farm socioeconomic opportunities.

70. 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. CALRF recognises the importance and role of designing, developing, piloting and rolling-out of financial services such as insurance, savings, credit, lease financing and refinancing to support businesses to adapt to climate change risks. In the context of the target districts, the project is cognizant of the need for cost-effective digital finance technologies that eliminate the need for users to travel long distances, frequently cycling or walking and then using motor vehicles with a huge carbon foot print to access financial services.

71. The target districts and communities are in remote areas with poor quality and degrading natural resources, limited communication facilities and transportation networks and weak institutions. The areas are also highly underserved - with formal financial institutions avoiding failing to offer sustainable services in rural areas (e.g., rural or agricultural development banks). Land tenure issues where customary land cannot be collateralized to access financial services compound the vulnerability of rural communities. It should be reiterated here that while rural communities in the target districts live below the poverty datum line, they are also faced with extreme weather events that are eroding even the meagre means of livelihoods that 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.

72. Under component 2, in consideration of the context of the target districts, this project will support innovative financing tools acknowledging that people living in rural areas need access to financial services to capitalize critical livelihood strategies, purchase agriculture inputs; obtain veterinary services; maintain infrastructure; contract labour for planting/harvesting; transport goods to markets; make/receive payments; manage peak season incomes to cover expenses in low seasons; invest in education, shelter, and health; or deal with emergencies – all of which are critical in enhancing community resilience and building adaptive capacities. The project could thus support apex level, capital intensive investments in commonly owned adaptation assets such as water systems, cold chain facilities, community livestock health management and artificial insemination facilities to accelerate livestock production and agro-processing facilities that harness economies of scale and can be invested collectively.

73. Following up on component 1, the project under component 2 recognises that building and diversifying livelihoods should happen within an enabling institutional arrangement, particularly when investments are in common pool resources that involve the interests of communities as a whole – or resources that are contested by different stakeholders with different interests. Under this component, therefore, the project will support creating an enabling environment for investing in climate-resilient sectors –to diversify livelihoods, build resilience and adaptive capacities. The components fully acknowledges that an enabling environment is required to channel financial, information and technological, leadership, and policy interventions into rural areas to enhance resilience and build community adaptive capacities.[48]

74. Under component 2, to facilitate vulnerable communities' access to financial services and increase their investments in key climate-sensitive sectors in the target districts, the project will focus on the following outputs and associated activities:

75. *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 towards: Lack of financial resources to i*nvest in production systems is one of the most serious hurdles that rural poor people face. This output will focus on bridging the gap between financial service providers and rural communities that need financial services to enhance their resilience and build adaptive capacities – particularly by investing in viable agricultural systems that can improve both animal and crop production in terms of quality and quantity. Key activities will include:

- 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 etc.

76. *2.2.1.Improved and innovative financing tools to integrate climate risk management and monitoring of climate change adaptation investments identified and rolled out:* This output will focus on developing financing engagement tools that will bring service providers and beneficiaries together to support viable investment in climate-sensitive sectors. These tools will ensure that investments are viable, but also that communities are not disadvantaged in their engagements with financial service providers. In this regard, the project will serve as a broker between service providers and communities.

[48] Arun Agrawal (2008). The Role of Local Institutions in Adaptation to Climate Change

77. *2.3.1 Two (2) catalytic investment funds established:* Building on output 2.2.1, the project under output 2.3.1 will support the creation of two catalytic funds; one to support community-level investment initiatives, and the second for emergency food security and livelihood recovery to respond to urgent needs of particularly food insecurity and utter livelihood loss in case of extreme weather in the target districts. The following will be the key activities:

- A demand driven, self-sustaining investment fund to finance viable community based climate resilient investments; and
- Food Security and Livelihood Recovery Fund to support 4,000 households through a counter-cyclical funding mechanism.

78. *2.2.4 Adaptation options based on district-level development plans supported, prioritized and funded through the revolving investment plans:* Institutionalizing climate-resilience strategies in development plans powerfully ensures sustainability and coordinated approach in responding to the impacts of climate change – particularly at local level where, despite experiences of extreme weather events, responses can be piece-meal to a perennial phenomenon. The key activity under this component will structured around:

- Development strategies at district and community-levels in target provinces incorporate climate change priorities and support capacities for enforcement.
- A flexible approach, (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.

Component 3: Enhance district-level planning and awareness-raising for evidence-based resilience and adaptive capacity building

79. 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 improve 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 that has on planning, resilience and building adaptive capacities, the project under component 3 will developing 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 (for both crop and animal production), and food security and nutrition. The project will also support enhancing capacity on understanding climate change risks, responses and planning approaches, for systematic and effective sub-national planning in the targeted 15 districts.

80. 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 the project will focus on the following output with its associated activities:

81. *3.1.1 Planning and climate change awareness-raising mechanisms set up and institutionalized to enhance resilience and adaptive capacity building:* This output will build on output 1.1.1 to ensure community awareness of the challenges and risks of climate change, including building the capacities climate change impact communication by relevant stakeholders to more effectively respond to impacts, and easy access to information systems. Key activities will include the following:
    - Strengthen climate change and extreme weather-related information systems to reach target audience and train them in using the information to prioritize adaptation options in component 1;
    - Develop the taxonomy of viable climate change adaptation investments
    - Members at provincial and district-levels trained in climate change and systematic adaptation planning, including support towards policy, legal and regulatory environment for innovative financing;

- Climate change risks awareness-raising sessions;
- Establish crop and livestock production and environmental data hub in target provinces; and
- Development of tools for knowledge generation and management

B. Economic, social and environmental benefits

82. The design of CARLF is informed by socioeconomic and environmental vulnerable contexts of target districts – paying particular attention to marginalized and vulnerable members who constitute women, the youth and those living below the poverty datum line. The exclusion of women and youth is partly a socio-cultural phenomenon – women are ascribed certain statuses and roles that keep them away from accessing and using resources for their socioeconomic prosperity. Typically in rural Zambia, leadership positions largely remain a privilege of men to the exclusion of women and the youth. In this regard, they are socioeconomically marginalized. This exacerbates the vulnerability of women and the youth in rural areas where poverty levels already are stubbornly high. To ensure the vulnerable and marginalized groups access benefits, CARLF will employ participatory approaches and will continue, during project implementation, to engage these groups in decisions regarding the choice and prioritization of activities, monitoring systems and grievance mechanisms. At this stage of proposal development, vulnerable groups will equitably benefit from all proposed project activities. At full development following additional consultations, the activities and actual benefits which will be refined to reflect context-specific eco-zonal characteristics, local institutions and individual and community asset portfolios.

CARLF will have the following Social and economic benefits:

83. *Community ownership, including vulnerable groups of adaptation processes associated with climate change:* Knowledge is power. Through the capacity building activities, the project will empower vulnerable community members to make their own decisions about the investments in enhancing the resilience of their livelihoods. The end line investments are expected to ensure increased land under climate resilient practices, sustainable land and water resources development, soils fertility improvement, improved ecosystems and services, reduced post-harvest losses and diversification of livelihoods thus reducing vulnerability and any potential negative impacts from agricultural activities.

84. *Gender inclusion*: Zambia is in the medium category with a SIGI gender index value of 35% - and women score as low as 0%, 25% and 25% on legal framework access to non-land assets, to land assets and to financial services, respectively – compared to men.[49] The project will be deliberate about gender inclusion in the project activities, including strategic decision-making processes that will ensure equitable representation of both men and women and the youth in accessing socioeconomic benefits from the project activities – particularly, access to financial services and support. This will be consistent with Zambia's National Gender Policy of 2014 and the Gender Equity and Equality Act of 2015 that aim at gender equality in the development processes by redressing existing gender imbalances, and promoting gender equity and equality, respectively. Additionally, guided by IFAD's mainstreaming agenda for gender and youth as well as IFAD's targeting policy, the project will aim to reach at least 50% women among the beneficiaries and 30% youth. Social inclusion, particularly of vulnerable and marginalized groups will be part of the targeting strategy for the project.

85. *Improving food security and nutrition:* CARLF will support intensification of food crop and pasture production in target districts as well as climate-smart agriculture, including the use of climate-resilient varieties to boost agricultural production and more effective use of agricultural inputs. These activities will positively impact 8,680 households in 15 rural communities in ways that will avert food insecurity and poor nutrition linked to climate change extreme events. The project is posed to secure people's livelihoods by providing support to farmer groups so that they are able to better adapt to climate change and improve their agricultural practices. This will ensure more availability of food crops with surplus for sale which will improve the purchasing power of households. Increased agricultural yields, diversification of income generating activities and the establishment of catalytic financing will equally contribute to enhancing the purchasing power of households, enabling them to buy other foods thereby rendering households more

[49] OECD (2019). Social Institutions and Gender Index (SIGI): Zambia country profile

food and nutritionally secured.

86. *Increased access to improved financial services and enhanced incomes:* Limited access to financial services of any form in rural areas limits vulnerable people's ability to cope with the impacts of climate change. To the benefit of 4,000 households, CARLF will support food security and livelihood recovery of 4,000 households through counter-cyclical financing. The project will also finance market driven-profitable climate resilient business solutions to insulate communities from complete socioeconomic collapse in case of extreme weather events such as droughts and floods or disease outbreaks which can decimate fields of crops. Furthermore, the project will facilitate improved access to agricultural loans and the procurement and installation of small crop processing and storage facilities. These will enhance and diversify incomes of beneficiaries to improve their ability to cope with impacts of extreme weather events.

    Through the knock-on effects of improved livelihood income streams, communities will potentially have more investment options into off-farm enterprises/activities - which limit the exploitation of natural resources. In this regard, the Adaptation Fund investments in the selected districts will yield socioeconomic benefits and contribute to protection of land and associated resources from over-exploitation.

Environmental benefits

Land rehabilitation and restoration of modified ecosystems: These two processes can have immense benefits to communities and the environment that might have been modified by natural or human factors. It should be noted that ecosystem restoration as a nature-based solution, can help address global challenges of biodiversity, climate change, and sustainable development.[50] Given the role and reliance on land and associated resources, healthy ecosystems can contribute to ending poverty, combat climate change while supporting biodiversity conservation. CALRF will use mixed approaches including assisted natural regeneration, agroforestry practices, fruit plants and fodder seeds to ensure land rehabilitation and land restoration and avoid forest and land degradation that would otherwise lead to the loss of the socioeconomic and environmental productivity of land – thus leading to carbon emissions and loss of biodiversity loss.

Support towards climate and biodiversity-positive sustainable agricultural production systems: CARLF will support food crop production systems that do not impose any harm to environment, biodiversity, and quality of agricultural crops. Producing crops sustainably increases the ability of the system to maintain stable levels of food production and quality for long term without increasing the demand and requirements of agricultural chemical inputs to control the system. CARLF's approach will ensure support production systems that will keep the soil alive with organic matter, integrated pest management and reduction in usage of pesticides, protecting biodiversity, ensuring food safety and food quality, improving nutrient quality, and fertilizing the soil with organic fertilizers. It should be noted that sustainable agricultural production leads to lowering of greenhouse gas emission and carbon footprint of overall world. Sustainably produced crops and food are more beneficial to consume by humans as compared to commercial crops. Sustainable usage of resources ensures the pollution-free environment for our future generations.[51] The project will support sustainable crop and animal production systems on at least 1,000 ha of land under the stress of extreme weather events in the target districts.

87. *Mechanisms for equitable distribution of benefits*: The project has been designed to address challenges related to limited livelihood options that amplifies community reliance and exploitation of natural resources, and limited financing systems to build community adaptive capacities in climate sensitive sectors in target districts. CARLF will therefore, target vulnerable communities. To ensure more effective and equitable distribution of benefits, the project has employed geographical targeting mechanism considering the climatic challenges and the socioeconomic context of communities (see section on Project Area and Target Group, paragraph 44). At full development, CARLF will advance geographic targeting mechanism to ensure (a) to identify eligible or priority zones of intervention; (b) to ensure continued coherence with

[50] UN Ecosystem Restoration, UNEP & FAO (n.d). Preventing, halting and reversing the degradation of ecosystems worldwide

[51] Imad R. S. (2016). Sustainable Crop Production System *Plant, Soil and Microbes* pp 103–116

national priorities; (c) to develop context-specific pro-vulnerable household and individual resource allocation targets; and (d) to orient promotional and facilitation efforts, particularly to identify 'benefit-deserving and eligible' communities, households and individuals that may require additional training to access benefits. Point (d) will also ensure avoidance of 'elite capture' where more privileged members of communities in the target districts take front rows in accessing and using benefits. Linked to geographic targeting, CARLF will also build participatory and inclusive processes at the community level: (a) mobilizing and identifying needs of communities; (b) forming functioning community management committees; and (c) establishing social control mechanisms.[52]

88. *Avoiding or mitigating negative impacts*: The implementation of CARLF will ensure the following to reduce negative social or environmental impacts: i) inclusive and representative community engagement in project activities; ii) continued consultations and engagement with beneficiary communities, including vulnerable groups; iii) collaboration with national and local authorities during the project cycle; iv) technical assistance throughout the project cycle on all technical matters related to the project; v) implementing CARLF's activities in accordance with national standards and safeguards consistent with national strategies; vi) establishing a robust complaints and feedback mechanism; and vii) screening project activities for environmental and social risks in accordance with the AF and IFAD Social, Environmental and Climate Assessment Procedures.

C. Cost-effectiveness of the proposed project / programme

89. As has already been noted, this project 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.

90. Linked to this point is that the project will build capacities of 500 relevant stakeholders using national experts who have been involved in the implementation of RUFEP. These capacities will be used to strengthen policy mainstreaming to support adaptation implementation at local levels. Capacities through awareness-raising will also support rural communities to cope better with risks and develop agile adaptive strategies, including migrating to higher lands to avoid floods which destroy their property, crops and lead to ill health. For example, rebuilding the asset portfolio after floods and or droughts for those who did not have knowledge or any level of awareness and did not take any actions would be more expensive than a household that moved to a higher land. Knowledge is power, and the context of the design of this project, awareness-raising will empower rural communities to risk less and pay less for the impacts of extreme weather events associated with climate change and climate variability. It should be noted that community access to the information they need in a timely and more easily understandable way will support their ability to make informed decisions regarding their livelihoods and agricultural practices, thus enabling them to adapt to a changing climate. Consequently, communities are expected to increase their yields and reduce the losses and food and nutrition insecurity.

91. CARLF has a deliberate focus on building and strengthening both formal and informal institutional mechanisms to ensure sustainability, particularly under outputs 1.1.1, 1.1.4, 2.2.1, 2.2.4 and 3.1.1 – in terms of CBOs, market linkages, innovative financing linkages with other stakeholders, district-level development strategies and institutional capacity development. The combined effect of this project focus will lead to more context-responsive interventions, informed by different stakeholders thereby lessening potential for maladaptation which would be wasteful of resources.

92. In the Seventh National development plan the estimated loss of annual economic growth in Zambia due to climate change is 0.4% of gross domestic product (GDP) before 2017 and if no actions are taken, rainfall variability alone could lead to a loss of 0.9% of GDP growth over the next decade. Other estimates indicate

[52] Julie Van Domelen. (2007). Reaching the Poor and Vulnerable: Targeting Strategies for Social Funds and other Community-Driven Programs

that climate variability could cost Zambia US$4.3 billion in lost GDP over the next decade, reducing annual growth by 0.9%.[53] This is about $223[54] GDP per capita that will be lost. For the total number of direct beneficiaries of this project (43,400 individuals or 8,680 households), addressing the cost associated with climate variability would be about $9,678,200 or $4,839,100 per capita in five years. 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 $5.8 m – building asset portfolios with potential to enhance and strengthen adaptive capacities of the vulnerable and poor communities will be direct beneficiaries plus more indirect beneficiaries beyond a decade.

93. The project proposes facilitating financial access to enable communities to invest in climate-sensitive areas through creating a catalytic fund. Running the fund to benefit participating members will be far much cheaper and nothing close to commercial banks that charge interest rates in the order of 30 to 35%.

94. Thus, learning from past and on-going interventions, community engagement, capacity and institutional development for sustainability, improved access to financial services, including a catalytic fund, and early interventions in climate change critical sectors are strategic ways to make CARLF more cost-effective. More details will be provided at full proposal development when activities will be costed to offer a more figure-based elaboration of the project's cost-effectiveness.

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

95. National priorities on climate change have been elaborated through several key documents, between 2007 and 2016. The table below details key national strategies and documents that are more directly relevant to the implementation of CARLF.

Zambia National policies/strategies consistent with CARLF
• *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.[55] CARLF 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".[56] 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.[57] CARLF 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

[53] Makondo et al. 2014, MTENR 2007, Sishekanu 2013
[54] This is based on the current population estimation of Zambia (~19.2 million people) and the projected loss in GDP over the next decade.
[55] MTENR 2007
[56] 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).
[58] GRZ 2015

Zambia National policies/strategies consistent with CARLF

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 its 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.[58] The enhanced finance for adaptation entails looking at different mechanisms including the development of an insurance market against climate change induced risks. CARLF 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. CARLF is relevant to the NPCC through activities related to building capacities to improve climate 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, CARLF is relevant to ZNAP through activities related to initiatives for boosting community-level adaptation and management strategies of climate change impacts, strengthening sustainable crop and animal 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 producer (including facilitating improved access to agricultural loans).

- *2009 National Policy on Environment (NPE - 2009):* The policy intends to reduce GHG emissions, and CARLF 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.

[58] GRZ 2015

Zambia National policies/strategies consistent with CARLF

- *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. CARLF 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. CARLF 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 towards improved. Relevant to the CARLF 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;
    - By 2030, selected high value forests in open areas are effectively managed and monitored;
    - By 2020, relevant institutions capacitated to enable them to plan, manage, implement and monitor REDD+ programme activities.

  CARLF 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, value addition of selected products, capacity building for extension services, climate smart technologies, mainstreaming of climate change priorities and support capacities for enforcement, 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.

E. Relevant national technical standards

96. The environmental and social impact screening will be conducted for the project activities to ensure adherence to national regulations and IFAD's Social, Environment and Climate Assessment Procedures (SECAP). The Adaptation Fund grant proceeds will not be used to finance any activities that induce environmental and social risks and negative impacts. The screening will anticipate potential risks and impacts, gaps and needs that may be required to be addressed at any stage of the project, including an integrated assessment of compliance with the Zambian and Adaptation Fund environmental and social safeguard policies and procedures.

97. For the activities to be financed through the revolving funds that may include small scale infrastructure such as ponds for aquaculture, paving of roads, construction of storage facilities and processing plants for values addition and post-harvest loss reduction, the environmental Zambian law identifies projects which should be the subject of an Environmental Impact Assessment (EIA) based upon the following main principles: 1. Type of activity undertaken. 2. Extent of natural resources exploitation. 3. Location. 4. Type of energy used to operate. Zambia Environment Management Agency's (ZEMA) EIA system classifies the projects into three categories based on different levels of EIA requirements according to severity of possible environmental impacts and location of the establishment and its proximity to residential settlements:

    - Category (A): projects with minimum environmental impacts. These are required to complete an environmental impact assessment form A. Given the scale of activities financed through the matching grants, most will fall under this category for the agricultural value chains being targeted.
    - Category (B): projects with potential adverse environmental impacts yet less adverse than category C. These are required to complete an environmental impact assessment form B. Very few activities may fall under this category and support will be provided by the project to undertake any studies that would be required to ensure adherence to the national standards.
    - Category (C): projects which have highly adverse impacts. These are required to prepare a full EIA study. None of the CALRF activities will fall under this category.

98. The CALRF activities from the revolving funds will fall under Category A for the ZEMA and under the moderate classification for IFAD's SECAP due to the small size and location of investments in non-sensitive geographic areas. The screening of the investments will include risk and adverse impact minimization measures. Financial Service Providers (FSPs) capacity will be built to ensure adherence to the national regulations and SECAP.

99. In response to the impacts of climate change, the Zambian government has put in place regulatory and legal frameworks, a climate change responsive policy, reviewing existing sectoral policies to accommodate climate change and developing national response strategies. To date, the government has enacted the NPCC that provides for a coordinated response to climate change, mainstreaming climate change in economically important and vulnerable sectors of the economy by 2030 and a NDC to UNFCCC Policy effected in 2016. CALRF is aligned with the updated NDC as elaborated in the earlier sections and will contribute to achieving articulated targets.

100. Regarding Financial Management, the CALRF Project Implementation Unit will develop policies and procedures that shall be in accordance with provisions of the Public Finance Management Act No.1 of 2018 and IFAD guidelines on Financial Management and Administration. The Financial statements shall be prepared in accordance with the International Public Sector Accounting Standards (IPSASs), Cash Basis of Accounting and shall be subject to Audit by the Office of the Auditor General which is the Supreme Audit Institution with the mandate to Audit proceeds of all public finances in Zambia.

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

101. There is no duplication with other funding sources. On the contrary complementarity is established through the choice to ride on investments already made by RUFEP and is being explored with other funding sources such as the Green Climate Fund to build on the activities of the CALRF to establish a climate financing facility and increase the reach to MSEs, FSOs and smallholder farmers and investments for the agriculture sector that is vulnerable to climate change.

102. The current projects being implemented in Zambia focusing on climate change adaptation and mitigation in the agriculture sector, for which complementarity will be ensured with the CALRF include the tabulated below:

No.	Project title	Project description	Justification of complementarity
1.	Rural Finance Expansion	The Programme is aimed at promoting access to and usage of sustainable financial services and products by poor rural men,	The project will build on networks and partnerships in the finance space

	Programme (RUFEP)	women and youth in Zambia. The program is structured around (i) Strategic Partnerships; (ii) Innovation and Outreach Facility (IOF) and (iii) Knowledge Management and Programme Implementation.	within the target districts to create the catalytic funding needed by the target beneficiaries. CALRF
2.	Strengthening climate resilience of agricultural livelihoods in Agro-Ecological Regions I and II (SCRALA)	The project is US$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)	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)	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)	This is a $100 million World Bank-funded project in Northern, Muchinga and Luapula provinces that is supporting the sustainable use of natural resources for livelihoods, and help the government of Zambia respond adequately and timely to a crisis or emergency	CALRF will create a Recovery Fund for food security. It will draw lessons on TRALARD's management of crisis/emergencies. Through the Revolving Investment Fund, CALRF will complement TRALARD's interventions and support towards viable livelihood opportunities that can build resilience and reduce poverty levels.
7.	UNEP Ecosystem-based Adaptation project	UNEP is now supporting the Government of Zambia to improve the climate resilience of local people living near wetlands by strengthening the capacity of local communities and local governments to implement ecosystem-based adaptation interventions. This is being achieved by piloting ecosystem-based adaptation measures in sites across the Bangweulu and Lukanga wetlands (and adjacent forest ecosystems) and by providing training to the local and national governments on adaptation planning and implementation.	CALRF will complement knowledge and lessons learned on the benefits and execution of the nature-based solutions with an aim of promoting the upscaling of such approaches in other areas
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.
9.	Smallholder	S3P was designed and implemented to sustainably achieve food	CALRF will build on the capacities

	Productivity and promotion Programme (S3P).	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	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.
10.	Enhanced-Smallholder Livestock Improvement Programme (E-SLIP)	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).	CALRF will complement the work done by ESLIP through support to cattle rearing communities through the insurance, breeding heifer loans and animal health programmes.

103. The proposed project will draw lessons from the afore-mentioned interventions. The lessons will be used to ensure synergies in some cases, and scaling up and out in others to avoid duplication. It should be also mentioned that different areas of interventions will be used as an opportunity for scaling up and out best practices that will be relevant to the proposed project.

G. Learning and knowledge management to capture and disseminate lessons

104. Learning and knowledge management will be part of the implementation strategy of the project. 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 will adopt an IFAD developed KMS with a three-thronged approach that focuses on knowledge generation, knowledge use and enabling environment.

105. 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, catchment management plans. Other knowledge generation and learning activities include the taxonomy of viable adaptation options for financing, identification and effective dissemination of climate change adaptation financing products including digital finance, incentives for investing in climate change-sensitive sectors (such as CSA, including aquaculture). 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 policy briefs. Knowledge generation will be the responsibility of the project management team.

106. 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.

107. The lessons and knowledge from the project will be captured through specific activities that will complement the monitoring and evaluation system of the project – these will be further elaborated during design. 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.

108. Channels of dissemination will include capacity building workshops, dialogues, rural finance network forums, and project level sensitization and awareness raising sessions. Social media platforms, including print media, TV talks and radio programs will also be part of the dissemination channels and mechanisms. By working with other partners, including the private sector, lessons and best practices from the project will be disseminated. Finally, the knowledge generated will also be disseminated through IFAD's website.

H. Consultative process, including the list of stakeholders consulted

109. The proposal is 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 members where the potential investments from the revolving funds will potentially be located (community contracts with some Chiefdoms). A wide stakeholder meeting took place during the RUFEP supervision mission in November 2021 (The list of stakeholders that attended the meeting is attached as an annex to this CN). The meeting was an online planning meeting, and the invitees were able to discuss a version 0 of this Concept Note (CN).

110. Several stakeholders have been involved at different levels in the development of this project concept. These include 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) where potential revolving funds would be established (letters from the District Administration are attached to confirm the consultations by the institutions and organisations that are potential recipients of the funds). 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 that could be included for the revolving funds and the roles for local actors to facilitate efficient and effective implementation of potential project activities.

111. 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.

112. 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.

#	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	To ensure the concept note is in line with Government priorities and policies, To identify current challenges and opportunities for

	Fisheries and Livestock, Ministry of Commerce, Trade & Industry, Zambia Development Agency	synergies.
2	Development partners: FAO, 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 concept note's rationale and proposed approach are technically sound, To identify opportunities for synergies.
3	Private sector: ZANACO, AGORA, Vision Fund Zambia, UBA, NASCO	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 Kawambwa, Mwansabombwe, Nchelenge Chienge, Lunte, Luano and Lunsemfwa Districts.	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 revolving funds.

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

113. The project design considers the socioecological vulnerability context of 15 districts in five provinces in Zambia – floods (which have led to loss of unquantified damage to property and crops) in some districts and droughts (leading to food and nutrition insecurity, disease outbreaks, poor quality grazing grounds etc) in others, deforestation and land degradation (poor soil fertility) and average poverty level of 73.2%, among others. The extreme weather events are projected to increase in both intensity and frequency, coupled with increase in temperature and reduction in precipitation. In this vulnerable context, the project targets building adaptive capacity and enhancing climate resilience of local communities through implementing concrete adaptation interventions.

114. By focusing on building and improving the portfolio of livelihood options, the project takes a holistic and multisectoral approach that addresses key adaptation barriers in the districts – including building capacities, raising awareness regarding climate change risks and coping strategies, concrete livelihood strategies to improve community and household-level adaptive capacities (through both on and off-farm activities) while facilitating community members' access to financial services to invest in climate-sensitive sectors (sectors such as agriculture which are viewed as risky particularly when it is about smallholder farmers on customary land that cannot even be collateralized) that underpin their livelihoods. Community-based climate adaptive actions on the ground will improve sustainable natural resources management and enhance agricultural productivity by these communities while contributing to strengthening ecosystem resilience in production landscapes. Climate-responsive practices such as climate smart agriculture, agroforestry interventions will not only improve agricultural productivity, but also make production more reliable, contributing to household food and nutritional security. The adaptation activities of Component 1 will increase the resilience of ecosystems and agricultural production systems to the risk of droughts and floods, but they will also enhance the food security of the livelihoods in the target districts.

115. Therefore, the Adaptation Fund resources will be critical in ensuring the socioeconomic and ecological resilience of the 15 districts in five provinces – developing a suite of software and hardware interventions to holistically address key adaptation barriers and support the building of livelihood and asset portfolio of the poor communities living in a very socioecological vulnerable context.

J. Sustainability of the project/programme outcomes

Overall project sustainability approach.

116. This project builds on the achievements and institutional arrangements of RUFEP that has been promoting access to and usage of sustainable financial services and products by poor rural men, women and youth across Zambia, including in the districts proposed by this concept note. RUFEP is anchored in the Ministry of Finance but engages various partners and institutions, both government and non-government. 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.

117. The Project will benefit from the established, proven and tested fiduciary, institutional and organization systems as well as knowledge and expertise of the existing staff of RUFEP, and the Ministry of Finance (with excellent experience in the PPCR which was well managed) which will be strengthened with expertise in climate change adaptation and other specialists as needed. RUFEP has generated significant goodwill in the financial sector. It is a respected opinion leader and has a good reputation. It has the databases, networks and partnerships necessary for the immediate commencement of the project once financing agreements are concluded. The learning curve will be significantly shortened.

118. The project will build capacities of key relevant stakeholders. It should be noted that strengthening institutional and individual capacities of project stakeholders is consistent with the sustainability logic of this project.

119. The creation of stakeholder coordination and collaboration structures will ensure that technical expertise and experiences are continuously shared and utilized during implementation of activities in the districts – this will ensure technical and technological sustainability. The introduction of some technologies will be undertaken through a financing arrangement linked to catchment management that contributes to adoption of best practices by communities while ensuring environmental protection. Communities will also be engaged in the local production of initiatives for easy dissemination.

120. Communities will be involved in the project activities that will enhance their resilience and improve their adaptive capacities to the impacts of climate change. They have experienced the negative implications of extreme weather events, including losing their property, animals and crops. Therefore, it will be in their best interest to sustain any interventions to support them to cope with the impacts of extreme weather events. Coaching and sustainability training will be essential activities. Demonstrated socioeconomic and environmental benefits themselves will be critical in ensuring sustainability of project outcomes as long as sustainability is built into the studies and activities related to the environmental, social and climate aspects.

121. Economic sustainability: The project will focus on improving access to innovative financial services to support community investments in climate-sensitive sectors that will be made available to the communities depending on for their livelihoods. The project will also support diversification of livelihoods, physical infrastructure (to improve production but also facilitate links to markets) while contributing to on and off-farm job opportunities. This approach and level of intervention will ensure economic sustainability beyond the life of the project.

122. Financial sustainability: Connected to economic sustainability, this project is designed to include profitable income generation and entrepreneurial activities which will make the project outcomes financially sustainable. Communities and financial and value chain providers as well as private sector investors will be delivering these interventions that will be selected taking into account their viability based on local socioeconomic circumstances – ensuring women and youth participation and easy adoption by community members. For this, community members will be fully engaged in the identification of activities so that financial sustainability does not elude the project.

123. Institutional sustainability: The involvement of grassroots institutions such as civil society organizations (including Farmer Groups/ Associations and Savings Groups), with experience working with communities and the private sector in finance will strengthen institutional sustainability for adaptation and resilience-building. Additionally, the coherence of the proposed project with the development strategies and policies in Zambia in particular the National Disaster Management Policy (2005), The Zambia National Agricultural Policy (2012-2030), the Rural Finance Policy and Strategy (2012) and the 7th National Development Plan (2017-2021). The alignment of this project's priorities with those of the government will ensure government-level institutional support and sustainability. Furthermore, this project will be anchored in the Ministry of Finance, a key ministry in the development of Zambia – and therefore, will ensure the outcomes are sustained and contribute to the overall development agenda of the country as ensured by the ministry.

124. Environmental sustainability: At design stage, consistent with IFAD's social, environmental and climate compliance standards, a SECAP review note with recommendations will be developed. To improve environmental sustainability and build resilience to climate change (drought and flooding leading to erosion and loss of soil fertility and destruction of the livelihoods of populations), the proposed project will promote the sustainable management of natural resources by facilitating the dissemination and adoption of technologies, including climate smart farming and agroforestry practices – practices that are consistent with adaptation and resilience-building but also promote integrated natural resources management. Monitoring and evaluation, lessons learned, knowledge management, and reporting are the pillars of any sustainability programme.

K. Overview of the environmental and social impacts and risks

125. 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. It should be noted that for some of the activities, the proposed interventions and investments have not been exhaustively defined at this project proposal stage. Further risk assessments will be undertaken at the project design 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 of the project during implementation will be screened against the 15 principles of the Adaptation Fund with participation of relevant stakeholders.

126. The relevant Adaptation Fund environmental and social safeguards will be incorporated and mainstreamed in all the revolving fund investments. The proposed interventions are not expected to induce irreversible negative impacts on the natural systems including priority natural habitats and biodiversity as well as social irreversible negative impacts on the communities, or vulnerable groups. The project will ensure the monitoring and mitigation of any eventual social, environmental and climate change related risks. This monitoring will involve all relevant stakeholders through a participative approach that will include adequate risk mitigation measures to be implemented along with the activities will be developed.

127. Table below provides an overview of the assessment 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**
Compliance with the Law		**Low risk:** Through consultations with different stakeholders, including government agents, compliance with national regulations 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.
Access and Equity		**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.
Marginalized and Vulnerable Groups		**Low risk:** As noted above, the project's target group is vulnerable rural populations thereby ensuring social inclusion is a key consideration in the project particularly providing adaptation options and increasing access to rural finance for these groups. The design will conduct further analysis of the profiles of the communities and the targeted areas particularly for the revolving fund activities. The profiling will improve the targeting of the project.
Human Rights		**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.
Gender Equality and Women's Empowerment		**Low risk:** The Project has in its objectives gender equality and women empowerment, which should be improved through the project activities. The Gender Action Learning System will be applied and specifically the Household Methodology to ensure results are achieved. It should also be noted that 50% of the direct beneficiaries will be female
Core Labour Rights		**Low risk** The project will support activities that will require human labour. Through the application of the SECAP, screening will be conducted on investments to ensure labour rights are respected. Any contracts awarded under the revolving fund activities will also include relevant clauses on adherence to labour rights and subsequent monitoring and reporting will be required. Additionally, as has been noted above, no child labour will be tolerated in adherence to the Zambian laws and international best practices.
Indigenous Peoples	**x**	**No risks** Technically, there is no group in Zambia that identifies itself an Indigenous People. Where the project activities will be implemented, principles of Free, Prior and Informed Consent (FPIC) will be adhered to.
Involuntary Resettlement		**Low risk** Some of the project activities will involve infrastructure development – including paving some strategic roads, storage facilities. Due diligence will be done to avoid involuntary resettlement during implementation. At this proposal stage, the aim is to avoid any involuntary resettlement.
Protection of Natural Habitats		**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.
Conservation of		**Low risk**

Biological Diversity		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.
Climate Change		**Low Risk** The project does not have any negative impact on climate change. The project interventions are actually aimed at addressing adverse effects of climate change. Activities centered on assisted natural regeneration and agroforestry systems, for example, will have mitigation benefits to the impacts of climate change. Extensive stakeholder consultations will ensure that none of the proposed interventions directly or indirectly increase social and environmental vulnerabilities to climate change. Additional consultations will ensure that a robust suite of adaptation measures is proposed and implemented. Overall, the project activities will promote climate change adaptation and will not result in any increase in greenhouse gas emissions.
Pollution Prevention and Resource Efficiency		**Low 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, during infrastructure development, particularly road rehabilitation, there will be noise and dust. Efforts will be done by the service provider to keep noise and dust to the minimum. These aspects will be included in the service provider contracts.
Public Health		**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.
Physical and Cultural Heritage	**x**	**No risk** No investments will be made in areas with physical and cultural resources of importance.
Lands and Soil Conservation		**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 or animal production so as not to compromise soil conservation practices. If any risks, they

		will be minimal and localized.

128. 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 (SECAP), with some, potential adverse impacts and risks that are reversible or mitigated. Regardless of its categorization and classification, an Environmental and Social Impact Analysis (ESIA), and CRA (Climate Risk Analysis), will be available at implementation phase. A feasibility implementation study will also be prepared during the full project development phase.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for project / programme implementation

129. As has already been noted, this project builds on the successes of RUFEP. The implementation arrangements of the proposed project will build on RUFEP – shortening the learning curve and time by taking advantage of RUFEP's established, proven and tested institutional and organization arrangements as well as knowledge and expertise of the existing staff. However, the staff will strengthened with a team of climate change adaptation and other specialists, considering the natural resources and adaptation angles of the proposed project.

130. The project will have a Project Coordination Office (PCO) that will be established under the Ministry of Finance and National Planning/Green Economy and Environment. The PCO responsible for the day to day management of the project, providing directions and guidance to project partners and coordinating the project implementation, and officially engage 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.

131. The recruited communication / knowledge management unit 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 PCO will be constituted to reflect the expertise in key thematic areas of the project. At full design stage following additional consultations with key stakeholders, the expertise and key personnel will be identified and plugged in the PCO structure. However, at this stage, it can be confirmed the PCO will be headed by a National Project Coordinator who will be supported by an M&E Specialist and Administrative and Finance Officer.

132. *Project Steering Committee (PSC):* The project will have a PSC to provide implementation oversight of the project. It will have relevant representation at national and subnational levels, including key government institutions (i.e. Ministry of Finance and National Planning/ Green Economy and Environment, Bank of Zambia, Ministry of Agriculture, Ministry of Livestock and Ministry of Small and Medium Enterprises), the Rural and Agricultural Finance/SME Working Group of the National Financial Inclusion Strategy, civil society organizations. Together, they will act as a Technical Advisory Group for project implementation, including giving inputs in the annual work budgeted plans and adaptive management strategies of the project.

133. To ensure more effective implementation of project activities, the project will have district-level structures of field technical officers to engage with communities and project partners on the ground. This will not only smoothen the implementation of project activities, it will also help during the reporting processes. In this regard, the project will have national and sub-national implementation arrangement with clear communication strategies to ensure free flow of information and dissemination of lessons and results. IFAD, as the Implementing Entity, will supervise the project directly; providing continuous technical support and guidance. A baseline study will be carried out in the first year of project implementation to establish future monitoring and impact assessment benchmarks. A Mid-Term review will be carried out jointly with the government to evaluate project progress, identify areas for further improvement and revise project

approach, activities and budgets on the basis of MTR findings and recommendations.

A. Measures for financial and project / programme risk management.

134. The PCO 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.
Insufficient capacities of PCO 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.
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.
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.
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.
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.
Project implementation and financial management procedures do not guarantee sufficient transparency and accountability	Medium	The project will ensure team work 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.

Alignment with AF Results Framework

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount ($)
Overall objective: To build and enhance resilience and adaptive capacities of 8,680 vulnerable households in five provinces 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				
Building and enhancing adaptive capacities of vulnerable smallholder farmers	No. of direct beneficiaries, disaggregated by gender	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	

through resilient livelihood options and access to innovative finances for investment in climate-sensitive sectors in five provinces in Zambia	No. of physical assets supported by the project (produced, developed, improved, or strengthened)	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	10,000,000
	No. of households reporting increased income/diversified livelihood income streams	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	
	No. of beneficiaries accessing innovative financial services for investments in climate-sensitive sectors	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	.8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	
	No. of ha under sustainable crop and animal production systems	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
	No. of people reached during planning and climate change awareness-raising campaigns	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
Project Outcome	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount ($)**
Component 1: Building and promoting diversified, resilient and sustainable community livelihood options				
1.1:Promoted and diversified livelihood options strengthen the resilience and build adaptive capacities of vulnerable communities (8,680 households) to climate change-related extreme weather events in five provinces in Zambia (Luapula, Northern, Central, Southern and Western), which are very vulnerable to the recurrent extreme weather events	• Number of poor vulnerable people reporting diversified livelihood options	Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	Type of income sources for households generated under climate change scenario	5,839,400
	• Number of rural community-based organisation groups (women, youth, producer groups) owning adaptation processes associated with climate change	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	No. of technical committees/associations formed to ensure transfer of knowledge	
	• Number of ha under sustainable crop and animal production systems	Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	
	• Number of established individual and community-level livelihood strategies for the vulnerable members in the target districts.	Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	
	• Number of crop and animal marketing services and infrastructure supported and strengthened in the	Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including	Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	

	vulnerable targeted districts	variability		
Component 2: Innovative local financing systems to build community resilience and adaptive capacities in climate sensitive sectors				
2.1 Vulnerable communities in target provinces access financial services and increase their investments in key climate-sensitive sectors.	• Number of Financial Service Providers identified with promising innovative adaptation financial products/services	Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	1,560,600
	• Number of improved and innovative financing tools to integrate climate risk management and monitoring of climate change adaptation investments	Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	
	• Number of households supported through food security and livelihood recovery through counter-cyclical financing	Targeted population groups covered by adequate risk reduction systems	Percentage of target population covered by adequate risk-reduction systems	
	• Number of adaptation options based on district level development plans supported through the revolving investment strategies	Targeted population groups covered by adequate risk reduction systems	Percentage of target population covered by adequate risk-reduction systems	
	• Number of development strategies at district and community-levels integrating and enforcing climate change priorities	Improved integration of climate-resilience strategies into country development plans	No. of targeted development strategies with incorporated climate change priorities enforced	
Component 3: Enhance district-level planning and awareness-raising for evidence-based resilience and adaptive capacity building				
3.1 Improved knowledge and awareness of climate change risks to support effective evidence-based adaptation planning at district level	• Number of planning and climate change awareness-raising mechanisms set up and institutionalized	Improved integration of climate-resilience strategies into country development plans	No. of policies introduced or adjusted to address climate change risks (by sector)	942,000
	• Number of climate change and extreme weather-related information systems strengthened	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	
	• Number of beneficiaries of training programs in using weather information to prioritize adaptation options	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	
	• Development of the taxonomy of viable climate change	Strengthened capacity of national and subnational stakeholders and entities	No. of tools and guidelines developed (thematic, sectoral, institutional) and	

	adaptation investments	to capture and disseminate knowledge and learning	shared with relevant stakeholders	
	• Number of members at provincial and district-levels trained in climate change and systematic adaptation planning, including support towards policy, legal and regulatory environment for innovative financing	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	
	• Number of climate change risks awareness- raising campaigns	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	
	• Establishment of the crop and livestock production and environmental data hub in target provinces	Targeted population groups covered by adequate risk reduction systems	Percentage of target population covered by adequate risk-reduction systems	
	• Number of tools developed for knowledge generation and management			

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

Record of endorsement on behalf of the government[2]

Mr Francis Mpampi, National Coordinator-National Designated Authority for GCF and AF Ministry of Green Economy and Environment	Date*: 10 January 2022*

A. 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.	
Tom Mwangi Anyonge Implementing Entity Coordinator Director, OiC, Environment, Climate, Gender and Social Inclusion Division International Fund for Agricultural Development	
Date: 10 January 2022	Tel. and email: +39 06 5459 2519 t.anyonge@ifad.org
Project Contact Person: Paxina Chileshe-Toe Regional Climate and Environment Specialist, Eastern and Southern Africa, ECG Division, IFAD Tel : +254793484367 email: p.chileshe@ifad.org HQ focal point: Janie Rioux Senior Technical Specialist (Climate Change), ECG Division, IFAD Email: j.rioux@ifad.org	
Date: 29 April 2022	

Annex 1: Preliminary gender analysis for CARLF Project

REPUBLIC OF ZAMBIA
OFFICE OF THE PRESIDENT

DISTRICT COMMISSIONER'S OFFICE
DISTRICT ADMINISTRATION
P.O BOX 750004
MWANSABOMBWE

8TH January, 2021

The Permanent Secretary
Ministry of National Development Planning
P.O Box 50062, Lusaka.

Dear Sir/Madam

Re: Letter of Support for the Copper belt University's grant application to the Adaptation Fund

On behalf of the local communities in Mwansabombwe and Kawambwa districts, please accept this letter of support to the Copper belt University (through the School of Natural Resources) in their application for funding under the Adaptation Fund to undertake activities aimed at increasing the resilience of the fishing communities against the shocks of climate change through the building of local capacity in fish farming.

The District Development Coordinating Committees (DDCCs) which is anchored by the District Administration in the various districts and represents multi-actor platforms engaged in setting development priorities at the lowest level of the development planning in local communities is in support of the proposed interventions by the Copper belt University. The Copper belt University engaged us and the local communities we represent in the districts during the development of the proposal and indeed, the proposed interventions address the development priorities of our people.

Should you require more information about the area, please do not hesitate to contact us via 0978097323, Godfreynkandu11@gmail.com.

Sincerely,

GODFREY K. NKANDU (MR.)
Ag DISTRICT COMMISSIONER
MWANSABOMBWE DISTRICT

REPUBLIC OF ZAMBIA
OFFICE OF THE PRESIDENT
MWANSABOMBWE DISTRICT
08 JAN 2021
DISTRICT COMMISSIONER
P. O. BOX 750004
KAZEMBE

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 meaningful inclusion and engagement of women in the design and implementation of the project - that is, ensuring gender equality and empowerment.

National context: Zambia acknowledges gender gaps in the manner that men and women access natural resources that underpin livelihoods, particularly in rural areas where socio-cultural practices disadvantage women in their exercise of rights over resources. Women are underrepresented in certain sectors where men have taken leadership roles to control access and use of socioeconomic opportunities to the exclusion of women. Women's participation in traditionally male-dominated industries remains notably low at 20%. Women's participation in decision-making at all levels is low, with no women appointed as Provincial Ministers. This leads to socioeconomic marginalization of women by systemic structural barriers. Overall, lack of institutional and human resource capacities, coupled with the persistence of patriarchal cultural beliefs or norms and Zambia's dual legal system (though recently revised to give supremacy to constitutional law) continue to hamper efforts aimed at achieving the full participation of women, girls, and the youth in various sectors, notably in education, sexual and reproductive health, and access to resources and economic opportunities, among others.[59] The women's access to inputs, technical advice, regulations, improved technologies, land ownership and decision-making processes are limited compared to men, thus constraining their resilience to climate change-induced impacts. Making strides to address this challenge:

- The Forest Act 2015 mandates the Forest Department to devise and implement participatory forest management approaches for indigenous forests and plantations involving local communities, traditional institutions, nongovernmental organisations and other stakeholders, based on equitable gender participation.
- Creation of the Gender Division within the Office of the President
- Zambia has a National Gender Policy 2014
- Establishment of speedy handling mechanisms for gender-based violence cases in courts of law.

Despite these progressive actions, Zambia is in the medium category with a SIGI gender index value of 35% - and women score as low as 0%, 25% and 25% on legal framework access to non-land assets, to land assets and to financial services, respectively – compared to men.[60]

Gender and climate change: Women living in rural areas are particularly vulnerable because of their specific role in agriculture and generally taking care of families – relying on climate-sensitive agriculture and forest resources. Consultations revealed that the lack of water in the villages and fuelwood leads women to walk long distances to collect water and fuelwood. Thus, conflicts related to the use of water points and fuelwood collection mainly involve women – impacting them more than men. The use of fuelwood for domestic use exposes women to respiratory diseases more than men.

Gender mainstreaming in the project: The project will be deliberate about gender inclusion in the project activities, including strategic decision-making processes that will ensure equitable representation of both men and women and the youth in accessing socioeconomic benefits from the project activities – particularly, access to financial services and support, livelihood options, capacity development to cope with the impacts of climate change and resource degradation. This will be consistent with Zambia's National Gender Policy of 2014 and the Gender Equity and Equality Act of 2015 that aim at gender equality in the development processes by redressing existing gender imbalances, and promoting gender equity and equality, respectively. Additionally, guided by IFAD's mainstreaming agenda for gender and youth as well as IFAD's targeting policy, the project will aim to reach at least 50% women among the beneficiaries and 30% youth. Social inclusion, particularly of

[59] Republic of Zambia Ministry of Gender: Gender Status Report 2017-19
[60] OECD (2019). Social Institutions and Gender Index (SIGI): Zambia country profile

vulnerable and marginalized groups will be part of the targeting strategy for the project.

During consultations, key issues raised are tabulated below. Ensuring women participation, consultations were conducted in the afternoon and separately from their men:

Key Issues	**Action**
Vulnerable/marginalized groups including small-scale fishermen/fish mongers, pastoral communities and smallholder farmers and women are the most affected by climate change but are often neglected in enhancing their climate adaptive capacity and resilience.	Take into account inclusion of all these vulnerable/marginalized groups into vulnerability assessments and in Climate Change Adaptation Action Plans, including capacity development.
Most structures in the government and in the community are dominated by men which leads to lack of participation in capacity building activities and in climate change adaptation planning management processes.	● Encourage vulnerable groups and women participation in training and workshops. ● Create dedicated communication channel for women groups to convey concerns and ideas in Climate Change adaptation
Limited recognition of women/vulnerable/marginalized group roles, participation and experiences in climate change adaptation and sustainable livelihood activities.	● Document and disseminate women /vulnerable/ marginalized group roles, participation and experiences in climate change adaptation and sustainable livelihood activities. ● Create women champion groups in climate change adaptation campaigns
Most of the climate change information/knowledge are very technical and not easily comprehensible by local communities or vulnerable/marginalized groups in vulnerable contexts.	● Diversify and design channels of information, education and communication materials/programs based on target audiences, including conducting campaigns in the local languages of the areas. ● Provide facilitation and empowerment assistance for specific groups to ensure climate information can be conveyed correctly

Conclusion and recommendations for the full proposal: This preliminary assessment forms the basis for a detailed gender assessment during the development of the full proposal to get into gender specifics to inform the development of project activities to respond to the different needs of men and women in ways that will contribute to improving gender dynamics. This preliminary gender analysis has highlighted a number of opportunities for project intervention to promote greater gender equality. The full development will remain alive to the fact that there is a gender divide in the manner that men and women access and use resources. This differential access and use marginalizes women socioeconomically. Therefore, CARLF will devise mechanisms for women participation in the identification of activities, their implementation, sharing mechanisms of benefits and monitoring of the project activity. Capacity development of women will be critical in the eventual participation of women in accessing and using of project activities. Finally, the project will keep records of sex-disaggregated data and that of ongoing monitoring to facilitate the identification of differential impacts that the project will have on women and men - and encourage action based on this data.

Annex 2: Letter of Endorsement