

Annex XX- Supplementary Information to the SAP FP

**Project/Programme title: Building Climate Change
Resilience of Vulnerable Households in Selected
Localities of Ethiopia**

Country(ies): Ethiopia

**National Designated Authority(ies): Ministry of Planning and
Development**

Accredited Entity: Ministry of Finance

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A. PROJECT/PROGRAMME SUMMARY

A.1. Has this FP been submitted as a SAP CN before?

Yes ☒

No ☐

A.2. Is the Environmental and Social Safeguards Category C or I-3?

Yes ☒

No ☐

A.3. Project or program

This FP refers to one project.

☒ Project

☐ Program

A.4. Public or private sector

☒ Public sector

☐ Private sector

A.5. RfP

Not applicable.

A.6. Result area(s)

The applicable GCF result areas targeted by the project are presented below. The percentage allocations indicate the estimated share of GCF and co-financing resources devoted to each result area.

Mitigation total

GCF contribution: 15%

Co-financers' contribution: 5%

Energy generation and access

☒ Applicable

GCF contribution: 15%

Co-financers' contribution: Enter number %

Low emission transport

☐ Not applicable

GCF contribution: Enter number %

Co-financers' contribution: Enter number %

Buildings, cities and industries and appliances

☐ Not applicable

GCF contribution: Enter number %

Co-financers' contribution: Enter number %

Forestry and land use

☐ Not applicable

GCF contribution: Enter number %

Co-financers' contribution: Enter number %

Adaptation total

GCF contribution: 85%

Co-financers' contribution: 95%

Most vulnerable people and communities

☒ Applicable

GCF contribution: 48%

Co-financers' contribution: 73%

Health and well-being, and food and water security

☒ Applicable

GCF contribution: 17%

Co-financers' contribution: 12%

Infrastructure and built environment

☐ Not applicable

GCF contribution: Enter number %

Co-financers' contribution: Enter number %

Ecosystem and ecosystem services

☒ Applicable

GCF contribution: 20%

Co-financers' contribution: 10%

A.7.1. Expected mitigation outcome

Core indicator 1: GHG emissions reduced, avoided or removed / sequestered.

The project is expected to generate 6,459 tCO₂eq of avoided emissions during the project implementation period.

The project is also expected to generate 32,293 tCO₂eq of avoided emissions during the lifetime of the project.

A.7.2. Expected adaptation outcome

Core indicator 2: Direct and indirect beneficiaries reached.

The total number of direct and indirect beneficiaries is 556,000.

- Direct beneficiaries: 96,000
Indirect beneficiaries: 460,000
- Direct beneficiaries as a percentage of total population: 0.07%
- Indirect beneficiaries as a percentage of total population: 0.34%

A.8.1. Total investment, including GCF and co-finance

Amount: USD 29,997,050.01

A.8.2. Total GCF funding requested, maximum USD 25 million

Amount: USD 24,997,050.01

A.9. Type of financial instrument requested for the GCF funding

- ☒ Grant
- ☐ Loan
- ☐ Equity
- ☐ Guarantees
- ☐ Others

A.10. Implementation period: 4 years, equivalent to 48 months.

A.11. Total project / programme lifespan: 4 years, equivalent to 48 months.

A.12. Expected date of internal approval: The date that the Accredited Entity obtained or will obtain its own approval to implement the project/programme is 8/29/2025.

A.13. Has Readiness or PPF support been used to prepare this FP?

- Yes ☐
- No ☒

A.14. Is this FP included in the entity work programme?

- Yes ☒
- No ☐

A.15. Is this FP included in the country programme?

- Yes ☒
- No ☐

A.16. Executing Entity information

The Executing Entities are the Government of Ethiopia, represented by the Ministry of Water and Energy, the Ministry of Agriculture, and the Ministry of Irrigation and Lowland.

17. Scalability and potential for transformation

1. The proposed project aims to build on the achievements of the *Climate Smart Integrated Rural Development Project (2017-2022)*, funded by the Adaptation Fund. This earlier initiative adopted a holistic and integrated approach to climate resilience, addressing agricultural, environmental, and institutional dimensions across 14 kebeles in seven woredas within five regional governments. Central to its success was the establishment of a scalable, integrated model that combined enhanced water access, natural resource restoration, livelihood diversification, and extensive capacity building. The project delivered transformative impacts, including clean water access for over 15,000 households, irrigation support for 8,500 farmers, and diversified income streams for 2,556 households, of which 750 were female-headed. Additionally, over 3,300 hectares of degraded land were rehabilitated through physical and biological measures, and more than 20,000 community members and experts benefited from capacity-building activities.
2. However, the scope of the Adaptation Fund project was limited, serving only two kebeles per woreda, leaving significant unmet demand in neighbouring communities. While adjacent areas indirectly benefited from ecosystem restoration activities, they did not experience the direct economic and social gains of the intervention. The expressed interest from these communities highlights the potential for replication and scaling to amplify the project's impact across a broader geographic area, ensuring equitable access to climate-resilient practices and resources. This project therefore intends to scale out the proven interventions

implemented in the Adaptation Fund–financed kebeles to adjacent, climate-vulnerable kebeles with similar agroecological and socioeconomic conditions, thereby maximizing impact and operational efficiency.

3. This funding proposal responds to the urgent need to expand the reach of a proven, community-endorsed climate resilience model by leveraging heightened awareness of the benefits of climate-smart agriculture, adaptive planning, and integrated natural resource management. With demonstrated effectiveness and strong local ownership, the Government of Ethiopia is seeking GCF support to overcome financial constraints and scale up interventions that have already shown tangible results under the Adaptation Fund-financed project. The proposed SAP project aims to deliver transformative outcomes by institutionalizing climate-resilient planning at the woreda and kebele levels, restoring degraded ecosystems through locally led solutions, and empowering vulnerable groups-particularly women and youth-through inclusive access to resilient livelihoods and climate finance. Building on the terminal evaluation of the AF project, the SAP intervention applies a three-pronged strategy: (i) optimization of tested approaches such as micro-watershed planning, early warning systems, and livelihood integration through improved targeting, coordination, and adaptive learning; (ii) gap-filling to address specific weaknesses identified in the evaluation, such as limited support for women-led enterprises and inadequate post-project maintenance capacity; and (iii) upscaling of successful models-including community-managed climate resilience interventions, farmer training centers, and rural water systems-into adjacent kebeles with similar vulnerability profiles. This integrated strategy ensures that investments are evidence-based, contextually grounded, and positioned for long-term, sustainable impact. Please find below a summary table that outlines the best practices from the AF project, the gaps identified through its terminal evaluation, and how the SAP project intends to optimize, address gaps, and scale up interventions accordingly.

Table 1: Optimization and Upscaling Strategy of the SAP Project: Addressing Gaps and Building on Best Practices from the AF-Financed Intervention

Best Practices from the AF Project	Gaps Identified in AF Terminal Evaluation	SAP Optimization Strategy	Expected Impact in SAP
Community-based watershed management improved landscape rehabilitation and reduced soil erosion.	Limited geographic scale and need to replicate success across similar agro-ecological zones.	Expand integrated watershed management to adjacent kebeles with similar vulnerability profiles. Utilize participatory planning and local institutional platforms.	At least 1,800 hectares of degraded land restored and protected using nature-based solutions, enhancing landscape productivity and ecological resilience.
Local institutions (e.g., woreda offices, kebele committees) demonstrated strong coordination in planning and monitoring.	Insufficient capacity and unclear mandates for long-term institutional coordination beyond the project period.	Strengthen local institutional capacities through structured capacity-building, MoUs on inter-agency roles, and formalized climate governance arrangements at the woreda level.	Improved institutional capacity in 7 woredas, with structured platforms for local climate planning, implementation, and monitoring.

Access to climate-resilient water improved household coping strategies.	Delayed functionality and O&M risks for solar-powered water systems.	Introduce a strengthened O&M mechanism with community oversight, dedicated Water/irrigation user associations, and early procurement protocols.	Reliable access to potable and productive water for over 10,000 households, with 95% uptime due to improved O&M systems.
Women's engagement in livelihood diversification (e.g., poultry, vegetable gardening) generated income and strengthened adaptive capacity.	Scale and sustainability of IGAs limited by lack of financial services and technical support.	Provide financial literacy, start-up capital via revolving funds, and extension services. Engage MFIs and local cooperatives to ensure sustainability and scale.	Over 2,000 women and youth engaged in viable green IGAs with access to financial services and market linkages.
Knowledge products and community awareness initiatives (e.g., trainings, demos) enhanced behavioral change.	Weak knowledge management system and limited documentation for replication.	Establish community learning hubs and partnerships with research and technical institutions to systematize lessons, feedback, and innovation for adaptation.	Documented and disseminated lessons from 7 woredas, accessible to national stakeholders for scaling and policy input.
Coordination with regional bureaus facilitated alignment with government priorities.	Monitoring indicators not sufficiently aligned with national MRV frameworks.	Harmonize project indicators with Ethiopia's CRGE and NFCS reporting protocols; build woreda-level data systems that support MRV.	Contributes directly to GCF Core Indicators and CRGE M&E systems, enhancing long-term climate finance access and national reporting capacity.

17. Project/Program rationale, objectives and approach

- To this end, the project interventions under this GCF SAP project will be designed cognizant of the requirement that these activities need to be of minimal to none in terms of their environmental and social impacts (Category C).

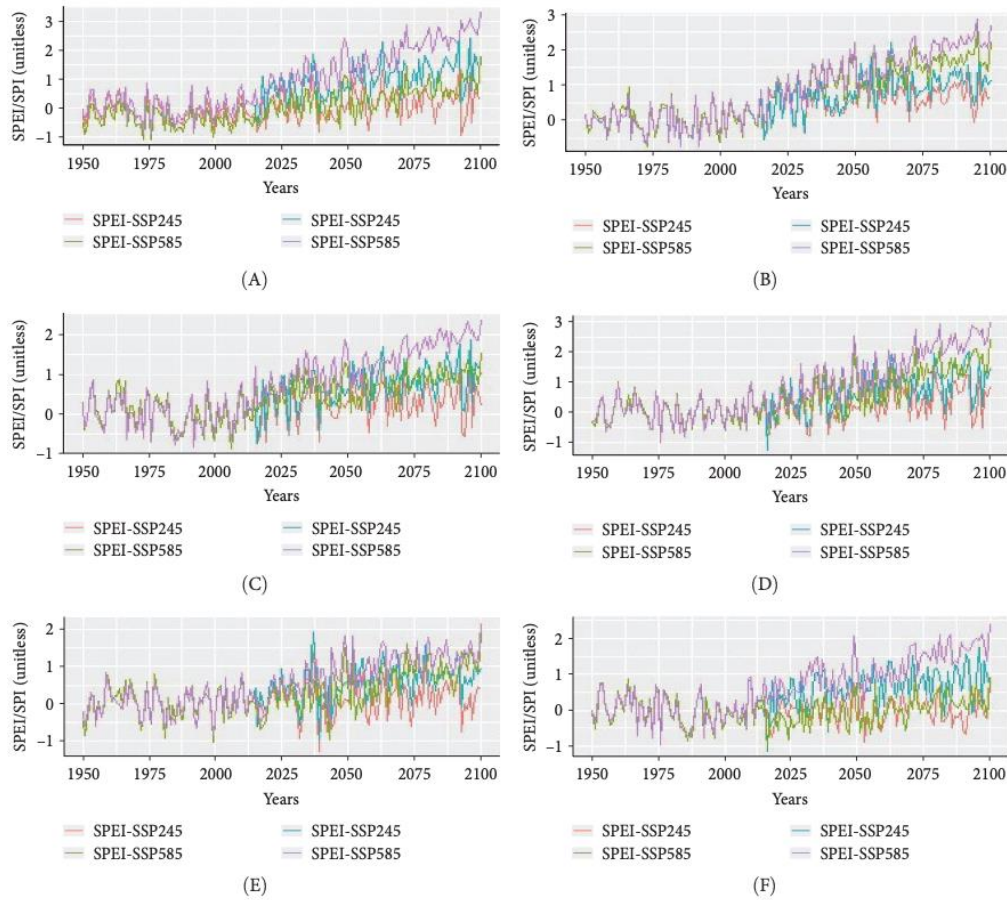
Climate Rationale

- Ethiopia's climate is characterized by pronounced spatial and temporal variability, driven by the Inter-Tropical Convergence Zone (ITCZ), the Indian Ocean Dipole (IOD), and the El Niño–Southern Oscillation (ENSO). Over the 1981–2010 baseline period, ENSO-driven anomalies have been the primary trigger of the country's most devastating droughts and flood events, with El Niño phases suppressing the Kiremt (June–September) rains and intensifying the risk of agricultural drought across the northern, northeastern, and rift valley regions, while La Niña phases have been associated with intensified rainfall and flood risk in the central and southwestern highlands. Historical analysis confirms that meteorological drought recurs at roughly 8–10 year intervals nationally, with the 1984/85 and 2015/16 El Niño-linked events representing the most severe

on record. Standardized Precipitation Index (SPI) and Standardized Precipitation Evapotranspiration Index (SPEI) analyses over the baseline period show no statistically significant monotonic trend in extreme precipitation indices, yet the frequency and spatial extent of both flood and drought episodes remain highly variable (Figure 1)- particularly in the lowland areas where the project is sited, underlining the structural climate vulnerability that this intervention seeks to address.¹

¹ Mengistu, A. G., Tesfuhuney, W. A., Woyessa, Y. E., Ejigu, A. A., & Alemu, M. D. (2025). *Future climate and hydrological extremes in Ethiopia: A CMIP6-based analysis*. *Advances in Meteorology*, 2025, Article 5571487. <https://doi.org/10.1155/adme/5571487>

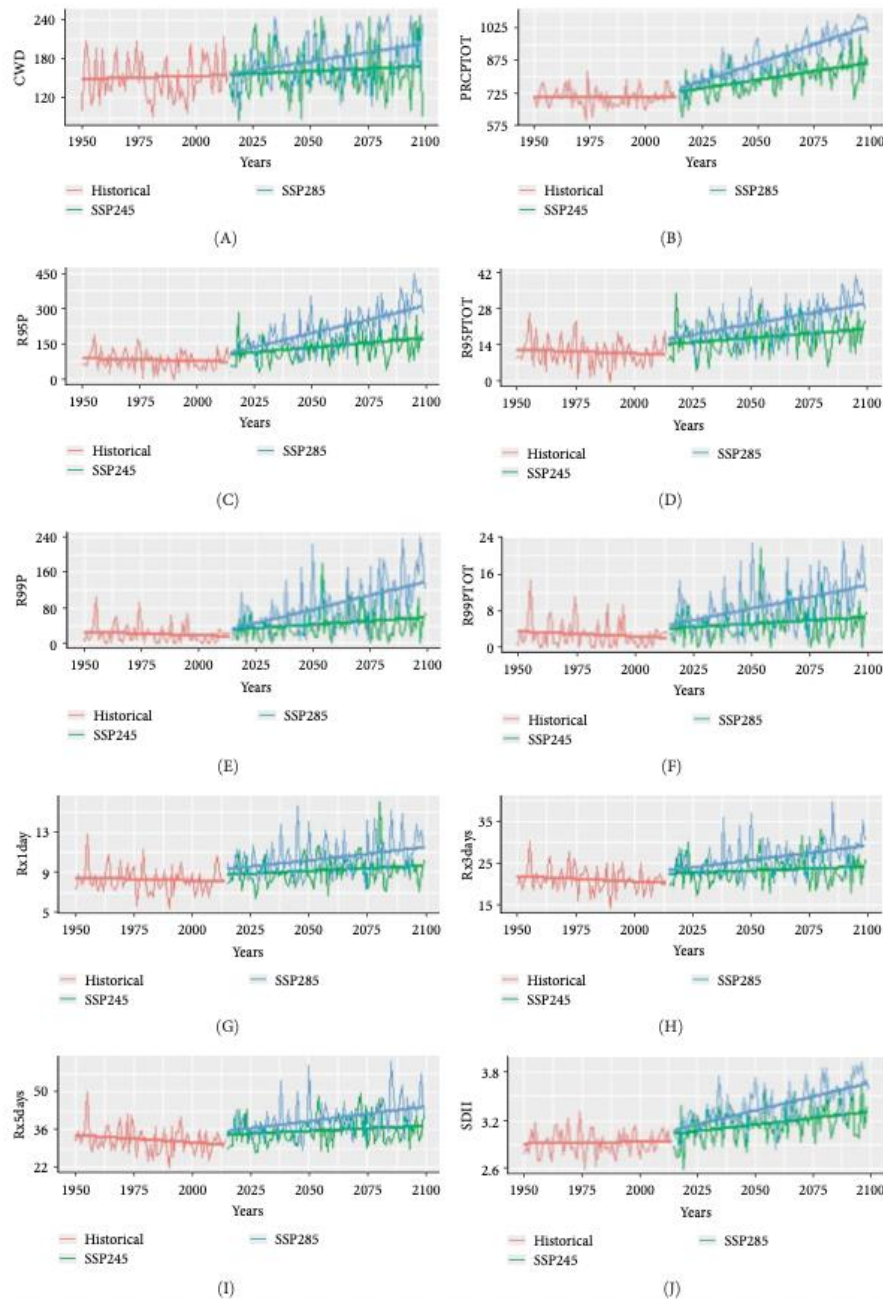
Figure 1. The time series of mean annual standardized precipitation index (SPI) and standardized precipitation evapotranspiration index, SPEI): (A) for the national average, (B) for Climate Region-1, (C) for Climate Region-2, (D) for Climate Region-3, (E) for Climate Region-4. (F) Climate Region-5



6. Looking ahead across the three future periods (2011-2040, 2041-2070, and 2071-2100), CMIP6 ensemble projections under both the SSP2-4.5 (medium emission) and SSP5-8.5 (high emission) scenarios-downscaled using NASA's NEX-GDDP-CMIP6 dataset at 0.25° resolution, consistent with the ≥ 50 km RCM requirement- point to highly significant increases across virtually all sector-relevant climate extreme indices. Mean annual precipitation is projected to rise by approximately 8-14% in the near term (2011–2040), 14-18% in the mid-century period (2041-2070), and up to 41% by late century (2071-2100) under SSP5-8.5 relative to the 1991–2010 baseline. Critically, these increases are concentrated during the already intense Kiremt season, while dry-season precipitation remains low-sustaining strong seasonality and compounding the simultaneous risk of wet-season flooding and dry-season drought. Key agriculture-relevant extreme indices including total annual wet-day precipitation (PRCPTOT), very wet day precipitation (R95P), extremely wet day precipitation (R99P), heavy precipitation days (R10mm), and daily rainfall intensity (SDII) all show highly significant upward trends under SSP5-8.5 ($p < 0.01$), with the greatest increases concentrated in the central, western, and southwestern highlands. Maximum temperatures are projected to rise by up to 3.6°C and minimum temperatures by up to 4.6°C by 2071-2100 under SSP5-8.5, expanding high heat-stress zones

into previously cooler agricultural areas and accelerating evapotranspiration- a direct threat to rainfed smallholder productivity, livestock, and water availability at the project site (Figure 2).²

7. Figure 2 Time-series analysis of precipitation indices at the national mean level: (A) CWD, (B) PRCPTOT, (C) R95P, (D) R95PTOT, (E) R99P, (F) R99PTOT, (G) Rx1day, (H) Rx3days, (I) Rx5days, (J) SDII.

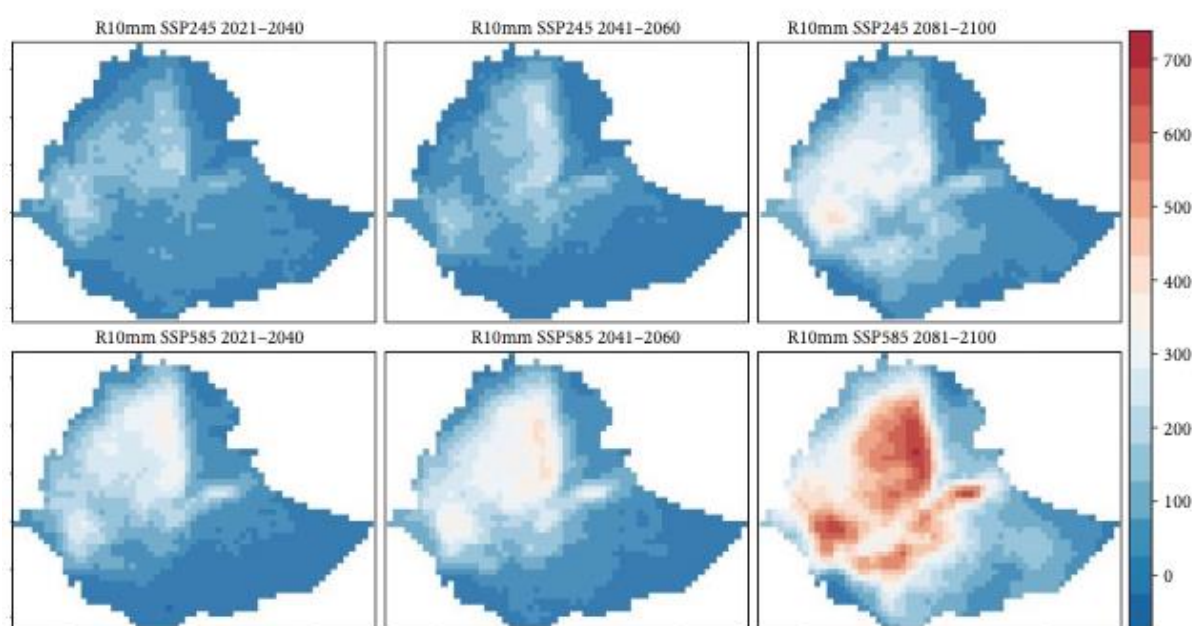


8. Despite the projected increase in total precipitation, SPEI-based drought analysis reveals a paradox of continuing drought risk even under wetter futures: while mean drought occurrence declines nationally under high emissions due to rising rainfall, temperature-driven evapotranspiration sustains water deficit conditions, particularly in arid and semi-arid lowland zones where the project communities are most exposed. The SPI consistently records higher values than SPEI across all projection periods, confirming that rising temperatures

² Mengistu, A. G., Tesfahuney, W. A., Woyessa, Y. E., Ejigu, A. A., & Alemu, M. D. (2025). Future climate and hydrological extremes in Ethiopia: A CMIP6-based analysis. *Advances in Meteorology*, 2025, Article 5571487. <https://doi.org/10.1155/adme/5571487>

are compounding moisture stress beyond what precipitation increases alone can offset. For agriculture, this translates into heightened exposure to both waterlogging and heat stress within the same growing season, disrupting planting windows, reducing yields, and threatening food security. For water resources and infrastructure, the sharp increase in consecutive wet day events (CWD), maximum 1-day, 3-day, and 5-day precipitation (Rx1day, Rx3days, Rx5days), and heavy rainfall days (R10mm) points to escalating flood frequency and peak flow intensity across central, western, and southwestern Ethiopia. These compound risks, amplified by ENSO variability, land use pressures, and limited adaptive capacity, constitute the core climate rationale for the proposed intervention and reinforce the urgency of investing in integrated water management, climate-resilient agricultural practices, and early warning systems at the project scale (Figure 3).³

Figure 3 Spatial variation of heavy precipitation days (R10mm): the values are the difference between each scenario and historical time



9. The proposed project specifically targets drought hotspots and climate-vulnerable rural communities, prioritizing those most affected by poverty and environmental stress. In response to these challenges, the project aligns closely with the priorities set forth in Ethiopia’s National Framework for Climate Services (NFCS) 2020-2030⁴, which outlines institutional and operational pathways to enhance the generation, delivery, and use of climate services at local levels. The NFCS provides woreda-level climate risk profiles and emphasizes integration of climate information into planning and investment decisions in sectors such as agriculture, water, disaster risk reduction, and public health. The project will leverage this framework by partnering with the National Meteorological Agency and regional institutions to deliver downscaled seasonal forecasts, agro-climatic advisories, and early warning alerts tailored to community needs. To support this, the project will establish Climate Services Units (CSUs) at woreda level that will co-produce, translate, and

³ Mengistu, A. G., Tesfahuney, W. A., Woyessa, Y. E., Ejigu, A. A., & Alemu, M. D. (2025). Future climate and hydrological extremes in Ethiopia: A CMIP6-based analysis. *Advances in Meteorology*, 2025, Article 5571487. <https://doi.org/10.1155/adme/5571487>

⁴ Government of Ethiopia (2020). *Ethiopian National Framework for Climate Services: Ten-Year Strategic Plan (2020–2030)*. National Meteorological Agency. Available at: <https://www.climate-service-centre.de>

disseminate climate information in accessible formats, especially for women, youth, and marginalized households. These units will operate in close coordination with Smart Village Committees and community development agents, ensuring that climate information informs crop planning, water management, and livelihood decisions. By adopting the NFCS-endorsed User Interface Platform approach, the project ensures sustained dialogue between information providers and users, enhances service relevance, and strengthens local climate resilience through data-informed action.

10. Shifting climate patterns, extreme weather events, and high poverty levels have adversely affected livelihoods, agriculture, and water resources in the selected kebeles. Building on the success of the Adaptation Fund-supported initiative, the "Building Climate Change Resilience of Vulnerable Households in Selected Localities of Ethiopia" project aims to extend positive outcomes to 15 new kebeles, directly benefiting 96,000 (with 50 percent women beneficiaries) people and indirectly impacting 460,000. Objectives include (i) reducing vulnerability through improved water access, (ii) expanding small-scale solar operated irrigation, (iii) promoting integrated watershed management practices, (iv) enhancing the adaptive capacities of women and vulnerable groups, and (v) strengthening local capacity for drought risk = reduction and climate-informed planning. To enable sustained climate resilience, the project will also invest in institutionalizing climate information services at the woreda and community levels. In line with Ethiopia's National Framework for Climate Services (NFCS), the project will establish Climate Services Units (CSUs) embedded within local sector offices to co-produce, tailor, and disseminate localized climate information. These units will be equipped to provide regular seasonal forecasts, drought and flood alerts, and agro-advisories in collaboration with the National Meteorological Agency and regional early warning directorates. Special attention will be paid to ensuring inclusive access and usability of climate services for women, youth, and other marginalized groups. Further, the project will adopt the User Interface Platform (UIP) approach endorsed by the NFCS to facilitate participatory forecast interpretation sessions, feedback loops, and joint planning between CIS providers and end users. By embedding NFCS operational elements into Smart Village Committees and development planning structures, the project strengthens not only immediate resilience outcomes but also the long-term sustainability of climate-responsive governance at the local level.
11. Implementation oversight lies with the Ministry of Finance, coordinating with regional and woreda finance bureaus. Executing entities, including the Ministries of Water and Energy, Agriculture, Irrigation and Lowland, and the Ethiopian Forest Development, will manage operations, ensuring the integration of environment and social risk management. In collaboration with the Environment Protection Authority (EPA), the Ministry of Finance will also guide environmental and social assessments, safeguarding measures, and gender-focused interventions. In addition to sectoral coordination, the Woreda Finance and Economic Cooperation Offices will play a key role in mainstreaming project activities into local planning and budgeting systems. The project will build on their existing mandates and past collaboration under the Adaptation Fund project by enhancing their capacity in climate budget tracking, resource mobilization, and multi-sector coordination.
12. The project's comprehensive approach integrates technical expertise, multi-disciplinary strategies, and lessons learned from past successful initiatives. The project is grounded in an integrated theory of change that draws on the Sustainable Livelihoods Approach (SLA) and the Water-Energy-Food (WEF) nexus to address climate vulnerability in a multidimensional and systemic manner. The baseline context in the target woredas

is characterized by climate-induced water scarcity, degraded natural resources, low agricultural productivity, and limited income-generating opportunities, particularly among women and marginalized rural populations. These factors contribute to chronic poverty, food insecurity, and high dependence on natural resources, conditions that are further exacerbated by increasing climate variability and the absence of adaptive infrastructure and services. The project seeks to overcome this baseline through a holistic set of interventions that strengthen the five core livelihood capitals-natural, physical, human, social, and financial. It does so by enhancing access to climate-resilient water infrastructure, supporting solar-powered small-scale irrigation, promoting integrated watershed and land management practices, and enabling diversified livelihood opportunities linked to agri-enterprise development and renewable energy access. These interventions not only reduce immediate vulnerability but also build long-term adaptive capacity at household and system levels. In addition, the project explicitly applies the WEF nexus lens to ensure coherent and efficient use of interdependent resources. For example, investments in solar-powered irrigation systems are designed to simultaneously address water access (W), support food production (F), and leverage clean energy (E), while minimizing trade-offs and maximizing synergies. This systems-based approach promotes resource-use efficiency, reduces ecological stress, and enhances resilience outcomes across sectors. Community-level planning processes (through the Smart Village model) will be informed by climate data and livelihood risk analysis to ensure that interventions are responsive to both local priorities and sectoral interlinkages. By combining these two frameworks, the project establishes a robust conceptual foundation that links climate resilience to livelihood improvement and resource systems transformation. This alignment supports national adaptation goals, addresses structural drivers of vulnerability, and enhances the capacity of institutions and communities to anticipate, absorb, and adapt to climate-related shocks in a sustainable and inclusive manner.

B. PROJECT/PROGRAM DETAILS

B.1. Context and baseline

12. Ethiopia's Climate Vulnerability and Socioeconomic Context: Ethiopia, Africa's second most populous country, faces critical and escalating climate vulnerabilities that demand urgent, evidence-based intervention. The country is highly susceptible to extreme climate events, including prolonged droughts, erratic rainfall, and floods, which underscore the urgency of mitigating and adapting to these changes. The largely agrarian economy, contributing approximately 35% to the national GDP and employing 85% of the labour force, faces severe consequences from climate-induced crop failures, livestock losses, and diminished agricultural productivity. Rural livelihoods are deeply tied to rain-fed agriculture and natural resource systems that are acutely sensitive to climate variability, making communities in the project areas among the most exposed in the country.

13. Observed Climate Trends in the Target Areas: The project areas are located in agroecological zones that are highly sensitive to climate variability, particularly recurrent droughts and erratic rainfall patterns. Climate trends observed over the past two decades reveal a significant decline in the length of growing periods and an increase in the frequency of dry spells and heat extremes. According to the National Meteorological Agency's woreda-level climate diagnostics, temperature increases of 0.37°C to 0.49°C per decade have been recorded in lowland and midland agro-ecologies within and adjacent to the target woredas, accompanied by measurable shifts

in seasonal rainfall distribution and intensity. Kiremt (main rainy season, June-September) onset has become increasingly delayed and variable, while Belg (short rainy season, February-May) rains have declined in reliability across the highland and transitional zones. In the targeted kebeles, these climate stressors have resulted in degraded watersheds, declining crop yields, water shortages, and heightened competition over shrinking natural resources. Women and children disproportionately bear the burden of water and food insecurity due to gendered roles in agricultural labour and resource collection.

14. Forward-Looking Climate Projections: IPCC AR6 and National Evidence: Building on observed trends, the project design has been explicitly informed by forward-looking climate projections drawn from the Intergovernmental Panel on Climate competition over shrinking natural resources. Women and children disproportionately bear the burden of water and food insecurity due to gendered roles in agricultural labour and resource collection.

****14.** Forward Change Sixth Assessment Report (IPCC AR6), Working Group II, Chapter 9 (Africa), and supplemented by the National Meteorological Agency's Ethiopia National Framework for Climate Services (NFCS) woreda-level climate diagnostics. These projections establish the climate risk envelope within which the project's interventions must remain effective over their full technical lifespan.

15. Temperature Projections: IPCC AR6 (WG II, Chapter 9, Section 9.5) projects that under a 1.5°C global warming scenario, mean annual temperatures across East Africa and the Horn of Africa are likely to increase by 1.2°C to 1.7°C above the 1995-2014 baseline by the 2030s, and by 1.5°C to 2.1°C by the 2050s. Under a 2°C global warming scenario, these increases reach 1.8°C to 2.6°C above the baseline by mid-century, with the greatest warming concentrated in semi-arid lowland areas. In the target woredas, which span lowland and midland agro-ecologies across Amhara, Oromia, Harari, Sidama, Dire Dawa, and Tigray, these projections translate into materially higher evapotranspiration rates, accelerated soil moisture depletion during dry periods, and significantly increased water demand for both domestic use and agricultural production. The NMA's NFCS corroborates these projections, recording observed temperature trends that are tracking the lower bound of IPCC AR6 1.5°C scenario projections. Critically, IPCC AR6 (Chapter 9) identifies the Horn of Africa as a region where climate change is projected to intensify heat stress at rates exceeding the global mean, with compound heat-drought events becoming more frequent and severe. The frequency of days exceeding the local 90th percentile temperature threshold is projected to increase by 20-30 additional days per year under 1.5°C warming, and by 40-60 days per year under 2°C warming, with direct consequences for livestock health, crop pollination success, and water system performance.

16. Rainfall and Drought Projections: IPCC AR6 (WG II, Chapter 9) projects increased inter-annual and intra-seasonal rainfall variability across East Africa under all warming scenarios, with a 10-20% reduction in growing season rainfall reliability in semi-arid zones of Ethiopia under 2°C warming by the 2050s. While projected changes in total annual precipitation are characterised by higher uncertainty than temperature projections, the signal on variability is robust: dry spells within rainy seasons are projected to become longer and more frequent, while intense short-duration rainfall events become more common, increasing surface runoff and erosion while reducing infiltration and groundwater recharge. IPCC AR6 further projects that multi-year drought cycles, such as those that affected the Horn of Africa in 2009-2011, 2016-2017, and 2020-2023, will become more frequent under 1.5°C and 2°C scenarios, with recovery periods between droughts becoming shorter. For the specific agroecological conditions of the target woredas, these projections imply: a continued shortening of the effective

growing period by an estimated 5-10 days per decade under the 1.5°C scenario; increased frequency of below-normal Belg rains, reducing the viability of short-season crops; declining reliability of surface water flows in seasonal streams and rivers that currently support informal irrigation; and accelerated groundwater depletion where abstraction is not managed sustainably. The NMA NFCS woreda diagnostics for all seven target woredas corroborate these trends, each recording declining growing period lengths of 7-14 days over the 2000-2020 period.

17. Agricultural and Food Security Projections: IPCC AR6 (WG II, Chapter 9) projects that climate change will reduce rain-fed crop yields in sub-Saharan Africa by 10-30% under 2°C of warming by the 2050s, with the steepest reductions in semi-arid lowland systems that are already near or beyond optimal temperature thresholds for staple crops. For smallholder maize and sorghum systems, the dominant crops in the target woredas, projected yield losses are in the range of 15-25% under a 2°C scenario, driven by combined heat stress, reduced water availability during grain-filling, and increased pest and disease pressure. Livestock systems face additional risks from reduced fodder availability, increased heat stress on animals, and heightened disease burdens. IPCC AR6 further projects that without adaptation, the proportion of the Ethiopian rural population exposed to severe food insecurity will increase substantially under warming scenarios, with the most acute impacts concentrated in the lowland and semi-arid zones in which the project is implemented.

18. Water Security Projections: IPCC AR6 (WG II, Chapter 9) projects significantly increased water stress across East Africa under both 1.5°C and 2°C warming scenarios. In the Ethiopian context, this manifests as declining dry-season stream flows, accelerated groundwater depletion under current extraction rates, and increased evapotranspiration reducing the effective water availability for both domestic and productive purposes. The NMA NFCS projects that groundwater recharge rates in the Rift Valley and its margins, relevant to the Adama, Aleltu, and Erer project woredas, will decline by 10-20% under 2°C warming due to reduced infiltration from more intense but shorter rainfall events. This has direct implications for the sizing and long-term sustainability of solar-powered pumping systems, and has informed the groundwater management planning process under Activity 1.2.3.

Table 1. Linkage of Projections to Project Design Parameters

Climate Projection (IPCC AR6 / NMA NFCS)	Project Design Response
Temperature increase of 1.5°C-2.6°C by 2050; increased evapotranspiration	Solar pump capacities for existing wells sized with a 25% technical buffer to ensure energy sufficiency for increased pumping hours during high-heat periods.
Reduced dry-season stream flows; groundwater recharge decline of 10-20% in the Rift Valley margin	Nature-based water retention (mulching, vegetative contouring) under Activity 2.2.3 to enhance soil-moisture storage. Groundwater modeling (Activity 1.2.3) ensures pumping rates remain within sustainable limits.
10-20% reduction in growing season rainfall reliability; longer intra-season dry spells	Water-efficiency kits (gated pipes, localized drip) prioritized over flood irrigation across the 14 established schemes to maximize water productivity during periods of water stress.
Increased frequency and severity of multi-year drought cycles in the Horn of Africa	Drought-tolerant native species selected for biological restoration and agroforestry (Activities 3.1.4, 3.2.6) to create a natural ecological buffer against prolonged dry cycles.

Rain-fed crop yield decline of 15-25% under 2°C for smallholder maize and sorghum	Livelihood diversification into low-water intensity enterprises (Apiculture, Poultry) and the transition to solar-powered supplemental irrigation for existing farm plots to stabilize yields.
Intensified short-duration rainfall events increasing surface runoff and erosion	Biological gully stabilization and vegetative filter strips (Output 3.1) designed to slow peak runoff intensity and prevent soil loss through natural root-anchoring.
Compound heat-drought events becoming more frequent; 20-60 additional extreme heat days per year	Climate information services (Activity 1.1.4) deliver heat-drought early warnings, allowing farmers to adjust irrigation schedules and manage livestock heat stress through mobile veterinary support.

19. Emissions Context and Mitigation Baseline: In 2020, Ethiopia's total GHG emissions were estimated at 300 MtCO₂e, with agriculture accounting for nearly half of the total. Limited access to electricity in rural areas forces reliance on inefficient diesel-powered pumps for irrigation and water supply, contributing to localised carbon emissions. In the project areas, charcoal production, open grazing, and land degradation are contributing to emissions and reducing carbon sink potential. These localised drivers align with the broader IPCC AR6 Working Group III (Chapter 7: Agriculture, Forestry and Other Land Uses) finding that land-use change in sub-Saharan Africa represents one of the highest-potential mitigation opportunity areas, particularly through reforestation, agroforestry, sustainable land management, and clean energy substitution for rural energy services. The project contributes to mitigation benefits by promoting solar-powered irrigation, rehabilitating degraded watersheds, introducing agroforestry systems, and supporting alternative livelihoods that reduce forest pressure. These actions are aligned with Ethiopia's updated Nationally Determined Contributions (NDC) targets on climate-smart agriculture, reforestation, and rural energy access, and with the country's Long-Term Low Emission and Climate Resilient Development Strategy (LT-LEDS).

20. Baseline Vulnerability in the Target Woredas: The ongoing drought cycle since late 2020 has exacerbated Ethiopia's vulnerability, surpassing previous events and affecting over 24.1 million people. Over 4.5 million livestock are estimated to have died due to lack of pasture and water in Oromia and Somali regions, and approximately 7.2 million individuals required agricultural support at the peak of the crisis. The target woredas were selected based on multi-criteria analysis combining exposure to climate hazards, poverty incidence, and institutional readiness. Specific adaptation needs identified through field consultations and national assessments include: (i) access to reliable water sources for domestic and productive use; (ii) sustainable soil and water conservation systems; (iii) resilient rural livelihoods; and (iv) early warning and climate information services. Ethiopia's National Adaptation Plan estimates an annual adaptation financing need of USD 6 billion over 15 years to address climate change, reflecting the scale of the challenge faced.

21. The project responds to these needs by establishing climate-resilient water infrastructure, deploying solar technologies, restoring degraded landscapes, and mainstreaming localised climate services based on NFCS protocols. Ethiopia ranks among the lowest on the Notre Dame Global Adaptation Index (ND-GAIN), indicating severely limited adaptive capacity despite improvements in the Human Development Index, remaining 175th out of 191 countries. These structural limitations reinforce the case for targeted concessional grant finance to deliver the scale of investment required. The integration of woreda-level climate data, forward-looking scenario projections drawn from IPCC AR6 Working Group II Chapter 9, NMA NFCS diagnostics, and community-level climate knowledge ensures that the project's solutions are context-specific, designed to remain effective under the

full range of future climate conditions projected for the target areas, and positioned to deliver durable adaptation outcomes well beyond the implementation period.

Without-project and with-project scenario

22. The proposed project is designed to shift the target kebeles from a continuation of climate-vulnerable, reactive coping systems toward an integrated, climate-resilient development pathway. The counterfactual scenario is that, without GCF support, the target communities would remain exposed to worsening drought, rainfall variability, heat stress, land degradation, water insecurity and climate-sensitive livelihoods, while local institutions would continue to face financial, technical and coordination constraints that limit their ability to respond at scale. With GCF support, the project will enable a coherent package of climate-informed planning, solar-powered water and irrigation access, nature-based watershed restoration, climate-smart agriculture and livelihood diversification for women, youth and other vulnerable groups.

Outcome Area 1: Climate-informed local planning, institutional capacity and governance

23. Without the project, woreda and kebele institutions would continue to have limited capacity, tools and resources to integrate projected climate risks into local planning, budgeting and implementation. Climate information would remain insufficiently translated into practical local decisions on water allocation, land use, watershed management, agricultural production and livelihood planning. Local grievance, accountability and coordination systems would also remain weak, limiting the ability of communities and institutions to anticipate, absorb and respond to recurrent droughts, rainfall variability, heat stress and resource-related pressures. As climate variability intensifies, planning would likely remain fragmented across sectors, with water, agriculture, land and livelihood interventions implemented in an uncoordinated manner.

24. With the project, GCF support will strengthen local institutional capacity for climate-resilient planning and implementation. The project will support knowledge management, capacity development, environmental and social standards, gender-responsive planning, grievance redress mechanisms, communication and outreach, climate-informed water-demand assessments, water balance assessments, and integrated water-agriculture-land-ecosystem and livelihood diversification plans. This will enable woreda and kebele institutions to use climate information more systematically, improve coordination across sectors, and guide investments under the water, watershed, agriculture and livelihood components. The expected trajectory is a shift from fragmented and reactive local planning toward risk-informed, inclusive and integrated local climate resilience planning.

Outcome Area 2: Solar-powered potable water access, productive water use and small-scale irrigation

25. Without the project, water insecurity in the target kebeles would likely persist or worsen under projected warming, increasing evapotranspiration, more variable rainfall and declining dry-season water availability. Communities would continue to rely on underperforming or poorly maintained water systems, with limited capacity for operation and maintenance. Small-scale irrigation coverage would remain low, and productive water use would continue to be constrained by unreliable energy access, weak water-management arrangements and limited investment in climate-resilient technologies. Diesel-dependent pumping, where used, would continue to expose communities to fuel cost volatility, operational unreliability and localized greenhouse gas emissions. Women and girls would continue to bear a disproportionate burden from water collection and household water insecurity.

26. With the project, GCF support will improve access to climate-resilient potable water and productive water systems through solar-powered pumping, rehabilitation and retrofitting of existing water systems, solar-powered

small-scale irrigation, water safety measures, operation and maintenance capacity, water user structures and irrigation user associations. The project will also support water balance assessments and groundwater management planning to help ensure that water use remains within sustainable limits under future climate conditions. The expected trajectory is improved reliability of domestic and productive water access, reduced dependence on diesel-powered pumping, improved irrigation access for target households, reduced time burden for women, and strengthened community capacity to manage water systems beyond the project period.

Outcome Area 3: Ecosystem restoration, watershed resilience and climate-smart agriculture

27. Without the project, degraded watersheds, rangelands, gullies and communal areas would remain vulnerable to erosion, runoff, declining soil fertility and reduced water retention. Projected increases in intense rainfall events, longer dry spells and rising temperatures would further reduce the resilience of agro-ecological landscapes and farming systems. Smallholder farmers would continue to rely heavily on climate-sensitive and largely rain-fed production systems, with limited adoption of climate-smart agriculture, agroforestry, vegetative soil and water conservation, conservation tillage, mulching, biological gully stabilization and fodder development. Under this scenario, land degradation and low agricultural productivity would likely reinforce household vulnerability, food insecurity and pressure on remaining natural resources.

28. With the project, GCF support will enable nature-based watershed restoration, land stewardship and climate-smart agriculture at farm and landscape levels. The project will support restoration and/or protection of degraded watershed, rangeland, gully and communal areas, as well as farmland and production landscapes applying climate-smart agriculture and land stewardship practices. Measures will include vegetative strips, mulching, conservation tillage, agroforestry, windbreaks, biological gully stabilization, fodder development, pasture management, area closure, enhanced natural regeneration, afforestation/reforestation and native grass reseeding. The expected trajectory is improved soil and water retention, reduced erosion, increased resilience of farming systems, improved ecosystem services and strengthened capacity of communities to manage agro-ecological landscapes under changing climate conditions.

Outcome Area 4: Climate-resilient livelihoods, women's empowerment and economic resilience of vulnerable groups

29. Without the project, women, youth, female-headed households and other vulnerable groups would continue to face limited access to climate-resilient livelihood options, market information, value chain support, finance, productive inputs and enterprise opportunities. Household income would remain highly dependent on climate-sensitive agriculture, livestock and natural-resource-based coping strategies. Under projected climate change, repeated droughts, heat stress, water scarcity and land degradation would further undermine livelihood security, increase food insecurity, and reinforce the economic exclusion of women and vulnerable groups. Local livelihood support would also remain insufficiently tailored to climate risk, market conditions and the differentiated capacities of target households.

30. With the project, GCF support will strengthen adaptive and economic resilience through climate-resilient, market-oriented livelihood diversification, enterprise support and access to finance-related mechanisms. The project will support market and value chain analysis, access to market information, fruit and vegetable production, improved forage, poultry, apiculture, small ruminants, mobile veterinary support, awareness of livelihood options, and updated analysis of local livelihood opportunities. These interventions will prioritize women, youth, female-headed households and other vulnerable groups and will be informed by local climate risks, market feasibility and

household capacities. The expected trajectory is increased livelihood diversification, improved income stability, greater participation of women and vulnerable groups in climate-resilient economic activities, and reduced reliance on climate-sensitive coping strategies.

31. Overall, the without-project scenario is one in which the target kebeles remain locked into a pattern of rising climate exposure, weak local adaptive capacity, degraded natural resources, unreliable water access and limited livelihood resilience. The with-project scenario is one in which GCF support enables a shift toward integrated, locally supported climate resilience through strengthened institutions, more reliable solar-powered water and irrigation systems, restored ecosystems, climate-smart production systems and diversified livelihoods. This provides the additionality of GCF support by demonstrating how the project changes the expected development pathway under projected climate change.

Avoiding maladaptation and ensuring sustainability of adaptation measures

32. The project has been designed to avoid maladaptation and ensure that the proposed adaptation measures remain sustainable under current and future climate conditions. The project does not finance large-scale infrastructure, new major irrigation expansion, dams, large diversion works, or activities that would significantly alter hydrological systems. Instead, the project focuses on low-risk, Category C-compatible activities, including climate-informed planning, groundwater management planning, kebele-level water balance assessments, retrofitting of existing potable water systems, solar-powered upgrading of established irrigation schemes within existing footprints, water-use efficiency improvements, operation and maintenance capacity, spare-parts readiness, water-quality monitoring, and nature-based watershed and soil-moisture measures.

33. Groundwater abstraction and water-resource sustainability. A potential maladaptation risk is that improved pumping capacity could increase water abstraction beyond sustainable limits, especially under projected drier and hotter conditions. The project addresses this risk through Activity 1.2.3, which will assess how climate change may affect future water demand and water-resource pressure and will develop a groundwater management plan. This will be complemented by Activity 1.2.4, which will prepare indicative water balance assessments for each target kebele, comparing water availability and demand from domestic, agricultural, livestock and ecosystem uses under current and future climate risks. These assessments will guide the siting, sequencing, technical design and operation of potable water and irrigation investments, ensuring that supported systems are calibrated to local water availability and do not promote unsustainable abstraction.

34. Irrigation expansion and water-use efficiency. A second potential maladaptation risk is that improved irrigation access could encourage expansion of water use beyond locally sustainable levels. The project mitigates this by focusing on the technical optimization and solar-powered upgrading of established small-scale irrigation schemes, rather than creating new large-scale irrigation infrastructure. Activity 2.2.1 will prepare detailed technical designs and tender documents using the findings of the water-balance analysis under Output 1.2. Activity 2.2.2 will support solar-powered upgrading and water-use efficiency improvements within existing irrigated footprints, including high-efficiency distribution and monitoring technologies such as gated pipes, localized drip components, water meters, digital sensors and related monitoring tools. Activity 2.2.3 will further support nature-based water-retention and soil-moisture enhancement measures, such as vegetative contouring, mulching and planting of deep-rooted native species, to improve productive water availability without increasing pressure on water resources.

35. Long-term operation and maintenance of solarized systems. A third potential risk is that solarized water and irrigation systems could become unsustainable after installation if communities and local institutions are not equipped to operate, maintain and finance them. The project addresses this through practical O&M measures embedded in the activity design. Under Output 2.1, the project will procure spare parts for the initial operational period, provide O&M training for women and men from local associations and woreda-level structures, and support service optimization and water-safety management through smart metering, water-quality testing and governance-based monitoring. Under Output 2.2, maintenance and operation support, spare-parts arrangements and irrigation user association support will be provided so that solar-powered irrigation systems can be operated and maintained beyond the project period. Training will cover routine operation, preventive maintenance, troubleshooting, roles and responsibilities, fee collection and local management of renewable-energy-based water systems.

36. Avoiding environmental and social risks from infrastructure. The project has minimized infrastructure-related investments to maintain the Category C classification. Potable water activities focus on rehabilitating and retrofitting existing systems, minor upgrading within existing site footprints, water safety, monitoring and service optimization. Irrigation activities focus on solar-powered upgrading and technical optimization of established schemes, rather than new major construction. Watershed and agriculture activities are primarily nature-based and biological, including vegetative strips, mulching, conservation tillage, agroforestry, windbreaks, biological gully stabilization, fodder development, pasture management, area closure, enhanced natural regeneration, afforestation/reforestation, live fencing, native grass reseeding and grazing management. These measures are expected to reduce erosion, improve soil moisture, strengthen ecosystem services and buffer climate risks without creating significant adverse environmental or social impacts.

37. Monitoring and adaptive management. Potential maladaptation and sustainability risks will be monitored through the project's planning, safeguards, O&M and results-monitoring systems. Key monitoring measures will include tracking completion and use of groundwater management plans and kebele-level water balance assessments; monitoring functionality of solar-powered potable water and irrigation systems; maintaining O&M records and spare-parts inventories; using water meters, sensors and water-quality testing where applicable; reviewing the functioning of water user and irrigation user structures; and monitoring the performance of nature-based restoration and soil-moisture measures. If monitoring identifies risks of over-abstraction, poor functionality, water-quality issues, weak O&M performance, or unintended pressure on land and water resources, corrective measures will be taken through updated local plans, revised operating arrangements, additional training, maintenance support, and adjustments to water-use management at site level.

38. Through these measures, the project ensures that adaptation benefits are not achieved at the expense of future water security, ecosystem health or community sustainability. The project therefore supports climate resilience through a cautious, risk-informed and Category C-compatible approach that strengthens existing systems, improves resource-use efficiency, builds local O&M capacity, and integrates future climate risks into water, land, agriculture and livelihood planning.

B.2.1. Project/Program description

Description of project components, Outputs and Activities

28. The proposed project is built on an integrated, climate-resilient, and low-emission development framework, drawing on three interlinked foundations: (i) the Sustainable Livelihoods (SL) Approach, (ii) Locally-Led Solutions principles, and (iii) Ethiopia's national climate resilience frameworks, including the CRGE Strategy and National Adaptation Plan (NAP). Together, these serve as the conceptual basis for non-structural interventions that directly address climate-induced vulnerability and ecosystem degradation in Ethiopia's drought-prone lowlands.

29. At the core of this approach is the recognition that ecological fragility and climate vulnerability demand coherent, cross-sectoral responses. Consistent with the SL framework, the project strengthens five core livelihood assets, human, natural, physical, financial, and social capital, as levers for resilience. Each project component contributes to these capitals through a low-risk, technical, and nature-based lens:

Component 1 enhances institutional and human capacities for climate governance and community planning.

Component 2 modernizes existing systems through solar-powered energy transitions and technical efficiency upgrades.

Component 3 restores degraded ecosystems and strengthens natural capital through nature-based solutions (NbS).

Component 4 builds financial and social capital through diversified climate-resilient livelihoods for women and youth.

30. In line with the GCF's Updated Strategic Plan (USP-2), the project fully embraces Locally-Led Solutions principles. It aligns with the eight principles promoted by the Global Center on Adaptation (GCA), including devolving decision-making and investing in local capabilities. The project fosters community leadership by strengthening Woreda-level governance and establishing inclusive platforms like Smart Village Committees. These participatory plans integrate scientific climate risk assessments (via NMA and GIS tools) with indigenous knowledge to ensure ownership and minimal-to-no environmental or social risk.

31. The project contributes to low-emission development by promoting renewable energy for water pumping (replacing diesel systems), climate-smart agriculture, and ecosystem-based adaptation. These strategies yield adaptation benefits and mitigation benefits. These actions align with GCF result areas, notably:

Increased resilience of livelihoods, food, and water security.

Improved health and well-being of climate-vulnerable populations.

Low-emission sustainable development pathways via fossil-fuel displacement.

32. The interaction between the four components is designed around a dynamic feedback loop, linking strategic planning (Component 1) with technical and biological delivery (Components 2-4). This systemic integration ensures the project contributes to key GCF-level outcomes, including:

Outcome 1.2: Improved institutional systems for climate-responsive planning.

Outcome 1.3: Strengthened adaptive capacity and community ownership.

Outcomes 2.2 and 3.2: Modernized climate-resilient systems and restored ecosystems through biological and technical upgrades.

33. Each component's outputs report against GCF core indicators outlined in the Logical Framework (Annex 2a), such as:

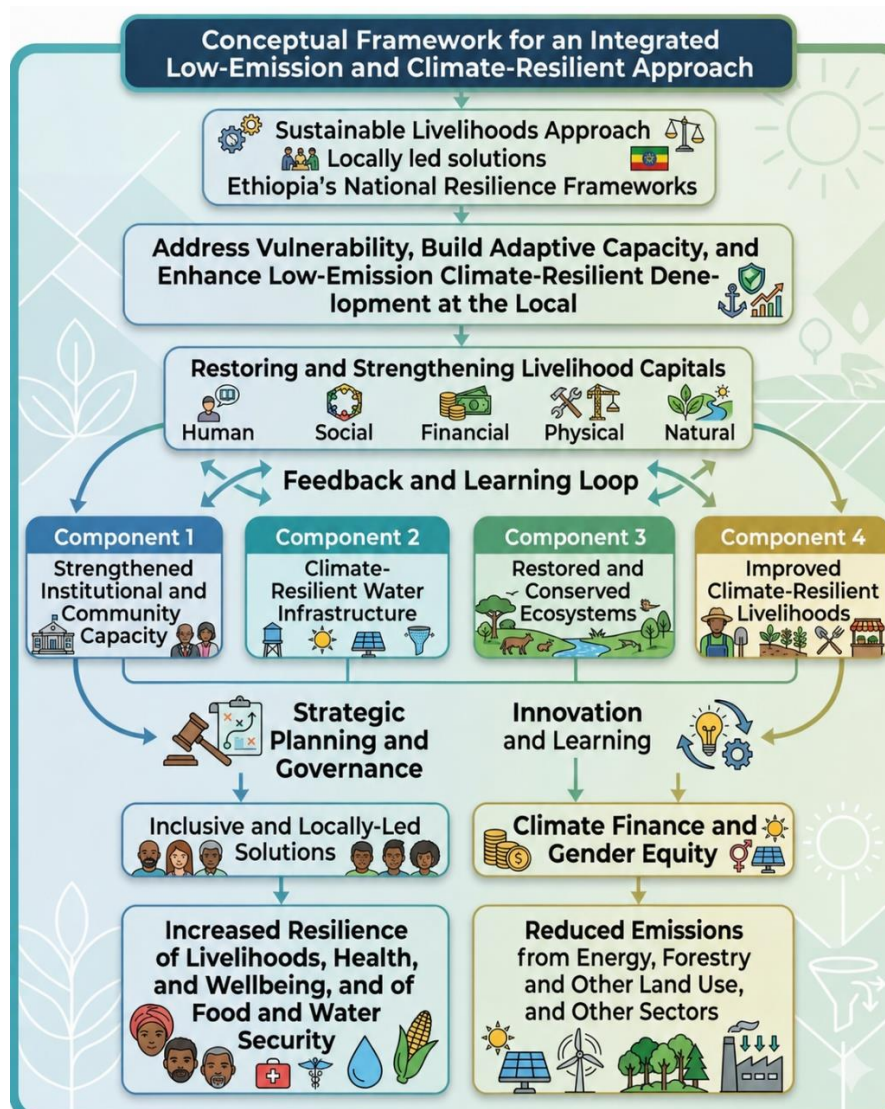
Number of beneficiaries adopting climate-resilient practices.

Hectares of land restored through assisted natural regeneration and improved water access via solar retrofitting.

Number of women/youth engaged in green value chains and climate-informed enterprises.

34. This integrated framework ensures that the project's inputs lead to clearly traceable outputs and measurable outcomes. This model is summarized in Figure 4.

Figure 4. A unified model for local sustainability and resilience, emphasizing iterative learning



35. This conceptual foundation is operationalized through the Theory of Change (ToC) presented in the following section, which articulates the causal logic linking inputs, outputs, outcomes, and impacts. The ToC diagram and accompanying narrative illustrate how the project's bundled interventions are expected to achieve transformative adaptation outcomes in vulnerable rural settings.

Theory of change

36. The Theory of Change underpinning this SAP project presents a clear and integrated pathway through which institutional, ecological, and socioeconomic vulnerabilities will be addressed in a climate-resilient and inclusive manner. Rooted in Ethiopia's national frameworks, including the CRGE Strategy and the National Adaptation Plan (NAP), it reflects the principles of the Sustainable Livelihoods Approach and the eight principles of Locally-Led Solution. It builds on the results of successfully completed adaptation initiatives, providing a tested basis for scaling impact through non-structural and low-risk interventions.

37. The project targets highly vulnerable woredas in Ethiopia's lowland regions, where recurrent drought and land degradation have eroded resilience. The interventions tackle the root causes of vulnerability by sequencing investments across four interlinked components: strengthening institutional systems, modernizing existing water services through renewable energy, restoring ecosystems via nature-based solutions, and promoting inclusive, adaptive livelihoods.

38. The pathway begins by strengthening local governance. If institutional capacities at woreda and kebele levels are enhanced through tailored training and participatory decision-making, then local governments and communities will be empowered to lead risk-informed adaptation. Empowering local leadership ensures that adaptation responses are context-specific and socially inclusive. This assumes local administrative continuity and national coordination, while addressing barriers such as high staff turnover through institutionalized knowledge management. Moreover, capability building through trainings on climate resilient livelihood interventions, drinking water and irrigation development and efficiency, sustainable land management and environmental and social safeguards implementation, will enable participating kebeles, civil society organizations, water and irrigation user associations, and communities to identify and co-design interventions which respond to area of gaps and addresses their needs.

39. Next, is the identification and community co-led development of priorities with regards to drinking water access and irrigation water use efficiency. To this end the project management unit will set clear conditions and clauses to ensure that interventions will be implemented as intended and duly considering the GCF-SAP ESS requirements and the exclusion list presented under section D3 of this proposal (and the ESAP Annex 12). As such the project will facilitate soft measures namely the technical retrofitting of existing water points with solar-powered pumping systems. This allows communities to move from fossil-fuel to solar power addresses both climate mitigation and adaptation goals. This pathway assumes that electro-mechanical technical standards and community-based operations and maintenance (O&M) mechanisms are in place. Moreover, the project assumes existing fuel-based generators have been decommissioned already, as per the requirements of government. Finally sustainability is managed by focusing on efficiency upgrades within existing footprints rather than new, infrastructure construction and civil works.

40. The third result pathway focuses on ecological restoration. If the project restores degraded landscapes through assisted natural regeneration, biological soil moisture management, and agroforestry, then the natural resource base, vegetation, water retention, and soil fertility, will be strengthened. Because healthy ecosystems act as natural buffers against climate shocks, these nature-based measures directly contribute to long-term resilience. Success depends on these nature-based solutions rather than physical engineering, ensuring a minimal environmental risk profile. To this end the project management unit will set clear conditions and clauses to ensure that interventions will be implemented as intended, and duly considering the GCF-SAP ESS requirements and the exclusion list presented under section D3 of this proposal (and the ESAP).

41. Finally, the project introduces inclusive livelihood interventions. If vulnerable groups, particularly women and youth, receive skills training and support for low-impact, climate-resilient enterprises (such as apiculture and poultry), then their adaptive capacity will be enhanced and their dependency on climate-sensitive subsistence practices reduced. This approach assumes that local market systems are engaged, while addressing structural barriers like limited financial literacy and restrictive gender norms through targeted capacity building.

42. The four components work together as an integrated system. Component 1 provides the governance foundation, while Components 2 through 4 deliver technical system upgrades, ecosystem services, and diversified livelihoods. This layered structure creates internal feedback loops, enabling adaptive learning and aligning local actions with national policy. The results framework is fully aligned with GCF impact areas, ensuring that low-risk, high-impact interventions lead to measurable outcomes.

In sum, the Theory of Change illustrates how bundled investments, anchored in national policy and driven by local leadership, foster resilient and low-emission development. By replacing construction-heavy activities with technical modernization and nature-based solutions, the project logic remains robustly within the Category C framework. Assumptions, risks, and barriers have been integrated to enhance the coherence and transparency of the project design.

43. The proposed GCF-financed project, estimated at USD 29,997,050.01, will trigger a paradigm shift towards low-emission, climate-resilient development pathways in 15 new climate-prone kebeles (localities) within seven woredas in five regional states and one city administration.

#	Region	Woreda
1	Amhara	Tenta
2	Dire Dawa City Administration	Wahil Cluster
3	Harari	Erer
4	Oromia	Adama
5	Oromia	Aleltu
6	Sidama	Lok Abeya
7	Tigray	Raya Azebo

44. Focusing on integrating water, agriculture and natural resource management approach, this project will build on the Adaptation Fund financed ‘Climate Smart Integrated Rural Development project’ to replicate and scale the achieved results. The AF project was implemented in adjacent kebeles within the same project woredas.

45. The AF funded initiative underscored the transformative potential of integrated approaches, harmonizing landscape restoration, sustainable agriculture, alternative income generation, and enhanced water access. Key lessons affirm the efficacy of community-driven reforestation in restoring degraded landscapes, promoting efficiency and sustainability. Furthermore, prioritizing business skills training is imperative for the establishment of resilient user groups. Facilitating access to irrigation emerges as a strategic means to amplify agricultural yields and ensure food security whilst extracting pivotal learning experience from the positive impact of adopting solar powered pump technology. This will be based on the identification and community co-led development of priorities with regards to drinking water access and irrigation water use efficiency. To this end the project management unit will set clear conditions and clauses to ensure that interventions will be implemented as intended and duly considering the GCF-SAP ESS requirements and the exclusion list presented under XXX (and the ESAP Annex 12).

46. Regional government commitment is identified as a linchpin for sustained project viability. Engaging through government structures not only fortifies institutional capacity but also instills a sense of ownership, with emphasis on innovative capacity-building approaches. The lessons learned further underscores the pivotal role of economic empowerment in fostering women's decision-making agency and bolstering confidence. Additionally, the

adoption of improved seed varieties and successful grass production, contingent on area closure, are acknowledged as contributors to project success.

47. Despite growing policy commitment to climate resilience in Ethiopia, a combination of institutional, technical, and socio-economic barriers continues to constrain adaptation efforts at the local level. Woreda and kebele institutions often lack the technical capacity, tools, and coordination frameworks to effectively integrate climate risks into development planning and budgeting. Weak climate governance and insufficient access to timely, localized climate data, despite national efforts like the NFCS and CRGE Strategy, limit the ability of rural communities to anticipate, prepare for, and respond to climate hazards. This is further compounded by limited participation of vulnerable groups, including women and marginalized populations, in decision-making processes, which restricts inclusive and equitable climate adaptation.

48. The technological and financial dimensions of vulnerability are also critical. Rural communities face restricted access to water-smart and agroecological technologies, efficient irrigation systems, early warning services, and sustainable land management tools. Even when such technologies are available, affordability and technical know-how remain significant obstacles. On the economic front, inadequate access to credit, savings mechanisms, and resilient market linkages trap households in cycles of poverty and risk. Households, particularly those led by women, lack the capital needed to invest in diversification strategies or recover from repeated climate shocks, limiting the prospects for long-term resilience and adaptation-led growth.

49. Environmental degradation including land erosion, deforestation, and diminishing ecosystem services exacerbates the effects of climate change. With over 80% of Ethiopia's population dependent on climate-sensitive natural resources, the degradation of watersheds and agricultural land has both ecological and socio-economic consequences. These vulnerabilities are further reinforced by gender disparities, as women often have limited access to productive resources, technologies, and financial tools, while bearing the brunt of climate-induced livelihood stress. Recognizing these interconnected barriers, the proposed project responds with an integrated strategy that strengthens institutions, facilitates locally led solution, restores ecosystems, and scales inclusive climate finance.

50. In response to the interlinked barriers described above spanning institutional, technical, financial, gender, and environmental dimensions, the project proposes an integrated and locally grounded set of interventions organized under four mutually reinforcing components. Each component is designed to directly address specific structural constraints while contributing to overarching project outcomes and long-term climate resilience. The activities are embedded within Ethiopia's policy frameworks and are consistent with the Logical Framework (Annex 2a), Timetable (Annex 2b), and Budget (Annex 3), ensuring strategic alignment and operational coherence. The following section provides a detailed narrative of the components, outputs, and key activities, including their rationale, targeted beneficiaries, and cause-effect relationships that link the interventions to measurable results.

51. The project's social baseline establishes that the intervention areas are settled communities and that the project does not target pastoralist populations. The project is implemented in Tenta woreda (Amhara), Wahil Cluster (Dire Dawa City Administration), Erer woreda (Harari), Adama and Aleltu woredas (Oromia), Lok Abeya woreda (Sidama), and Raya Azebo woreda (Tigray). These seven project woredas are located in five regional states and one city administration and do not include Afar or Somali.

52. The project areas are not used as pastoralist grazing areas, water access points, or mobility corridors, including on a seasonal basis. The project interventions are designed for settled communities and will be implemented on

farmers' own plots and on degraded communal lands identified for watershed rehabilitation and restoration, with prior community consultation, agreement, and consent reflected in the screening and safeguards processes.

53. Although the project includes activities related to rangeland management and watershed restoration, these are intended to restore and protect degraded communal lands, improve vegetation cover, and strengthen watershed and land management functions in the target woredas. These activities are therefore part of the project's ecosystem restoration and climate resilience approach and do not indicate the presence of pastoralist corridors or seasonal pastoralist resource-use systems within the project footprint.

54. Accordingly, a separate pastoralist-specific risk assessment is not required for the current project footprint. Site-level screening, consultation, and community engagement will nevertheless continue throughout implementation, and any unforeseen access issues or competing land-use claims that may arise will be addressed through the project's safeguards procedures, consultation processes, and grievance mechanisms.

Description of project components

Component 1: Strengthened Institutional and Community Capacity for Climate Resilience

55. This component aims to enhance the adaptive capacity of local institutions and communities through a locally-led adaptation (LLA) approach. It empowers woreda and kebele-level institutions, including sector offices and Smart Village Committees, to lead participatory, climate-resilient planning. These actions are aligned with Ethiopia's CRGE Strategy and National Adaptation Plan (NAP).

56. The component promotes strategic governance innovations by embedding climate risk mapping and decentralized coordination into routine development planning. Special emphasis is placed on engaging vulnerable groups, particularly women and youth, within planning platforms.

57. The project will facilitate the use of agro-climatic profiling and seasonal forecasts. These technologies will be transferred to local institutions through hands-on training and advisory support.

58. By building capacity to formulate costed, bankable adaptation plans, woredas will be positioned to access and absorb future climate finance, overcoming persistent barriers related to readiness and fiduciary capacity.

59. More than 700 regional and local experts will be trained in environmental and social safeguards, gender-responsive planning, and adaptation coordination. Grievance redress mechanisms (GRMs), in line with what is articulated in the ESAP (Annex 12) will be established to support social accountability.

Component 2: Improved Access to Climate-Resilient Water and Irrigation Services

60. This component focuses on the technical modernization and energy transition of existing water and irrigation systems in drought-prone rural areas. It operationalizes the plans developed under Component 1 by translating strategic priorities into low-impact technical upgrades at the community level. The project will focus on the electro-mechanical retrofitting of 21 established sites (7 potable water and 14 irrigation schemes), addressing water scarcity through renewable energy.

61. The component builds on integrated micro-watershed and Woreda Resilience Plans to prioritize locations for system upgrades. Local sector offices and Smart Village Committees will lead the planning and supervision of technical retrofitting to ensure ownership and alignment with national adaptation priorities.

62. The component introduces appropriate technologies such as solar-powered submersible and surface pumping systems and water-efficient distribution kits (e.g., gated pipes). These technologies are selected for their minimal environmental footprint and are accompanied by community training on operations and maintenance. The

integration of digital water management tools and sensors adds a layer of technological adaptability without requiring new civil works.

63. By deploying a replicable model of solar-based retrofitting for existing domestic and productive water points, the project provides a cost-effective blueprint for national scale-up. It demonstrates how transitioning from fossil-fuel to solar power reduces vulnerability and greenhouse gas emissions simultaneously.

64. Community members will be trained in the maintenance and technical governance of solar assets. Technical institutions (Regional Water Bureaus and TVETs) will be involved in designing training materials for O&M and water safety planning, ensuring the long-term functionality of the energy transition.

65. This will be based on the identification and community co-led development of priorities with regards to drinking water access and irrigation water use efficiency. To this end the project management unit will set clear conditions and clauses to ensure that interventions will be implemented as intended and duly considering the GCF-SAP ESS requirements and the exclusion list presented under Section D3 of this proposal (and the ESAP Annex 12). Moreover, the project assumes existing fuel-based generators have been decommissioned already, as per the requirements of government. Finally sustainability is managed by focusing on efficiency upgrades within existing footprints rather than new, infrastructure construction and civil works.

Component 3: Enhanced Adaptive Agricultural and Land Management Practices

66. Component 3 aims to restore degraded ecosystems and strengthen rural livelihoods by scaling up community-based watershed management and promoting climate-smart agricultural practices. It focuses on integrated landscape restoration and diversified livelihood interventions that benefit vulnerable households.

67. Targeted landscapes have been prioritized through participatory micro-watershed planning. Woreda and kebele authorities will oversee land demarcation and community-managed area closures, ensuring restoration efforts are embedded in local development frameworks.

68. The component showcases climate innovation by introducing Nature-Based Solutions (NbS) and Assisted Natural Regeneration (ANR). Practices include vegetative contouring, mulching, biological barriers, and agroforestry systems with drought-tolerant native species. These non-structural innovations are integrated with community-managed closures to maximize landscape productivity and biodiversity recovery without the earthworks associated with traditional engineering.

69. The restoration of degraded land through low-cost, high-impact nature-based solutions enhances adaptive capacity and generates economic benefits. These models of biological restoration are presented as bankable solutions for future ecosystem-based adaptation (EbA) investments.

70. Through collaboration with TVETs and research institutes, the project will build technical capacity for biological soil moisture management. Farmer groups and watershed user associations will serve as hubs for peer learning in regenerative farming and vegetative stabilization.

71. To this end the project management unit will set clear conditions and clauses to ensure that interventions will be implemented as intended, and duly considering the GCF-SAP ESS requirements and the exclusion list presented under Section D3 of this proposal (and the ESAP).

Component 4: Strengthened Climate-Resilient Livelihoods and Financial Inclusion

72. Component 4 focuses on enabling vulnerable populations—particularly women and youth—to transition to climate-resilient, economically viable livelihoods. It combines diversification with vocational skills development and entrepreneurial support.

73. The component supports the localization of national inclusion strategies through woreda-level targeting and the integration of climate-risk-informed livelihood planning into community platforms.

74. The project promotes green enterprise models based on low-emission technologies. Examples include solar-powered post-harvest processing, apiculture, poultry, and drought-resilient small ruminant production. Value chains are developed with technical support to ensure they reduce environmental pressure while boosting incomes.

75. This component strengthens the enabling environment for climate-resilient livelihoods by providing targeted training in business planning and financial literacy. It demonstrates scalable, low-risk models for climate-resilient micro-enterprise development that require minimal land and water resources.

76. TVET colleges will serve as training hubs, delivering green skills curricula. The project will document lessons learned on inclusive enterprise development and facilitate access to mobile veterinary support services to protect small-stock and poultry assets.

Project outcomes

77. **Outcome 1:** Improved capacity to manage recurrent drought and flood risks through improved adaptation planning and nature-based management of agro-ecological landscapes.

78. **Outcome 2:** Reduced vulnerability of communities to climate change-induced drought through enhanced and secured access to solar-powered potable water supply and solar-powered small-scale irrigation, complemented by integrated watershed management.

79. **Outcome 3:** Increased resilience of agro-ecological landscapes and farming systems through nature-based watershed restoration, land stewardship, and climate-smart agriculture.

80. **Outcome 4:** Strengthened adaptive and economic resilience of women, youth and other vulnerable groups through climate-resilient, market-oriented livelihood diversification, enterprise support and access to finance.

Description of Project Outputs and Activities

Output 1.1: Knowledge management and capacity development systems for climate-resilient planning established

81. This output focuses on building institutional and human resource capacity for climate-resilient planning and implementation through inclusive knowledge management and outreach. Specifically, the project will train 700 Woreda and regional experts on environmental and social standards and gender-responsive planning to ensure robust safeguards, promote inclusivity, strengthen local leadership, climate risk mapping, downscaled forecast interpretation, and gender-responsive budgeting. Training sessions will be supported by the development of tools, guidance manuals, and outreach events-84 communication and outreach events are planned across the target woredas and kebeles.

82. The project will also establish seven local grievance redress mechanisms (GRMs) to enhance accountability and responsiveness. These GRMs will function as platforms for addressing concerns, improving transparency, and ensuring community participation throughout the project lifecycle. This output addresses institutional weakness, gender exclusion, and the knowledge gap barriers by embedding equity-centered planning and grievance systems directly into local governance structures. By fostering a transparent, participatory, and informed implementation process, the output supports broader project ownership, sustainability, and replicability.

Output 1.2: Climate-smart agriculture and integrated land-water-forest plans developed and operationalized

83. This output centers on generating localized, integrated, and climate-resilient development plans that combine agriculture, water, land use, and ecosystem management. Under this output, the project will deliver seven gender-sensitive tools and methodologies tailored to local contexts, enabling more adaptive, efficient, and inclusive planning processes. The output also includes conducting scoping assessments on how climate change will affect future water demand and groundwater resources across the project areas.

84. Further, the project will conduct water balance assessments (supply and demand) in each Woreda to support data-informed water allocation and infrastructure investments. These will culminate in the revision of 14 kebele-level integrated water-agriculture-land-ecosystem and livelihood diversification plans, ensuring alignment with community needs, agroecological realities, and climate trends.

85. The planning tools and assessments created through this output will serve as means to enable smart, risk-informed development choices. They offer decision support systems for rural administrators and local communities-addressing the lack of access to data, integrated planning capacity, and climate-aware governance systems. These activities also feed directly into Components 2 and 3 by informing site selection and land use planning for irrigation schemes, watershed rehabilitation, and livelihood interventions.

Output 2.1: Potable water supply services strengthened in target areas

86. This output addresses acute water scarcity and unsafe water use in the target woredas by strengthening the planning, management, and reliability of existing rural potable water services, including spring-based systems supported with solar pumping where already in place. Support will focus on: (i) water resource and demand assessments and basic hydrogeological screening; (ii) water safety planning and water quality monitoring (e.g., sanitary inspections, basic testing, and corrective actions); (iii) user education on safe water handling and hygiene; and (iv) minor, routine maintenance and repairs of existing systems (e.g., replacement of worn fittings, valves, taps, and small components) to restore functionality and reduce downtime. To maintain mitigation benefits, the project will replace existing diesel-powered pumps with solar-powered submersible systems at established well sites. This avoids new site disturbance while reducing fuel dependency and emissions. No new construction, major rehabilitation, or expansion of water infrastructure will be financed under this output.

87. Institutional sustainability will be strengthened by facilitating the formation and/or strengthening of 21 water user and management committees (including IWUAs where relevant) and providing training on governance, transparent fee setting and collection for routine O&M, complaint handling, inclusive decision-making, and basic technical troubleshooting of solar pumping and handpump components. The project will prioritize equitable service access and participation of women, including women-headed households, and will support practical measures to reduce time burdens on women and girls (e.g., service scheduling, user feedback mechanisms, and targeted outreach). These activities link to Outcome 2 by improving reliability of services, reducing exposure to climate-induced water stress, and supporting health and time savings. Practical, hands-on training for community technicians and Water/Irrigation User Association members on the operation, maintenance, and basic troubleshooting of Solar PV arrays, brushless motor pumps, and digital controllers. Training for 21 Water User Associations on financial management and transparent fee collection systems to fund routine repairs and ensure the financial viability of solar schemes beyond the project lifespan.

Output 2.2: Improved water access for irrigation and livestock use

88. This output strengthens climate-resilient agricultural production by promoting efficient, climate-smart water use practices for smallholders in areas with existing access to water sources. Support will include farmer training,

demonstration, and advisory services on water-saving practices (e.g., drip/sprinkler operation where already available, deficit irrigation, mulching, soil moisture conservation, and irrigation scheduling informed by seasonal forecasts). Activities are designed to be non-structural and focus on improved practices, information, and governance. The project will supply 150 solar-powered surface pump systems to replace fossil-fuel-based pumps in existing small-scale irrigation schemes. No new irrigation infrastructure (e.g., canals, diversion weirs, or new schemes) will be financed under this Category C proposal.

89. To improve efficiency and sustainability, the project will: (i) strengthen climate information services for farmers (forecast interpretation, agro-advisories, and drought alerts) and link these services to farm-level water management decisions; (ii) provide practical guidance on routine O&M for existing solar pumping sets and on-farm distribution equipment; and (iii) support community-level water governance (e.g., transparent water use rules, conflict resolution, and cost-sharing for routine maintenance) through IWUAs and relevant local committees.

90. This output supports household income stabilization and food security by improving the productivity and water-use efficiency of existing farming systems, reducing crop losses during dry spells, and strengthening participatory management arrangements that help households plan and adapt to climate variability.

Component 3: Climate-smart agriculture land water - forest integration

Output 3.1: Climate Smart Agriculture Implemented at the Farm Level

91. This output focuses on building household-level resilience by promoting the adoption of climate-smart agriculture (CSA) technologies and techniques. At least 2,520 farmers will receive training and input support to shift toward drought-resistant crops, intercropping, organic soil fertility management, and agroforestry. These practices will be selected based on local farming systems and climate risks, and supported by climate information services developed under Output 1.3.

92. To ensure continuity and scale-up, the project will strengthen farmer field schools and extension systems, with particular attention to engaging female and youth farmers who face structural barriers to accessing inputs and knowledge. Demonstration plots and digital advisory platforms will also be utilized to support peer learning and informed decision-making. The result is a more diversified, climate-resilient agricultural base that improves productivity, nutrition, and market opportunities-directly addressing livelihood insecurity and environmental degradation barriers.

Output 3.2: Degraded Watersheds Restored and protected through Integrated watershed management approach

93. This output aims to restore degraded landscapes and improve ecosystem functionality through community-based watershed management using nature-based, low-risk measures. Activities will focus on biological and agronomic soil and water conservation practices that do not require civil works, such as vegetative barriers (grass strips/hedgerows), mulching and ground cover, farmer-managed natural regeneration, assisted natural regeneration in communal areas, and targeted planting of native species for slope stabilization. All actions will be guided by the integrated land-use and water plans developed under Output 1.2.

94. Communities will be organized into watershed management groups and trained in climate-resilient practices, including nursery management for native seedlings, community-led planting, protection and maintenance of restored areas, and participatory monitoring of ecosystem health. Women and youth will be actively engaged in planning, implementation, and monitoring roles. These measures will increase ground cover and infiltration,

improve soil fertility, and strengthen ecosystem services that buffer floods and droughts, contributing directly to ecosystem-based adaptation and long-term food and water security.

95. All sub-activities will be screened against the project's ESS Category C exclusion list prior to approval. Any activity requiring construction/civil works, land acquisition, impacts on watercourses, or other excluded items will not be financed under this proposal.

Output 4.1: Income-generating activities for vulnerable groups supported and scaled

96. This output is designed to strengthen the economic resilience of women and other vulnerable groups by supporting their participation in market-oriented, climate-resilient, and locally appropriate livelihood enterprises. It responds to the high climate sensitivity of existing rural livelihoods in the target areas, where households remain heavily exposed to drought, rainfall variability, degraded natural resources, weak market access, and limited livelihood diversification. By promoting more resilient and inclusive enterprise opportunities, the output contributes directly to improved adaptive capacity, more stable household incomes, and reduced reliance on negative coping strategies. The output supports a diversified package of climate-resilient livelihood interventions, including market and value chain analysis, improved access to market information, fruit tree and vegetable production, improved forage development, poultry production, apiculture through cooperatives or established youth groups, improved sheep and goat production, and support to kebele livestock health posts. These interventions are intended to create practical and context-specific livelihood pathways that are better aligned with local climate risks, available natural resources, and emerging market opportunities. They also complement the project's investments in climate-resilient water access, irrigation, watershed restoration, and climate-smart agriculture by linking improved resource access and ecosystem recovery to income-generating opportunities at household and group level.

97. The output goes beyond production support alone by also strengthening the enabling conditions required for vulnerable groups to participate effectively in climate-resilient enterprises. It therefore incorporates activities that improve livelihood awareness, update local livelihood opportunity analysis, strengthen market readiness, and enhance the ability of target groups to engage in more organized, informed, and sustainable enterprise development. In practice, this means supporting not only what beneficiaries produce, but also how they understand available opportunities, connect to markets, organize themselves, and build the practical capacities needed to sustain those activities over time. The output is closely linked to the participatory planning and local analysis supported under Component 1. The livelihood options promoted are informed by local evidence on production systems, the differentiated needs of women and men, climate and water-related constraints, and the revision of integrated water-agriculture-land-ecosystem and livelihood diversification plans with communities. This ensures that livelihood support is not delivered as a generic package, but is adapted to local realities and shaped by community priorities, vulnerability patterns, and market potential.

98. Particular emphasis is placed on the inclusion of women, youth, and other vulnerable groups. The output therefore promotes both individual and group-based pathways for livelihood development, including through cooperatives, youth groups, and community-level institutional arrangements where relevant. It also supports forms of climate innovation by promoting livelihood models that are more resource-efficient, lower-emission, and better aligned with restored ecosystems, improved water access, and sustainable local production systems. Overall, this output provides an integrated livelihood resilience package that combines productive support, enterprise development, market orientation, and local capacity strengthening. In doing so, it helps vulnerable households

move toward more stable, climate-resilient, and market-connected economic opportunities that can be sustained beyond the life of the project.

Description of Project Activities

Output 1.1: Knowledge management and capacity development systems for climate-resilient planning established

Activity 1.1.1: Training in environmental and social standards, gender integration, citizen engagement, and the inclusion of physically disabled and socially vulnerable groups (MOA, MOWE or MOWE)

99. This activity will establish the foundational human and institutional capacities required to implement the project in a climate-responsive, socially inclusive, and legally compliant manner. It will finance the design and delivery of a structured training programme for woreda- and regional-level government staff, frontline technical experts, and selected local stakeholders on: environmental and social standards, gender-responsive planning and implementation, citizen engagement, inclusive participation, and the effective inclusion of persons with disabilities and socially vulnerable groups in project planning, implementation, monitoring, and grievance processes. Training for 700 regional and woreda experts on climate risk mapping, downscaled forecast interpretation, and gender-responsive budgeting. Specialized workshops for Woreda Finance and Economic Cooperation Offices on Climate Budget Tracking and resource mobilization to support the "Exit Strategy". The activity will be implemented as a practical capacity-building package linked directly to the project's locally led solution approach and Theory of Change. The training will equip participating institutions and delivery actors to apply safeguards and inclusion principles when undertaking climate-resilient planning, infrastructure siting, community consultations, beneficiary selection, watershed restoration, livelihood support, and monitoring. In this way, the activity supports the broader project logic that stronger local institutions and more inclusive decision-making processes are necessary preconditions for effective adaptation outcomes in the targeted drought-vulnerable woredas and kebeles.

100. The activity will cover the development/adaptation of training modules and facilitation materials, organization and delivery of training sessions across the seven target woredas, and documentation of participation and learning outcomes. Based on the logical framework and budget, the activity is designed to train 700 woreda and regional experts, with implementation across 7 woredas. The training will be tailored to the mandates of participating institutions and will include practical guidance on integrating social inclusion, gender equality, stakeholder participation, and safeguards compliance into the delivery of Outputs 1.2, 2.1, 2.2, 3.1, 3.2, and 4.1.

101. The activity will be implemented with technical participation from the Ministry of Agriculture (MoA), the Ministry of Water and Energy (MoWE), and the Ministry of Irrigation and Lowlands (MILLD), as well as the relevant regional bureaus, BOFEDs, and woreda sector offices. These institutions will nominate participants, adapt sector-specific training content, support local delivery, and apply the training outcomes during implementation of their respective project activities.

102. The activity will be delivered through a combination of centralized module preparation and decentralized training roll-out. Training sessions will be organized at regional and woreda levels and aligned with the project start-up and early implementation phases so that the trained institutions can immediately apply the knowledge in community engagement, local planning, infrastructure implementation, watershed restoration, livelihood programming, and grievance handling.

Activity 1.1.2: Monitoring compliance with environmental and social standards (MoA, MoWE, MoIL)

103. This activity supports the continuous monitoring of environmental and social (E&S) standards to ensure all interventions remain consistent with the project's Low-Risk (Category C) classification. The function provides cross-cutting assurance that technical retrofitting, nature-based restoration, and livelihood diversification are implemented according to gender-inclusive and socially accountable principles.

104. The activity finances periodic field-based and desk-based compliance reviews across the 21 targeted sites. This includes verifying the functionality of Grievance Redress Mechanisms (GRMs), documenting the inclusion of vulnerable groups in decision-making, and ensuring that biological restoration and solar-pumping upgrades do not result in unintended social or environmental gaps. By institutionalizing regular E&S tracking and corrective action logs, the project strengthens its implementation accountability and ensures that all adaptation and mitigation benefits are delivered in a safe, transparent, and inclusive manner.

Activity 1.1.3: Establishment of grievance redress mechanisms (GRMs) (MoA, MoWE, MOIL)

105. This activity will establish and operationalize seven local-level Grievance Redress Mechanisms (GRMs) to provide accessible, transparent, and trusted channels for community members and stakeholders to raise concerns or seek resolution for project-related issues. Adapted to local languages and social contexts, these GRMs are designed to be inclusive and easily usable by women, youth, and persons with disabilities.

106. The activity finances the design of grievance handling procedures, tracking systems, and training for local committees on the fair and timely resolution of complaints. These mechanisms will cover all project components, including concerns related to solar-pumping retrofits, nature-based landscape restoration, and livelihood support. By ensuring accountability and citizen engagement, the GRM strengthens the locally led Solution approach and maintains the community trust necessary for sustainable, low-risk project delivery. Periodic reviews of complaint records will feed into the project's adaptive management to identify implementation bottlenecks and ensure the Low-Risk (Category C) profile is maintained throughout the project lifecycle.

Activity 1.1.4: Communication and outreach to beneficiaries and stakeholders

107. This activity supports a structured communication and stakeholder outreach program to ensure that beneficiaries and local institutions are fully informed of the project's objectives, technical scope, and participation opportunities. The program is designed to strengthen transparency and public accountability across all targeted woredas, using local languages and accessible formats to reach women, youth, and persons with disabilities.

108. The activity finances the production of multi-media communication materials and the organization of regular information-sharing sessions. Outreach will cover the transition to solar-powered energy for water services, nature-based landscape restoration, and climate-smart livelihood diversification. By fostering a continuous dialogue between implementing agencies and communities, the program reduces the risk of exclusion, ensures the effective use of grievance channels, and builds the long-term trust required for successful locally led solution. Documentation of these engagement efforts will provide critical evidence for the project's Social and Environmental Safeguards (SES) reporting

Output 1.2: Climate-smart agriculture and integrated land-water-forest plans developed and operationalized

Activity 1.2.1: Collate information on agricultural production, management systems, and the specific needs of women and men in the project areas (MoA, MoWE, MoIL)

109. This activity will generate the local evidence base required to inform the design of climate-resilient interventions and technical upgrades in the target woredas. It involves the systematic collection of data on existing

agricultural systems, natural resource management, and water-use patterns, with a specific focus on the differentiated roles and constraints of women and men.

110. The activity finances field-based data collection and community validation to ensure that subsequent solar-powered energy transitions, nature-based restoration, and livelihood diversification are grounded in local realities. By mapping seasonal water demand and identifying barriers to accessing climate-resilient technologies, the project can better target vulnerable groups and ensure that non-structural adaptation investments respond to both climate risk and social inclusion priorities. This analytical foundation strengthens the project's Theory of Change by ensuring that every technical decision, from solar pump sizing to biological gully treatment, is informed by robust, gender-sensitive local data.

Activity 1.2.2: Develop locally appropriate and gender-sensitive tools and methodologies (MoA, MoWE, MOIL)

111. This activity will develop and adapt the tools, methodologies, and planning approaches needed to support climate-resilient, gender-responsive, and locally grounded implementation of the project. Building on the evidence collected under Activity 1.2.1, it will produce practical guidance and methodological tools that can be used by federal, regional, woreda, and kebele-level institutions to identify priorities, assess local conditions, and support the uptake of climate-smart agriculture, watershed rehabilitation, integrated water management, and livelihood diversification measures. The tools and methodologies developed under this activity will be tailored to local agro-ecological conditions, the needs of target communities, and the differentiated roles and constraints of women and men. They are expected to support more consistent and transparent planning across project locations, while also improving the quality of local consultations, prioritization processes, and technical implementation. Depending on the intervention area, these tools may include screening and prioritization tools, participatory planning templates, gender-sensitive assessment formats, and technical guidance for integrated land-water-agriculture-ecosystem planning. This activity is important for translating the project's locally led solution ambition into operational practice. It helps ensure that project planning is not only participatory, but also technically robust, climate-informed, and sensitive to gender and vulnerability dynamics. The resulting tools will also support implementation consistency across project sites and strengthen the ability of local institutions to apply climate-resilient and inclusive planning methods beyond the life of the project.

Activity 1.2.3: Undertake a scoping assessment on the potential influence of climate change on future water demand and develop a comprehensive groundwater management plan (MoWE, MoIL, MoA)

112. This activity will assess how climate change is expected to affect future water demand and water resource pressure in the target areas and will use this analysis to support the preparation of a comprehensive groundwater management plan. The activity is intended to provide a forward-looking climate-risk lens for the project's water-related interventions by going beyond historical climate variability and examining the implications of future rainfall variability, drought, temperature increase, and changing water demand for domestic water supply, irrigation, livestock, and ecosystem functions. The activity will include a scoping assessment of climate-related trends and risks affecting water demand and availability, as well as analysis of groundwater use and management considerations in the target localities. The resulting groundwater management plan will help guide the sustainable design and operation of water supply and irrigation investments under the project, including the sizing, siting, and long-term management of solar-powered water systems. It will also provide an analytical basis for aligning water-related investments with broader resilience planning at woreda and kebele levels. This activity is central to the

project's climate rationale and adaptation logic. It helps demonstrate that the design of water access and irrigation interventions is informed by forward-looking climate risks and resource sustainability considerations, rather than only by current development deficits. It therefore strengthens the climate additionality of the project and supports more resilient and sustainable water governance in the target areas.

Activity 1.2.4: Provide an indicative water balance (supply-demand) in each kebele with consideration of current and future risks (MoWE, MOIL, MoA)

113. The activity will prepare indicative water balance assessments for each target kebele, taking into account both current conditions and future climate-related risks. The purpose is to provide a location-specific understanding of water supply and demand dynamics so that project-supported investments in potable water, irrigation, watershed management, and livelihoods are aligned with local resource availability, competing uses, and emerging climate pressures. The water balance analysis will consider water availability, estimated demand from domestic, agricultural, livestock, and ecosystem uses, and the potential influence of drought, rainfall variability, and future climate stress on both supply and demand. By generating kebele-level indicative water balances, the activity will support more differentiated local planning and help identify where specific interventions are most appropriate, what constraints need to be managed, and how trade-offs between water uses can be addressed. This activity strengthens the project's locally led and risk-informed planning approach by ensuring that local adaptation investments are informed by evidence on actual water-resource conditions in each target kebele. It also responds to the need for more site-specific hazard and vulnerability differentiation in project planning and helps avoid uniform application of interventions across areas with different climate and water profiles.

Activity 1.2.5: Revise integrated water-agriculture-land-ecosystem and livelihood diversification plans with the communities

114. The activity will support the participatory revision of integrated local plans covering water, agriculture, land, ecosystems, and livelihood diversification in the target communities. It is the principal planning activity through which the analytical work generated under Activities 1.2.1 to 1.2.4 will be translated into locally owned, climate-informed, and implementation-oriented planning frameworks for the project areas. It will engage communities, woreda and kebele institutions, sector offices, and local groups in reviewing existing planning frameworks and updating them to reflect climate risks, water-resource realities, ecosystem restoration needs, livelihood vulnerability, and the differentiated priorities of women and men. The revised plans are expected to guide local prioritization and sequencing of investments under the project, including resilient water access, solar-powered irrigation, watershed rehabilitation, climate-smart agriculture, and climate-resilient livelihood support. This will help ensure that project interventions are not implemented as isolated measures, but as part of integrated local resilience strategies. This activity is strongly aligned with the project's Theory of Change and locally led climate action approach. It formalizes participatory planning at community level, strengthens local ownership of adaptation investments, and provides the institutional bridge between upstream climate-risk analysis and downstream delivery of concrete project interventions. It also supports sustainability by embedding project-supported actions in recognized local planning processes and institutional structures.

Output 2.1: Potable water supply services strengthened in target areas

Activity 2.1.1: Detailed technical study, specifications, conditions of contract, and procurement documentation for potable water solar retrofitting (MoWE)

115. Activity 2.1.1: Detailed technical study, specifications, conditions of contract, and procurement documentation for potable water solar retrofitting (MoWE)

116. This activity focuses on replacing existing diesel-powered pumps with solar-powered submersible and surface systems to maximize mitigation benefits. The objective is to ensure that the technical transitions under Output 2.1 are based on sound, procurement-ready specifications for solar-powered retrofitting of established well sites. The activity provides the technical foundation for climate-resilient water access by developing site-specific requirements for electro-mechanical upgrades and solar-array configurations. By focusing exclusively on the conversion and optimization of existing water points, the project avoids new site disturbance and major civil works. This process ensures that solar systems are precisely calibrated to local water demand and existing physical conditions identified during the assessment phase. This activity directly supports the Theory of Change by translating climate-informed planning into immediate, low-risk technical upgrades, bridging the gap between planning and the delivery of reliable, renewable water access for drought-prone communities.

Activity 2.1.2: Retrofitting existing wells and springs via solar power to increase access to potable water (MoWE)

117. Activity 2.1.2: Retrofitting existing wells and springs via solar power to increase access to potable water (MoWE)

118. This activity focuses on the electro-mechanical retrofitting of 21 established potable water well sites through the installation of solar-powered submersible pumping systems. By replacing fossil-fuel-based components with renewable energy technology, the intervention enhances the reliability and climate resilience of existing water services without the need for new water abstraction infrastructure or major civil works. The scope includes the supply and installation of high-efficiency monocrystalline solar packages and brushless three-phase motor pumps specifically calibrated for existing borehole configurations.

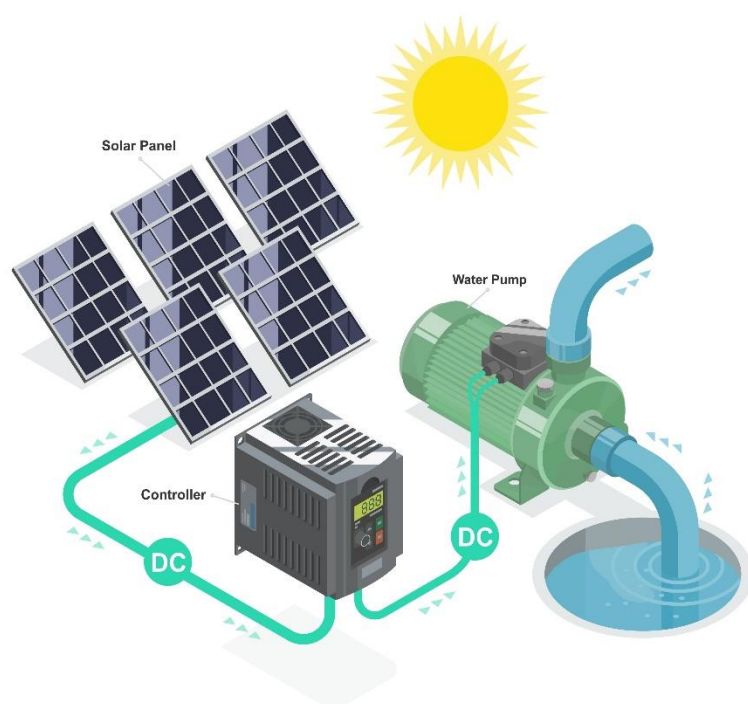
119. These upgrades are designed to improve service continuity in drought-vulnerable communities where rainfall variability and fuel-supply constraints currently limit water security. By optimizing the energy source of 21 existing systems, the project strengthens the adaptation pathway toward reliable water access while delivering significant mitigation benefits. This intervention adheres to a locally led approach by integrating technical solar upgrades with the community-based operation and maintenance (O&M) arrangements established under Component 1, ensuring the long-term sustainability of the technological transition.

Activity 2.1.3: Optimization and safety improvements for existing associated water supply facilities, including service reservoirs, water points, cattle troughs, guard houses, pump houses and related facilities (MoWE)

120. This activity will improve the functionality, safety and climate resilience of existing associated potable water supply facilities linked to the solar-powered water systems. The activity will focus on minor service optimization, water-safety measures, technical protection, digital metering, monitoring sensors, and repair or maintenance of existing surface-level protection structures within existing site footprints. It will cover associated facilities such as service reservoirs, water points, cattle troughs, guard houses, pump houses and related facilities where these are already part of the existing water supply system. The activity will not involve new major construction, expansion of the water system footprint, or works that would significantly alter land, hydrological systems or community access arrangements, thereby maintaining the project's Category C environmental and social risk profile

121. The activity includes the provision of technical protection kits for existing solar arrays, the installation of digital water meters and monitoring sensors to track system performance, and the minor repair of existing surface-level protection structures to prevent contamination. These non-structural enhancements are essential for translating the high-tech pumping systems into a reliable, long-term service. Works are limited to the existing footprints of the 21 sites and are designed to improve system longevity, safety, and efficiency without environmental or social disturbance. This approach strengthens the adaptation objective by maximizing the functionality of existing assets, ensuring that drought-vulnerable communities have sustained, well-managed, and safe access to water.

Figure 5. Retrofitted well with PV solar, water pump and controller



Activity 2.1.4: Service optimization and water safety management (MoWE)

This activity will focus on the service optimization and water safety management required to ensure that the 21 solar-powered systems effectively meet the needs of target communities. This activity emphasizes the digital and governance-based management of water delivery. The scope includes the provision of smart-metering technology and mobile water-quality testing kits to ensure the safe and equitable delivery of water at existing collection points. This approach ensures that the energy transition achieved under Activity 2.1.2 translates into reliable, safe, and well-monitored water access. By focusing on the efficiency and safety of existing service chains, the activity reduces vulnerability to climate-induced water scarcity and strengthens the adaptive capacity of drought-prone households without the environmental risks associated with new physical infrastructure.

Activity 2.1.5: Procurement of spare parts for two years (5% of equipment cost) (MoWE)

123. This activity will finance the procurement and provision of spare parts required to support the operation and maintenance of the potable water systems during the initial implementation and early operational period. The

activity is intended to reduce downtime, improve the reliability of service delivery, and strengthen the sustainability of the solar-powered water infrastructure by ensuring that critical replacement parts are available locally during the first two years of operation. The provision of spare parts is a practical sustainability measure that complements the infrastructure and training investments under Output 2.1. In many rural water systems, service interruptions persist because replacement parts are not available or cannot be procured in time. By including spare parts as part of the project package, the activity helps ensure continuity of service, faster repair response, and stronger operation and maintenance performance at local level. This activity contributes to the project's Theory of Change by supporting the long-term functionality of climate-resilient water infrastructure. Potable water systems can only generate sustained adaptation benefits if they remain operational over time; therefore, the availability of spare parts is a necessary condition for durable resilience outcomes. The activity also works in tandem with the training and local institutional support provided under Activity 2.1.6.

Activity 2.1.6: Provide training to women and men from the association on the operation and maintenance of Solar PVs and hand pumps at the community and Woreda level (MoWE, MoA)

124. This activity will provide practical training on the operation and maintenance of solar photovoltaic systems and hand pumps to women and men drawn from the relevant local associations and institutions at community and woreda level. The objective is to strengthen local technical and managerial capacity to operate, maintain, and sustain the potable water systems established under Output 2.1. The training will cover routine operation, preventive maintenance, basic troubleshooting, maintenance responsibilities, and local management arrangements for the supported water systems. It will target local user groups, associations, community representatives, and woreda-level technical actors involved in the management and support of the schemes. By explicitly training both women and men, the activity supports the project's commitment to inclusion, equitable participation, and gender-responsive local capacity development. This activity is essential to the sustainability of the water infrastructure investments. It ensures that local institutions and users are not only recipients of infrastructure, but are also equipped to keep the systems functioning over time. The activity therefore strengthens local ownership, reduces reliance on external technical support, and enhances the durability of the project's adaptation benefits. It also complements the provision of spare parts under Activity 2.1.5 and supports the broader local governance and operation and maintenance logic of the project.

Output 2.2: Improved Water Access for Irrigation and Livestock Use

Activity 2.2.1: Preparing detailed design and tender documents (MoIL)

125. This activity will finance the preparation of technical specifications and procurement documentation for the solar-powered irrigation upgrades under Output 2.2. The activity focuses on developing the engineering requirements for retrofitting 14 established irrigation schemes with 150 solar-powered surface pump systems.

126. The work includes site-specific technical assessments, equipment specifications for solar arrays and high-efficiency pumps, and procurement-ready documentation for water-saving technologies (such as drip or localized distribution kits) that utilize existing footprints. These specifications will be informed by the water-balance analysis conducted under Output 1.2 to ensure abstraction remains within sustainable limits. This activity translates climate-informed planning into immediate technical transitions, ensuring that the move from diesel to solar energy is technically sound, locally appropriate, and ready for rapid implementation without the environmental risks associated with civil works.

Activity 2.2.2: Technical optimization and solar-powered upgrading (MoIL)

127. This activity focuses on the technical optimization and solar-powered upgrading of the established small-scale irrigation schemes to improve water-use efficiency and climate resilience. Instead of constructing new diversion structures or canals, the intervention finances the installation of 150 solar-powered surface pump systems and high-efficiency water distribution, water volume extraction and ground water physio and chemical measurement kits (such as gated pipes, digital sensors, water meter measurements or localized drip components) within existing irrigated footprints.

128. These upgrades are designed to reduce fossil-fuel dependency and increase the reliability of water delivery over approximately 630 hectares of currently cultivated land. By replacing unreliable diesel pumps with renewable energy and improving on-farm water application, the activity enhances production stability and reduces crop failure risk during dry spells. This approach achieves the project's food security objectives through energy transition and technical modernization rather than new physical construction, ensuring minimal-to-no environmental or social risk.

Activity 2.2.3: NBS to improve water availability for agriculture and livestock (MOIL)

129. This activity focuses on nature-based water retention and soil-moisture enhancement to improve water availability for agriculture and livestock in the target areas. The intervention supports biological landscape restoration (such as vegetative contouring, mulching, and the planting of deep-rooted native species) to increase the water-holding capacity of the soil.

130. These ecosystem-based measures are strategically selected based on local hydrological conditions to capture runoff and reduce seasonal water scarcity. By restoring the natural 'sponge' effect of the watershed, the activity complements the solar-pumping upgrades under Output 2.2 and helps buffer against drought. This approach strengthens the adaptation pathway through non-structural landscape management, improving water availability for productive use while maintaining a minimal-to-no environmental risk profile consistent with Category C.

Activity 2.2.4: Provision and operationalization of solar-systems for established small-scale irrigation schemes (MOWE, MOIL)

131. This activity will provide and operationalize modular solar-powered surface water pumping packages for established small-scale irrigation schemes. The activity will replace or avoid diesel-dependent pumping by using appropriately sized solar PV units, surface pumps, controllers and related electro-mechanical components calibrated to existing water-source capacity, irrigation demand and the findings of the project's water-balance assessments.

132. The activity will be limited to technical fitting, testing, operational verification, handover and readiness support within existing irrigation sites and existing irrigated footprints. It will not finance new large-scale irrigation infrastructure, new command-area expansion, dams, large diversion works, or activities that would significantly alter hydrological systems. Pump operation will be guided by local water availability, irrigation user arrangements, O&M procedures and water-resource monitoring to ensure that the systems remain sustainable and consistent with the project's Category C environmental and social risk profile.

Activity 2.2.5: Maintenance and operation including spare part (MOIL, MOWE)

133. This activity finances the operational support and maintenance readiness required to sustain the 150 solar-powered irrigation systems across the 14 established schemes. The objective is to ensure that the renewable energy upgrades and water-efficiency technologies remain fully functional and resilient during the early operational period, protecting the project's adaptation and mitigation benefits.

134. The intervention includes the procurement and local availability of a strategic inventory of spare parts (such as solar PV controllers, motor gaskets, and high-efficiency nozzles) equivalent to a defined share of the equipment cost. This measure is critical for decentralized systems in rural areas where supply chain gaps often lead to service interruptions. By securing these critical components and linking their management to the Irrigation Water Users Associations (IWUAs), the activity ensures that the transition to solar-powered production delivers sustained functionality. This activity provides an essential bridge between the initial technical upgrade and long-term service reliability, ensuring that the 14 schemes continue to support food security without performance decline

Output 3.1: Climate-smart agriculture implemented at the farm level

Activity 3.1.1: On-farm physical soil and water management activities (MOA)

135. This activity supports agronomic and non-structural soil management to reduce land degradation and improve moisture retention. Instead of physical bunds or terraces—which are excluded under Category C—the intervention facilitates farm-level measures such as contour vegetative strips, mulching, and conservation tillage. These nature-based practices help farmers protect productive land and reduce runoff losses by improving the soil's natural capacity to retain water. Implementation relies on community participation and bio-restoration techniques that avoid significant earthworks, strengthening the ecological resilience of smallholder systems within their existing footprints.

Activity 3.1.2: Biological Stabilization and Soil Fertility Enhancement (MOA)

136. Activity 3.1.2 Biological Stabilization and Soil Fertility Enhancement (MOA)

137. This activity focuses on the establishment of biological barriers and vegetative cover to improve soil infiltration and restore fertility. It moves away from stabilizing 'engineering structures' and instead promotes the use of deep-rooted grasses, legumes, and indigenous shrubs to create natural filters against erosion. These biological measures are selected based on agro-ecological conditions to provide dual benefits: landscape stabilization and the production of green manure or fodder. This integration ensures that land management becomes a regenerative process that improves ecological resilience without the environmental risks of physical construction.

Activity 3.1.3: Fodder development at the farm level (MOA)

138. Activity 3.1.3: Fodder development at the farm level (MOA)

139. This activity supports the establishment of on-farm fodder production to strengthen livestock resilience and reduce grazing pressure on degraded areas. By promoting the cultivation of drought-tolerant fodder species (such as Napier grass or leguminous shrubs) within existing farm boundaries, the project provides a reliable feed source during dry periods. This reduces the need for unsustainable grazing and complements watershed restoration. The activity stabilizes climate-sensitive production systems and enhances the resilience of livestock assets through improved resource management.

Activity 3.1.4: Agroforestry development on-farm (MOA)

140. This activity will promote on-farm agroforestry as a climate-smart land stewardship measure to improve the resilience of smallholder farming systems under increasing drought, heat stress, rainfall variability, soil degradation and declining moisture availability. The activity will support the establishment of locally appropriate, drought-tolerant and preferably indigenous tree and shrub species on farms and around homesteads, including scattered farm trees, boundary planting, multi-storey agroforestry arrangements and integration of useful woody species within existing production landscapes. The agroforestry interventions will be designed to improve farm-

level microclimates, enhance soil fertility, increase biomass availability, reduce erosion, support biodiversity, improve water infiltration and strengthen household resilience to climate shocks. Tree and shrub species will be selected based on agro-ecological suitability, farmer preference, drought tolerance, compatibility with crops and livestock, and their contribution to productive and protective functions. Where appropriate, agroforestry species may provide multiple benefits, including shade, soil stabilization, organic matter, fodder, fuelwood, fruit, bee forage, live fencing, wind protection and diversified household products, without expanding cultivation into sensitive or degraded areas.

Activity 3.1.5: Establish windbreaks/shelter belts and farm boundaries (MOA)

141. This activity supports the development of biological windbreaks and shelterbelts to protect crops and soils from wind-induced moisture loss. Using locally appropriate vegetative configurations, the project establishes living fences that improve microclimatic conditions and enhance production stability. These green boundaries provide protective functions and increase landscape-level vegetative cover. This non-structural intervention strengthens farm-level adaptation by reducing exposure to climatic stressors while providing secondary benefits like biomass and fodder.

Activity 3.1.6: Gully treatment at the farm level (MOA)

142. This activity focuses on biological gully stabilization to control erosion and protect productive land. To remain within Category C, all physical masonry or check-dam structures are replaced with vegetative treatments, such as the planting of fast-growing native grasses and shrubs within gullied areas to slow runoff and trap sediment. By rehabilitating gullies through natural regeneration and bio-fencing, the activity prevents further land loss and improves hydrological stability without the ecological disturbance associated with heavy construction.

Output 3.2. Degraded Watersheds Restored and protected through Integrated watershed management approach

Activity 3.2.1: Pasture management (MOA)

143. This activity will support improved pasture management in the target areas in order to restore degraded grazing lands, strengthen ecosystem resilience, and improve the adaptive capacity of pastoral, agro-pastoral, and mixed farming communities exposed to recurrent drought and land degradation. The activity is intended to improve the condition and productivity of rangelands through better management practices that reduce overuse, support vegetation recovery, and enhance the long-term sustainability of forage resources. The activity will finance and facilitate locally appropriate rangeland management measures, which may include participatory planning of rangeland use, rehabilitation of degraded grazing areas, controlled access arrangements, rotational use or resting practices where appropriate, and support to community-based management structures. These measures will be aligned with the broader integrated watershed management approach of the project and will be informed by the planning and assessment work undertaken under Output 1.2. This activity contributes directly to the project's adaptation and ecosystem-restoration pathways by improving the ecological condition of landscapes that are highly vulnerable to climate stress. Better managed rangelands support livestock resilience, reduce pressure on degraded ecosystems, improve soil cover and water retention, and contribute to the restoration of key ecosystem services. The activity also complements fodder development, watershed restoration, and livelihood diversification efforts under other outputs.

Activity 3.2.2: Area closure for Assisted Natural Regeneration (MoA)

144. This activity supports the restoration of degraded watershed areas through the establishment of community-managed area closures. The objective is to allow highly degraded land to recover from unsustainable pressure by utilizing exclusion and controlled-access arrangements rather than physical engineering. The activity finances the social demarcation of sites and the implementation of assisted natural regeneration (ANR) techniques, such as selective pruning and protection of emerging indigenous seedlings. This ecosystem-based approach restores watershed function and soil stability without the environmental risks associated with earthworks or construction.

Activity 3.2.3: Undertaking area closures for enhanced natural regeneration (MoA)

145. This activity will support the application of biological restoration measures in degraded watershed areas in order to accelerate ecological recovery, improve vegetative cover, stabilize soils, and strengthen the resilience of restored landscapes. It complements the physical restoration and protection measures under Activity 3.2.2 by adding vegetative and regenerative interventions that improve the effectiveness and long-term sustainability of watershed rehabilitation efforts. The activity will promote the establishment of locally appropriate biological measures such as grasses, shrubs, trees, legumes, or other vegetative materials suited to the ecological conditions of the target areas. These measures will be applied in degraded and rehabilitated sites to improve soil stabilization, infiltration, biomass regeneration, and ecosystem productivity. Where relevant, they may also support productive co-benefits such as fodder, fuelwood alternatives, or biodiversity enhancement. This activity strengthens the project's integrated watershed management approach by ensuring that restoration goes beyond structural rehabilitation to include ecological regeneration. It supports the recovery of ecosystem services that are critical for local adaptation, including better water retention, reduced erosion, improved land productivity, and more stable natural resource conditions for vulnerable communities.

Activity 3.2.4: Gully treatment (MOA)

146. This activity focuses on the vegetative stabilization of gullies within degraded landscapes to reduce erosion and restore hydrological function. The activity finances biological treatments, including the use of brush-layering, native grass plugs, and fast-growing indigenous shrubs to slow runoff and trap sediment naturally. By using living materials to anchor the soil, the project rehabilitates gullied areas while maintaining a minimal-to-no environmental risk profile

Activity 3.2.5: Nursery site management and operation (MoA)

147. This activity supports the management of nursery sites to provide the biological capital required for landscape restoration. It ensures a reliable supply of drought-tolerant seedlings and native seeds for agroforestry and watershed rehabilitation. By focusing on the local production of indigenous species, the nursery operations reduce implementation bottlenecks and improve community ownership. This is a low-risk, high-impact intervention that underpins the sustainability of all vegetative measures across the project.

Activity 3.2.6: Afforestation and reforestation (MoA)

148. This activity focuses on restoring tree cover in prioritized degraded landscapes to improve water regulation and reduce land degradation. By planting site-appropriate indigenous species, the activity restores the natural 'sponge' effect of the watershed. This ecosystem-based adaptation measure improves infiltration and microclimatic regulation without the need for high-risk infrastructure, creating a resilient buffer for both the environment and surrounding communities.

Activity 3.2.7: Live fences on area closures (MOA)

149. This activity will support the establishment of live fences around selected area closures in order to protect rehabilitated sites, reinforce local management arrangements, and contribute to ecological restoration. The activity is intended to serve both a protective and restorative function by helping define and secure restored areas while also adding vegetative cover and related ecosystem benefits. The activity will finance and facilitate the establishment of live fencing using appropriate species and locally suitable planting approaches around closed or rehabilitated areas. Live fences will help reduce encroachment and uncontrolled access, support natural regeneration, and strengthen the practical enforceability of area closure arrangements agreed with communities and local institutions. Depending on species choice and local context, live fences may also generate supplementary benefits such as fodder, biomass, or boundary demarcation. This activity contributes to the sustainability of watershed restoration by helping protect investments made under area closure and ecological rehabilitation measures. It strengthens local stewardship of restored sites and supports the broader integrated watershed management logic of the project by combining physical protection with vegetative restoration.

Activity 3.2.8: Pasture and browse seed distribution (MOA)

150. This activity will support the distribution of pasture and browse seeds in order to facilitate rehabilitation of degraded grazing areas, improve fodder availability, and strengthen the resilience of livestock-dependent systems in the target areas. It is intended to complement rangeland management, area closure, and biological restoration measures by supplying the planting materials needed to regenerate forage resources and improve ecosystem productivity. The activity will finance the procurement and distribution of appropriate pasture and browse seed to target communities, groups, or restoration sites, based on local ecological suitability and restoration needs. The distributed seed will be used in rangeland rehabilitation, forage regeneration, area closures, and other restoration measures supported under Output 3.2. This activity will also reinforce farm-level fodder development and broader efforts to reduce pressure on degraded communal grazing lands. This activity supports both adaptation and restoration outcomes by improving the resource base for livestock systems while contributing to landscape recovery. Better pasture and browse availability reduces vulnerability during drought, helps stabilize livestock-dependent livelihoods, and strengthens the ecological recovery of degraded areas.

Activity 3.2.9: Grazing management and native grass reseeding practices (MoA)

151. This activity will support improved grazing management and native grass reseeding practices in order to restore degraded grazing areas, improve forage productivity, and strengthen the adaptive capacity of livestock-dependent communities. The activity is designed to reduce pressure on fragile rangelands and rehabilitated watershed areas while promoting the recovery of locally adapted vegetation and more sustainable grazing systems. The activity will finance and facilitate locally appropriate grazing management measures and reseeding of native grasses in selected areas. This may include support for agreed grazing arrangements, restoration of degraded pasture areas, reseeding with indigenous or locally adapted grasses, and related community-based management measures consistent with the project's integrated watershed approach. The activity will be closely linked to rangeland management, area closure, pasture seed distribution, and fodder development interventions elsewhere in the project. This activity contributes to the project's adaptation logic by improving the ecological resilience of grazing systems and reducing the vulnerability of livestock livelihoods to climate stress. It also helps protect watershed restoration investments by reducing unmanaged grazing pressure and supporting recovery of vegetation in climate-sensitive landscapes.

Output 4.1: Income-generating activities for vulnerable groups supported and scaled

Activity 4.1.1: Conduct Market and value chain analysis (MoA)

152. This activity will support the assessment of market opportunities and value chain conditions for the livelihood options promoted under the project. It will identify viable climate-resilient enterprise opportunities for women, youth, and other vulnerable groups in the target areas and assess the constraints, risks, and enabling factors affecting access to markets, inputs, services, and income generation. The analysis is intended to ensure that livelihood support under the project is grounded in realistic economic opportunities and linked to local demand, market access, and resilience considerations. The activity will generate practical information on product demand, value addition opportunities, local and regional market linkages, production constraints, and the comparative suitability of different livelihood options in the target woredas. It will help identify which enterprises are most promising under local climate conditions and which support measures are needed to improve participation of vulnerable groups. The analysis will also help align project-supported livelihood activities with the planning and vulnerability assessment work undertaken under Output 1.2 and with the broader Theory of Change of the project. This activity contributes to the project's adaptation and locally led resilience pathway by ensuring that livelihood diversification is not treated as a generic development add-on, but as a climate-sensitive and market-informed strategy to reduce vulnerability, improve household resilience, and create more stable income sources in drought-prone contexts.

Activity 4.1.2: Facilitating access to market information (MoA)

153. This activity will support vulnerable households, groups, and local enterprises in accessing timely and relevant market information needed to participate more effectively in market-oriented livelihood activities. The purpose is to reduce one of the key constraints affecting rural producers and vulnerable groups: limited access to information on prices, demand, buyers, quality standards, and market trends. The activity will facilitate practical access to market information through locally appropriate communication and extension channels, linked where possible to existing institutional or cooperative structures. It will focus on the livelihood options supported under Output 4.1 and help target beneficiaries make more informed decisions about production, timing of sales, enterprise selection, and market engagement. The activity is expected to complement the value chain analysis under Activity 4.1.1 and the awareness and local livelihood opportunity analysis under Activities 4.1.9 and 4.1.10. This activity strengthens the project's resilience and sustainability logic by helping vulnerable groups engage more effectively in income-generating activities that are responsive to market conditions. Better access to market information can improve profitability, reduce exposure to market-related risks, and increase the long-term viability of climate-resilient livelihood options.

Activity 4.1.3: Purchasing and adopting lowland/highland fruit trees and promoting vegetable production in vulnerable households (MoA)

154. This activity will support fruit tree and vegetable production as climate-resilient livelihood options for target households and groups in the project areas. The objective is to diversify household production systems, improve nutrition and income opportunities, and strengthen resilience to climate variability through more productive and potentially irrigated horticultural activities. The activity will provide the inputs, technical support, and facilitation needed to establish or improve fruit tree and vegetable production in suitable localities. It will be implemented in synergy with the project's water access and solar-powered irrigation interventions under Component 2, thereby linking productive water use with livelihood diversification. Where feasible, the activity will support women, youth, and vulnerable households to engage in market-oriented horticultural production that can generate both

subsistence and income benefits. This activity contributes to the project's Theory of Change by expanding climate-resilient livelihood opportunities that are less dependent on rain-fed production alone. It supports household adaptation through diversification, improved food and nutrition security, and access to more stable sources of income under changing climate conditions.

Activity 4.1.4: Facilitating and supplying Improved forage seed (MoA)

155. This activity will support the provision and promotion of improved forage seed to strengthen feed availability, livestock productivity, and resilience of mixed farming and livestock-based livelihoods in the target areas. The activity is intended to improve access to better forage resources while reducing pressure on degraded communal grazing systems and enhancing integration between crop, livestock, and land management systems. The activity will finance the supply and distribution of improved forage seed and support its use by target households and groups in appropriate locations. It will complement fodder development and grazing-related restoration activities under Component 3 and help create more reliable feed sources under climate-stressed conditions. Improved forage availability is expected to support more resilient livestock systems, reduce seasonal feed shortages, and improve productivity of small-scale market-oriented livestock enterprises. This activity contributes to the project's adaptation pathway by addressing one of the main constraints affecting rural livelihoods in drought-prone areas: the vulnerability of livestock systems to recurrent feed shortages. It also supports the environmental sustainability of local production systems by reducing excessive grazing pressure on fragile landscapes.

Activity 4.1.5: Promoting poultry production and apiculture through support and delivery of modern beehives for cooperatives or established youth groups (MOA)

156. This activity will support poultry production and apiculture as climate-resilient and accessible livelihood options for women, youth, and vulnerable households in the project areas. The purpose is to promote livelihood activities that can generate regular income, improve household nutrition, and diversify livelihoods with comparatively low land and water requirements, while also creating enterprise opportunities that are compatible with the project's broader ecosystem restoration and climate resilience objectives. The activity will provide the support required to enable selected beneficiaries to engage in or strengthen poultry production, including productive inputs, technical guidance, and facilitation linked to local livelihood opportunities and market conditions. Poultry production is intended as a practical enterprise option for vulnerable households that may have limited access to land or larger livestock assets and can therefore provide an inclusive entry point into market-oriented livelihood development.

157. The activity will also support apiculture through cooperatives or established youth groups, including the provision of modern beehives, related equipment and technical support, and facilitation for enterprise development and market engagement. Apiculture is particularly well suited to the project context because it can generate income with limited land requirements, can be undertaken through organized group structures, and creates strong synergies with the project's watershed restoration, afforestation, agroforestry, and broader ecosystem rehabilitation measures. By linking livelihood development with improved vegetation cover and restored ecosystems, apiculture also contributes to more sustainable and climate-responsive local economic opportunities.

158. Taken together, poultry production and apiculture support the project's resilience objective by reducing reliance on climate-sensitive crop production alone and creating alternative income streams that can help households better cope with drought, rainfall variability, and food insecurity. They also align with the project's

gender and social inclusion focus by creating livelihood opportunities that are accessible to women, youth, and marginalized groups, while strengthening group-based and market-oriented enterprise development in the target areas.

Activity 4.1.6: Access to local breeds of resilient small ruminants (MOA)

159. This activity supports the introduction of improved, climate-resilient sheep and goat breeds to diversify household income. To ensure alignment with Category C and avoid land degradation, the distribution of livestock will be strictly calibrated to the carrying capacity of restored pastures identified in Output 3.2. Small ruminants are selected for their high adaptability and low feed requirements. The intervention strengthens livelihood assets that can withstand climate variability while ensuring that the increased livestock density does not exceed the ecological limits of the local landscape

Activity 4.1.7: Strengthening Local Veterinary Service Delivery (Mobile Support) (MOA)

160. This activity focuses on strengthening local animal health services to protect the productivity of project-supported livestock. To comply with Category C exclusions on physical construction, the project will not finance the building or rehabilitation of health post structures. Instead, it will provide mobile veterinary kits and essential medical supplies to existing kebele-level health workers. This ensures that beneficiaries have access to vaccinations and medication for poultry and small ruminants through a 'service-based' approach that requires no new civil works or land disturbance.

Activity 4.1.8: Building awareness of livelihood options among target households (MOA)

161. This activity will raise awareness among target households regarding the livelihood options supported by the project and the opportunities available for participation in climate-resilient, market-oriented enterprises. The objective is to ensure that beneficiaries understand the range of potential livelihood pathways, their requirements, and their relevance to local climate risks, market opportunities, and household capacities. The activity will involve awareness-building and information-sharing processes at community level to help households make informed choices about participation in livelihood support activities under Output 4.1. It will build on the evidence and participatory planning generated under Component 1 and will serve as a bridge between upstream local planning and downstream enterprise support. Particular emphasis will be placed on ensuring that women, youth, and other vulnerable groups are adequately informed and able to participate in decisions regarding livelihood options. This activity contributes to the project's locally led approach by helping ensure that livelihood support is not imposed in a top-down manner, but is informed by beneficiary awareness, preference, and participation. It also helps reduce the risk of mismatch between household capacity and selected livelihood activities.

Activity 4.1.9: Updating the analysis of local livelihood opportunities for target households (MOA)

162. This activity will update and refine the analysis of local livelihood opportunities for target households in order to ensure that livelihood support remains responsive to local conditions, market dynamics, climate risks, and beneficiary capacities. The activity is intended to complement the broader value chain and market assessments under Activities 4.1.1 and 4.1.2 by translating them into locally specific opportunity analysis for target communities and household groups. The updated analysis will help identify which livelihood options are most suitable in each target area and for which categories of beneficiaries, taking into account local resource conditions, gender and vulnerability considerations, enterprise feasibility, and climate-resilience potential. In doing so, the activity will draw on available national and sub-national evidence, including relevant climate, livelihood, food security, and market information, to strengthen the screening of livelihood options against local climate risks and

changing market conditions. Where appropriate, publicly available analytical sources such as FEWS NET will be used to help cross-check livelihood feasibility, climate sensitivity, and market relevance in different local contexts. This activity will also support a more differentiated understanding of livelihood opportunities across target areas by considering variations in local production systems, household capacities, and exposure to climate stress. This will help ensure that livelihood support packages are better tailored to local realities and not applied uniformly across all project areas. The activity therefore strengthens the project's adaptation logic and local relevance by enabling more context-specific and climate-risk-informed livelihood programming. It also responds to the need to clearly link livelihood interventions to climate risk reduction rather than treating them as generic development activities.

B.2.2. Outcome mapping to GCF results areas and co-benefits categorization

Fill in the GCF results area table below to map each project/program outcome identified in section B.2.1 to the contributing GCF result area(s) by referring to the description of eight result areas provided in the guidance note.

Outcome number	MRA 1 Energy generation and access	MRA 2 Low-emission transport	MRA 3 Building, cities, industries, appliances	MRA 4 Forestry and land use	ARA 1 Most vulnerable people and communities	ARA 2 Health, well-being, food and water security	ARA 3 Infrastructure and built environment	ARA 4 Ecosystems and ecosystem services
Outcome 1	☐	☐	☐	☐	☒	☐	☐	☒
Outcome 2	☒	☐	☐	☐	☒	☒	☐	☐
Outcome 3	☐	☐	☐	☐	☐	☐	☐	☒
Outcome ..	☐	☐	☐	☐	☒	☒	☐	☐

If any co-benefits have been identified in section D.3, fill in the co-benefit table below to map each co-benefit to the corresponding category as defined in the FP guidance note.

Co-benefit number	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1	☒	☐	☐	☐	☐	☐
Co-benefit 2	☐	☒	☐	☒	☐	☐

B.3. Implementation / institutional arrangements (max. 750 words)

174. At the federal level, the Ministry of Finance, as the GCF-Accredited Entity, will lead the overall implementation of the project at the national level. The CRGE Facility, a national climate fund established under the Ministry of Finance, shall coordinate project implementation and ensure the delivery of MoF mandates as stated in the Accreditation Master Agreement and the Funded Activity Agreement of this project. The Ministry of Agriculture, the Ministry of Water and Energy, and the Ministry of Irrigation and Lowlands Development will

execute the project. A national project steering committee, comprised of MoF, the Executing Entities, the NDA, and other relevant stakeholders, will oversee project implementation.

The legal and contractual implementation structure of the project is based on Ethiopia's public institutional system and on the roles assigned under the Accreditation Master Agreement and the Funded Activity Agreement. The Ministry of Finance, acting through the CRGE Facility, will retain overall responsibility as the Accredited Entity for project oversight, fund flow, reporting to the GCF, fiduciary management, and supervision of compliance with the terms of the funded activity. The Ministries of Water and Energy, Agriculture, and Irrigation and Lowlands will serve as the designated federal Executing Entities and will carry out the relevant technical and operational responsibilities assigned to them under the project.

The project implementation team will also draw on the existing gender and environmental and social safeguards capacity of the CRGE Facility. In particular, the existing CRGE Facility Gender and ESS Expert will guide implementation of the Gender Action Plan, support gender-responsive planning and beneficiary targeting, advise on the integration of gender and SEAH-related measures across project activities, coordinate with the Executing Entities and regional/woreda teams, and support monitoring and reporting on sex-disaggregated indicators and GAP implementation progress. No new standalone Gender Expert will be recruited under the GCF budget, as this function already exists within the CRGE Facility and the cost of the expert is already covered through existing CRGE Facility staffing arrangements/another project source. The project budget nevertheless includes resources for GAP implementation activities, including gender-responsive consultations, capacity building, GRM strengthening, stakeholder engagement, monitoring, and livelihood support targeting women, youth and vulnerable groups.

The proposal originally presented these arrangements in summarized form because of the page limitations applicable to the SAP template, but the implementation architecture is based on a structured set of legal, administrative, fiduciary, procurement, safeguards, gender, and downstream implementation arrangements that govern how each part of the project will be executed.

Subsidiary and inter-institutional implementation arrangements

175. The relationship between the Ministry of Finance and each of the designated federal Executing Entities will be formalized through Subsidiary Agreements in the form of Memoranda of Understanding (MoUs). These MoUs will set out the scope of activities assigned to each Executing Entity, the relevant implementation responsibilities, fund flow and reporting obligations, fiduciary and procurement requirements, safeguards compliance, coordination mechanisms, and the conditions applicable to execution of the relevant components and activities. In this way, the MoUs will serve as the operational instruments through which the Ministry of Finance, as Accredited Entity, channels implementation responsibility to the relevant federal institutions while maintaining overall fiduciary and reporting accountability. This is also the same institutional approach that has been followed for earlier Ministry of Finance-led climate finance projects, including FP058 and FP243, where implementation responsibilities were similarly formalized through MoUs serving as subsidiary implementation agreements.

176. Where activities are implemented jointly by more than one federal Executing Entity, the primary coordination arrangement will be through the approved annual work plans, the project governance structure, and the respective MoUs concluded with the Ministry of Finance, rather than through separate stand-alone contracts among the Executing Entities themselves. In practical terms, each Executing Entity will remain responsible for the activities

that fall within its sector mandate, while joint activities will be implemented through coordinated public-sector action, shared planning and reporting, and the steering committee and technical committee arrangements already described in the proposal. If a specific activity requires more detailed administrative coordination between the co-Executing Entities, this may be captured through joint work planning, implementation protocols, or administrative correspondence within government, but the primary legal relationship will remain that established between the Ministry of Finance and each designated Executing Entity.

Regional and woreda implementation arrangements

177. At the regional and woreda levels, implementation will be carried out through the corresponding structures of the federal government system, rather than through separate legal Executing Entities. In Ethiopia's federal structure, the relevant regional bureaus and woreda sector offices function as the institutional counterparts through which federal ministries collaborate and implement activities on the ground. Thus, the Bureau of Finance and Economic Development (BOFED) at regional level and the Woreda Office of Finance at woreda level play a fund-channeling and financial administration role within the government system, while the corresponding regional and woreda sector institutions undertake technical implementation, supervision, local planning, beneficiary engagement, and reporting.

178. These regional and woreda institutions are not separate Executing Entities for purposes of the project. Rather, they act as the decentralized implementation structures through which the designated federal Executing Entities discharge their mandates. Their operational role in the project will therefore be governed through the existing public financial management system, annual work plans, approved budgets, administrative instructions, technical supervision arrangements, reporting requirements, and the broader subsidiary arrangements between the Ministry of Finance and the federal Executing Entities.

Implementation arrangements with regional and woreda institutions

179. Implementation at regional and woreda levels will not generally depend on separate commercial contracts between the federal Executing Entities and regional or woreda public institutions. Instead, the project will operate through Ethiopia's public administrative and budget execution system. BOFED will receive funds from the Ministry of Finance in accordance with the approved annual work plan and budget and will disburse funds to the relevant regional bureaus and to the Woreda Office of Finance in line with the agreed implementation and reporting arrangements. The Woreda Office of Finance will then support financial administration and, where applicable, local procurement and disbursement to the woreda implementing sector offices. These arrangements are public-sector administrative and fiscal arrangements rather than private contractual relationships.

180. The Regional Bureaus of Agriculture, Water and Energy, and Irr Office of Finance will then support financial administration and, where applicable, local procurement and disbursement to the woreda implementing sector offices. These arrangements are public-sector administrative and fiscal arrangements rather than privatization and Lowlands, as well as the corresponding woreda offices, will implement project activities within their mandates and will work in coordination with the federal Executing Entities, the BOFEDs, and the Woreda Offices of Finance. Their responsibilities will be reflected in annual work plans, fund disbursement decisions, reporting obligations, technical guidance, supervision arrangements, and steering committee decisions.

181. At the regional level, the Bureau of Finance Economic Development (BOFED) will coordinate implementation of the project. BOFED will receive project fund directly from the Ministry of Finance in accordance with the project annual work and budget plan and disburse to the Woreda Office of Finance for the

implementation of project activities in the target kebeles. BOFED also disburses fund to the Regional Bureau of Agriculture, Bureau of Water and Energy and Bureau of Irrigation and Lowlands for activities each Bureau directly implement at regional level. A project steering committee, which is comprised of relevant experts from BOFED, the above-mentioned regional executing entities and other stakeholders will oversee the implementation of the project. The regions are responsible for the coordination and leadership of the relevant project components in accordance with the legal mandates bestowed on them. In this regard, the Bureau of Agriculture is responsible to coordinate and ensure the implementation of the crop, livestock-related climate smart watershed, alternative income source and natural resources management related activities of the project. The Bureau of Water and Energy on the other hand is responsible for the execution of clean potable water-related activities. There are regional project steering and technical committees, which are responsible for the overall oversight and technical guidance of the project.

182. At the Woreda level, the Woreda Office of Finance is responsible for the financial management of the project including local procurement of goods, services, and works. The Woreda Office of Agriculture, Water and Irrigation are responsible for the day-to-day implementation of the project activities. A Woreda Steering Committee, which is chaired by the Woreda Administrator oversees the project implementation and renders overall guidance to the implementing sectors. The technical experts, hired at the woreda level, in close collaboration with the community Facilitators at each of the project target kebeles are responsible for the day-to-day implementation of the project in accordance with the approved work plan. They are also responsible to prepare periodic reports.

Contracts with procured parties and third-party service providers

183. For works, goods, and services to be procured under the project, the relevant legal arrangements will take the form of the standard public procurement instruments applicable under Ethiopian law and the project's approved procurement arrangements. These may include works contracts, supply contracts, installation contracts, consulting agreements, service contracts, and other procurement instruments appropriate to the nature of the activity. The responsible public institution, whether at federal, regional, or woreda level as determined by the approved procurement plan and work plan, will enter into the relevant contract with the selected third party.

184. These contracts will govern delivery obligations, technical specifications, performance requirements, payment conditions, reporting obligations, inspection and acceptance procedures, timelines, compliance with applicable law, and remedies for breach or non-performance. Where relevant, procurement and contract documents will also include provisions relating to environmental and social safeguards, codes of conduct, integrity obligations, anti-fraud and anti-corruption requirements, and operation and maintenance obligations. In this way, the contractual arrangements with third parties will provide the legal basis through which infrastructure, equipment, consulting services, training, and other procured inputs are delivered under the project.

Beneficiary-level and downstream implementation arrangements

185. The project does not envisage unrestricted onward transfer or on-granting of GCF proceeds directly to beneficiaries. Instead, support will reach final beneficiaries through publicly implemented activities and through project-financed goods, materials, productive inputs, infrastructure, training, technical assistance, and organized community-based support arrangements. Accordingly, the downstream legal and administrative arrangements with beneficiaries will vary according to the nature of the activity.

186. For infrastructure-related activities, these arrangements may include asset handover protocols, community management arrangements, operation and maintenance agreements, tariff and fee arrangements, and user association arrangements. This is particularly relevant to irrigation and potable water systems, where infrastructure will be handed over for local operation and maintenance through community-based structures such as Irrigation Water Users Associations (IWUAs) and local water management committees in accordance with the applicable legal framework. For livelihood and training activities, downstream arrangements may include beneficiary selection records, participation agreements, training attendance and support records, and cooperative- or group-based implementation arrangements. In the case of selected livelihood-related activities, the project also envisages the use of a revolving grant mechanism at community level. This mechanism is not intended as an on-granting of GCF proceeds to beneficiaries, but rather as a locally managed modality through which project-supported livelihood resources can be used in a revolving manner to extend support to additional eligible beneficiaries over time. In this way, the mechanism is intended to enhance outreach, continuity, and sustainability of livelihood support within the target communities.

187. The use of such downstream arrangements is intended to ensure that project support is properly targeted, documented, and aligned with the specific activity design. It also provides the basis for transparent beneficiary selection, community participation, sustainability of the supported interventions, and the orderly expansion of livelihood benefits to additional eligible community members where revolving grant arrangements are applied.

Eligibility criteria and beneficiaries by activity

188. Beneficiary eligibility and activity selection under the project will be determined according to the nature of the intervention and the project's targeting framework. The target woredas and kebeles have already been identified on the basis of climate vulnerability, drought exposure, poverty, and related selection criteria described in the proposal. Within these localities, the detailed beneficiary selection criteria for the various components and activities of the project will be established through close consultation with the Executing Entities at federal, regional, and woreda levels, as well as with the project's direct beneficiaries at kebele level. This approach is intended to ensure that the criteria are technically sound, context-specific, locally owned, and responsive to the realities of the communities concerned.

189. Across all components and levels of implementation, an important underlying principle of beneficiary selection will be to ensure an appropriate and inclusive balance between men and women beneficiaries. In this context, potable water and irrigation investments will prioritize communities and households facing acute climate-related water stress and vulnerability; watershed and climate-smart agriculture interventions will focus on degraded lands, farmers, and community groups in the selected micro-watersheds; and livelihood support will prioritize women, youth, vulnerable households, cooperatives, and groups participating in climate-resilient livelihood and enterprise activities. These criteria will be applied through the project's participatory planning, validation, and beneficiary selection procedures and will be reflected in the operational arrangements for implementation.

Co-financing arrangements and channeling of co-financing

190. The project's co-financing is provided by the Government of Ethiopia, through the Ministry of Finance, and is formalized in the Letter of Commitment for co-financing of the project. In that letter, the Ministry of Finance, in its capacity as the federal institution responsible for allocating block grant budgets to regional governments, confirms its commitment to provide USD 5 million in co-financing for the project through a block grant allocation

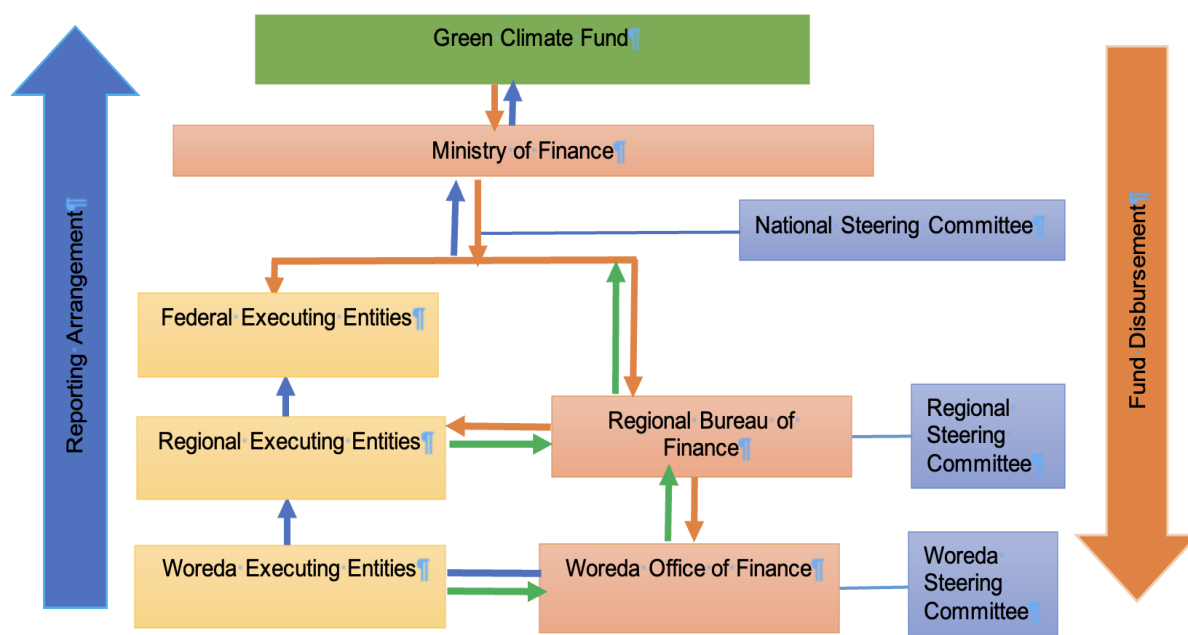
to the regions hosting the project's target woredas. The co-financing is therefore not structured through a separate donor-style co-financing contract with an external third-party co-financier, but through the Government's own fiscal and administrative system. It will support the implementation of activities financed under the project through budgetary and operational contributions of the relevant public institutions.

191. The channeling of this co-financing will follow the existing and established federal government budget transfer and disbursement arrangements from the Ministry of Finance to the regional governments. In practice, the Ministry of Finance will allocate the committed co-financing to the regions hosting the target woredas through the regular block grant system, and the regional governments will in turn make the funds available, in accordance with the established public financial management procedures, for implementation at regional and woreda levels. As with the broader project fund flow, disbursement to the regions and woredas will therefore follow the standard government schedules and systems already used for intergovernmental fiscal transfers. In this structure, the GCF grant finances the direct activity and capital costs of the project, while the Government of Ethiopia's co-financing supports implementation through the public institutional system, including the enabling, supervisory, institutional, and operational functions required for effective delivery and long-term sustainability.

Reporting and fund disbursement arrangement

192. The executing entities at federal, regional and woreda levels are responsible for submitting periodic activity based financial reports. The Federal EEs shall submit quarterly financial reports to the CRGE Facility for activities, which they directly manage and implement. Similarly, the Regional EEs (Bureau of Agriculture, Bureau of Water and Energy, Bureau of Irrigation and Lowlands Development) shall submit quarterly financial report to the BOFED for activities, which they directly manage and implement. BOFED receives financial reports from WOFED of the project target woredas on a quarterly basis for woreda level activities. It will consolidate the regional and woreda financial reports and send to the CRGE Facility. BOFED shall also share copy of the consolidated financial report to the regional EEs and provide status updates during the regional Steering Committee meetings. BOFED will receive copy of a consolidated technical report from the Regional EEs. The CRGE Facility consolidates the financial reports it receives from the BOFEDs, Federal EEs and submit to the GCF annually. The Facility will facilitate an annual external audit of the project and submit the audit report to the GCF. BOFEDs ensure and support timely submission of activity based financial reports by WOFEDs. The CRGE Facility will conduct periodic financial spot-checks and facilitate regular trainings, workshops, review meetings for the project finance officers and project technical staff. The Facility ensures preparation and dissemination of customized and fit for purpose financial and procurement management guidelines to the woreda Finance Officers. It will also ensure that financial management and procurement activities are conducted in accordance with existing government procurement and financial management policies and procedures. The project financial reporting follows the same channel, only in the reverse direction.

Figure 6. Fund disbursement and Reporting Arrangement



193. Following receipt of GCF grant proceeds by the Ministry of Finance, acting through the CRGE Facility, funds for activities that are directly managed and implemented by the federal Executing Entities will be transferred by MoF directly to the relevant federal Executing Entity, including the Ministry of Water and Energy and the Ministry of Irrigation and Lowlands, in accordance with the approved annual workplans, budgets, disbursement schedules and the Subsidiary Agreements/MoUs. For activities implemented at regional, woreda and target kebele levels, MoF will channel funds through the established public financial management system to the relevant BOFEDs, which will in turn channel funds to the WOFEDs and relevant local implementation structures, as reflected in Figure 6 on the fund disbursement and reporting arrangement. The Subsidiary Agreement between MoF and each federal Executing Entity will take the form of an MoU, setting out the assigned activities, fund-flow and reporting obligations, fiduciary and procurement requirements, safeguards responsibilities, coordination arrangements and implementation responsibilities. This arrangement follows the established implementation approach used in previous MoF-led GCF projects, including FP058 and FP243.

Overall Governance Framework

194. The project will be implemented through established federal, regional, and woreda government structures to ensure institutional ownership, alignment with sector mandates, efficient fund flow, administrative continuity, and long term sustainability of results. To strengthen inclusivity and local accountability, the governance framework is designed to combine structured public sector oversight with formal participation of local actors at woreda level, ensuring that community priorities, feedback, and concerns are systematically integrated into implementation and oversight. The overall governance structure provides strategic oversight at national level, coordination and supervision at regional level, and operational planning and implementation at woreda level, while maintaining clear accountability to the Ministry of Finance as the Accredited Entity.

195. At federal level, the Ministry of Finance, through the CRGE Facility, will be responsible for overall project oversight, fiduciary management, fund flow management, reporting to the Adaptation Fund, and coordination of execution. The designated federal Executing Entities are the Ministry of Water and Energy, the Ministry of Agriculture, and the Ministry of Irrigation and Lowlands, each implementing activities within its sector mandate.

These institutions will operate through, and in coordination with, their corresponding regional bureaus and woreda offices, consistent with Ethiopia's decentralized federal administrative structure.

196. The governance framework ensures that decision making is structured, transparent, and consistent across all levels of implementation while incorporating mechanisms for community level voice and accountability. To this end, the project will establish a National Project Steering Committee, Regional Project Steering Committees, and Woreda Project Steering Committees, each with clearly defined roles, composition, and decision making functions.

National Project Steering Committee

197. A National Project Steering Committee (NPSC) will provide overall strategic guidance, policy oversight, inter institutional coordination, and high level decision making. The NPSC will be chaired by the Ministry of Finance / CRGE Facility and will include representatives of the three federal Executing Entities, the Ministry of Agriculture, the Ministry of Water and Energy, and the Ministry of Irrigation and Lowlands, as well as the NDA. Additional federal institutions may participate as required. The NPSC will ensure alignment with national climate, water, agriculture, irrigation, and development priorities and compliance with Adaptation Fund requirements. Its functions will include endorsement of annual work plans and budgets; review of performance against outputs, outcomes, safeguards, gender, fiduciary, and reporting requirements; resolution of high level coordination bottlenecks; endorsement of major adjustments within the approved scope; and guidance on sustainability, institutionalization, and replication.

198. The NPSC will meet at least twice annually. Decisions will be reached primarily by consensus. The CRGE Facility will serve as secretariat, responsible for convening meetings, preparing agendas, documenting decisions, and following up on agreed actions.

Regional Project Steering Committees

199. A Regional Project Steering Committee (RPSC) will be established in each participating region to provide regional level oversight, coordination, and supervision. Each RPSC will be chaired by the relevant Bureau of Finance and Economic Development (BOFED). Membership will include the Regional Bureaus of Agriculture, Water and Energy, and Irrigation and Lowlands, and other relevant regional institutions as required.

200. The RPSC will serve as the primary coordination platform linking federal Executing Entities, regional implementing bureaus, and woreda level structures. It will review implementation progress, safeguards compliance, beneficiary targeting, and reporting quality; coordinate multi sector delivery; consolidate woreda plans and progress; and address technical, procurement, and institutional bottlenecks.

201. Each RPSC will meet at least quarterly. Decisions will be made by consensus, with unresolved issues escalated to the NPSC through the Ministry of Finance / CRGE Facility. Secretariat functions will be performed by the institution designated by the Chair.

Woreda Project Steering Committees

202. A Woreda Project Steering Committee (WPSC) will be established in each target woreda to serve as the primary platform for local level coordination, implementation oversight, operational planning, and problem solving. The WPSC will be chaired by the Woreda Office of Finance, reflecting its role in fund administration and reporting. Membership will include the relevant Woreda Offices of Agriculture, Water, and Irrigation, together with other woreda institutions as required.

203. To strengthen inclusivity, transparency, and downward accountability, formal representation of non governmental local actors will be institutionalized at WPSC level. Smart Village Committees, Irrigation Water Users Associations (IWUAs), women’s cooperatives, and youth groups will participate in WPSC meetings as standing observers, with the right to:

- Raise agenda items related to community priorities and implementation concerns.
- Provide feedback on design, sequencing, and performance of investments.

Document issues and concerns for formal follow up through agreed action points and grievance mechanisms.

204. The WPSC will coordinate implementation across sectors, oversee local planning and scheduling, support beneficiary targeting and prioritization, ensure effective consultation and grievance handling, monitor implementation at kebele and community levels, and compile operational, monitoring, and financial data for upward reporting. It will also support the functionality of local governance structures responsible for operation and maintenance, community management, and beneficiary level oversight.

205. The WPSC will meet at least monthly during active implementation periods and at a minimum quarterly throughout the project lifecycle. Decision making will be based on practical coordination and consensus among woreda institutions, informed by structured input from community representatives. Issues that cannot be resolved at woreda level will be escalated to the Regional Project Steering Committee. The Woreda Office of Finance will serve as secretariat and convener.

While implementation is operationalized through federal, regional, and woreda-level government structures, the formally designated Executing Entities remain the relevant federal ministries identified in the funding proposal. Accordingly, final responsibility and oversight for project implementation, including key decisions taken through the federal, regional, woreda delivery chain, will remain with the respective Executing Entity(ies) in line with their legal mandates. Regional BOFEDs and Woreda Offices of Finance will support coordination, budgeting, fiduciary flow, and local delivery, but they will do so under the authority, supervision, and accountability framework of the federal Executing Entities. This arrangement ensures that decentralized implementation is maintained while final approval authority and responsibility remain with the formally designated Executing Entity(ies).

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding: Total requested GCF funding, calculated as the sum of items (i) to (vi), is presented below.

GCF Financial Instrument	Amount	Currency	Tenor & grace	Pricing
Senior loans	Enter amount	Options	Enter years	Enter %
Subordinated loans	Enter amount	Options	Enter years	Enter %
Equity	Enter amount	Options		Enter % equity return
Guarantees	Enter amount	Options	Enter years	
Reimbursable grants	Enter amount	Options		
Grants	24.99705001	million USD (\$)		

(b) Co-financing information

Name of institution	Financial instrument	Amount	Currency	Tenor & Grace	Pricing	Seniority
Ministry of Finance	Grant	5.00	million USD (\$)	Enter years Enter	Enter %	Options

(c) Total investment Total investment is calculated as requested GCF funding plus co-financing.

Amount	Currency
29.99705001	million USD (\$)

(d) Co-financing ratio: The co-financing ratio is 1:5, equivalent to 20%.

(e) Other financing arrangements for the project/programme: Please explain if any of the financing parties including the AE would benefit from any type of guarantee, for example sovereign guarantee, MIGA guarantee, etc. Information on legal due diligence, including taxes, insurance and related matters, shall be reported in Annex 9a.

Please also include parallel financing associated with this project or programme, referring to the co-financing policy.

C.2. Financing by component

Please provide an estimate of the cost per component, in line with the components described in Section B.2.1 above, and disaggregate by sources of financing as Annex 3. Also, ensure consistency with the Logical Framework, Annex 2a, and Timetable, Annex 2b, of the project/programme.

Component	Output	Indicative cost in USD	GCF financing amount in USD	GCF financial instrument	Co-financing amount	Co-financing financial instrument	Name of institution
Component 1: Capacity building and Knowledge Management	Output 1.1: Knowledge management	1,481,831.68	1,481,831.68	Grants	Enter amount	Choose an item.	Click here to enter text.
Component 1: Capacity building and Knowledge Management	Output 1.2: Updated Climate-smart agriculture and land–water–forest integration plans	707,801	707,801	Grants	Enter amount	Choose an item.	Click here to enter text.

Component 2: Water - Food security	Output 2.1: Potable water supply services strengthen ed in target areas	6,135,357.3 6	5,197,850.0 0	Grants	937,507.36	Grants	Ministry of Finance
Component 2: Water - Food security	Output 2.2: Improved water access for irrigation and livestock use	13,639,996. 73	11,764,950. 00	Grants	1,875,014. 73	Grants	Ministry of Finance
Component 3: Climate smart agriculture: Land - Water - Forest integration	Output 3.1: Climate- smart agriculture implement ed at the farm level	2,516,865.0 5	1,579,357.7 0	Grants	937,507.36	Grants	Ministry of Finance
Component 3: Climate smart agriculture: Land - Water - Forest integration	Output 3.2: Degraded Watershed s Restored and protected through Integrated watershed manageme nt approach	2,767,527.2 4	1,830,019.8 2	Grants	937,507.42	In kind	Ministry of Agriculu re
Component 4: Climate resilient livelihood	Output 4.1: Increased capacity of Women	1,245,335.0 0	1,245,335.0 0	Grants		Choose an item.	Click here to enter text.

diversification for Women and other Vulnerable groups	and other Vulnerable groups to participate in market-oriented enterprises						
Project Management Cost	PMC	1,502,820.39	1,190,357.26	Choose an item.	312,463.13	Choose an item.	Click here to enter text.
Indicative total cost		29,997,502.46	24,997,502.46		5,000,000.00		

This table should match the one presented in the term sheet and be consistent with information presented in other annexes, including the detailed budget plan and implementation timetable.

C.3. Capacity Building and Technology development/transfer

If the project/programme is envisaged to support capacity building and technology development/transfer, please specify the total requested GCF amount for these activities respectively in this section.

C.3.1. Does GCF funding finance Capacity building activities? Amount: USD 909,706.00

C.3.2. Does GCF funding finance Technology development/transfer? Amount: USD 4,785,000.00

C.4. Justification for GCF funding request

Provide information on why GCF is the appropriate donor for the proposed project/programme.

If applicable, inform if other donors at the national and/or international level, including the private sector, have been previously consulted to support this project/programme.

Describe the challenges to access finance, public and private. Also, describe the financial gaps and barriers that the proposed project/programme is expected to fill and address in the absence of any other financing.

In your answer, please consider the risk-sharing structure between the public and private sectors, the barriers to investment and the indebtedness of the recipient, if applicable.

206. Ethiopia is requesting a full grant of USD 25 million from the GCF to replicate and scale up integrated adaptation solutions that have been piloted successfully under the Adaptation Fund-financed "Climate Smart Integrated Rural Development Project." The proposed project is aligned with the strategic direction of GCF's Updated Strategic Plan 2024-2027 (USP2), particularly in advancing Priority Targets T1: Low-emission, climate-resilient development strategies (LTS), T3: Climate Information and Early Warning Systems (CIEWS), and T9: Adaptation and Locally Led Adaptation. The project supports the implementation of Ethiopia's Long-Term Strategy, NDC, and Climate Resilient Green Economy (CRGE) vision by expanding tested adaptation models and unlocking climate finance readiness at the local level.

207. Despite Ethiopia's demonstrated leadership in climate policy and ambition, there remains a significant financing gap of approximately USD 6 billion over the next 15 years to meet its climate resilience and adaptation

goals. As a Least Developed Country (LDC) facing external debt distress, macroeconomic instability, and limited access to concessional finance, Ethiopia lacks the fiscal space to scale up transformational adaptation investments. These constraints are compounded by high inflation (20.8%), foreign currency shortages, and a reduction in Foreign Direct Investment (FDI) due to overlapping climate and geopolitical shocks. These macroeconomic challenges directly impact the country's ability to procure technologies, such as solar irrigation systems, and mobilize co-financing for climate-resilient infrastructure.

208. The project primarily delivers public goods with low or no direct revenue streams including community-based adaptation planning, early warning systems, potable water access, ecosystem restoration, and capacity development. These interventions, while essential to climate resilience, do not generate financial returns that would enable debt servicing or attract private investment. Imposing loan obligations on already resource-constrained local governments and vulnerable communities would be financially unsustainable and socially inequitable.

209. Moreover, Ethiopia is currently under high risk of external debt distress, as recognized by international financial institutions. Introducing additional debt, even concessional, would jeopardize macroeconomic stability and compete with basic service delivery. The grant modality ensures that climate investments proceed without diverting fiscal space from education, health, and food security, while also avoiding repayment risks that could deter public institutions from engaging in long-term adaptation programming. The GCF is uniquely positioned to support this intervention for several reasons:

Mandate for Climate Adaptation in LDCs: GCF's strategic priority to support adaptation in vulnerable countries, particularly under USP2 targets such as T1:LTS, low-emission and climate-resilient development, T3:CIEWS, climate information and early warning systems, and T9:Adaptation and Locally-led adaptation, aligns directly with this proposal. No other climate finance institution offers comparable scope and concessionality tailored to LDC adaptation needs.

Scale and Flexibility: The proposed USD 25 million grant is not available through bilateral or multilateral channels at this level for a single adaptation project in Ethiopia. Many bilateral donors have shifted their focus to humanitarian assistance or broader development goals. Similarly, MDBs tend to prioritize infrastructure loans and require higher counterpart financing or cost recovery, which this project cannot ensure given its target beneficiaries.

De-risking and Enabling Role: GCF's grant will de-risk future investment by strengthening enabling systems-planning, governance, institutions, and local capacities. These foundational investments are often overlooked by other donors but are essential for scaling climate finance. By absorbing early-stage risks, GCF support opens opportunities for downstream engagement by private actors and development banks, especially in replicating solar-powered irrigation and ecosystem-based enterprises.

Government Co-Financing Already Maximized: The Government of Ethiopia has committed USD 5 million in co-financing, equivalent to 20% of total cost, primarily through in-kind contributions and integration with regional plans. Given fiscal constraints, domestic budget allocations to new adaptation programs remain limited. GCF support complements rather than substitutes government funding, while reinforcing national ownership and alignment with the Climate Resilient Green Economy (CRGE) strategy and Ten-Year Development Plan.

Private Sector Involvement is Limited: The project targets underserved, high-risk areas where private sector engagement is minimal due to low purchasing power, weak market infrastructure, and uncertain returns. While

the project promotes financial inclusion and green enterprise development, these models require early-stage de-risking and ecosystem support before private capital can be realistically mobilized. GCF's patient, catalytic finance is ideal for laying this groundwork.

210. Due to the above stated reasons, the requested GCF grant represents the most appropriate, effective, and equitable financial instrument to deliver the project's objectives. It addresses a clear financing gap that no other donor, financial instrument, or domestic source can feasibly fill at the required scale and concessionality. The grant will enable Ethiopia to advance its NDC targets, implement a locally-led and gender-responsive resilience program, and unlock pathways for future climate finance, including from the private sector and MDBs, once enabling systems are in place.

C.5. Exit strategy

Explain how the project/programme will successfully exit once implementation is over, including how results and benefits will continue beyond the project/programme period and its contribution to paradigm shift will be maintained.

Include information pertaining to the longer-term ownership, project/programme exit strategy, operations and maintenance of investments, for example key infrastructure, assets, contractual arrangements. In case of private sector, please describe the GCF's financial exit strategy through Initial Public Offerings, IPOs, trade sales, etc.

Provide information on additional actions to be undertaken by public and private sector or civil society as part of the project/programme to ensure sustainability of the results attained.

211. The project's exit strategy is designed to ensure institutional, financial, and technical sustainability beyond the four-year implementation period by fully embedding interventions within existing government systems and community governance structures. From inception, the project is implemented through federal, regional, and woreda institutions, ensuring ownership and continuity under the CRGE Strategy, National Adaptation Plan, and Ten-Year Development Plan. Upon completion, line ministries and regional bureaus will absorb operational responsibilities, including staff costs and technical oversight, within their regular mandates and budgets.

212. Long-term sustainability of infrastructure investments will be secured through legally recognized Irrigation Water Users Associations (IWUAs) and local water management committees. In line with Proclamation No. 841/2014, irrigation schemes will be formally handed over to IWUAs, which will operate and maintain systems through structured and transparent tariff collection. Water tariffs will be collected both from irrigation users and potable water beneficiaries under an equitable fee framework reflecting operation and maintenance (O&M) costs and users' payment capacity. These revenues will finance routine maintenance, minor repairs, and system management, ensuring continued functionality of solar-powered pumps, irrigation networks, and rural water supply systems.

213. To sustain livelihood outcomes, a revolving grant approach will be introduced for selected income-generating activities. Initial start-up capital provided to beneficiary groups, particularly women and youth, will be partially repaid into community-managed revolving funds, enabling subsequent beneficiaries to access financing. This mechanism strengthens financial discipline, promotes ownership, and ensures continued expansion of climate-resilient enterprises beyond the project period.

214. Capacity sustainability will be reinforced through structured collaboration with TVETs and relevant academic institutions, which will integrate climate-resilient water management, renewable energy maintenance,

and green enterprise development into their curricula. These institutions will provide ongoing technical backstopping, certification, and skills upgrading.

Through institutional mainstreaming, community-managed financing mechanisms, tariff-based O&M systems, revolving livelihood funds, and embedded technical capacity, the project ensures that benefits, systems, and transformative impacts are sustained well beyond GCF financing.

C.6. Financial management/procurement

Describe the project/programme's financial management, including financial accounting standards, disbursement and procurement arrangements. Details are provided in Annex 8 for procurement. Explain how the AE will ensure that its fiduciary standards, based on its accreditation type, are adhered to at all times. Explain the methodology and frequency of the periodic financial reviews, reporting of the project expenditures, including the audit requirements and the frequency of the audit, to ensure that funds are used for the intended purposes and project complies with the covenants, if any.

215. The financial management and procurement for this project will adhere to the public finance management and procurement regulations of the Ethiopian government. GCF project finance will flow through the MOF's CRGE Facility, following the Channel One fund flow arrangement. A dedicated account for the ongoing GCF project has been established within the CRGE Facility at MOF, where GCF funds will be deposited. Following this, the Facility will transfer the required amounts to Federal Executing Entities for project implementation. For regional executing entities, sector bureaus, funds will be regularly transferred to the respective BOFEDs.

216. Project finance will comply with financial regulations and management standards, including auditing by an independent auditor as per the Auditor General requirements of the Government of Ethiopia. The Office of the Federal Auditor General (OFAG) will adopt international standards on auditing and financial reporting, ensuring transparency.

217. Disbursements to executing entities will align with approved quarterly Work Plans, with subsequent disbursements contingent on satisfactory settlement, not less than 75%, of previous advances. The CRGE Facility Finance Officer will verify this before initiating disbursement processing and submitting a letter of transfer request to the National Bank of Ethiopia, where funds disbursed will undergo periodic monitoring through an internal control framework.

218. In terms of procurement management, Executing Entities will prepare detailed annual Project Procurement Plans. For Engineering, Procurement, and Construction (EPC) contracts, international tendering procedures will be followed, ensuring compliance with technical standards and cost-effectiveness. The procurement directive outlines a standardized international and national bidding procedure, emphasizing uniform and competitive processes based on price, quality, delivery time, and procurement feasibility. The directive allows flexibility, including the potential inclusion of short-term operations and maintenance in EPC contracts. The ministry retains the right to terminate EPC tenders if proposals do not meet minimum technical requirements or fail to provide intended value-for-money.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential

Describe the potential of the project/program to contribute to the achievement of the Fund's objectives and result areas. As applicable, describe the envisaged project/program benefits for mitigation and/or adaptation. Provide the intended outcomes for mitigation by elaborating on how the project/program contributes to low-emission sustainable development pathways. Provide the intended outcomes for adaptation by elaborating on how the project/program contributes to increased climate-resilient sustainable development. This should be consistent with section 3 reporting GCF's core indicators in the Logical Framework, Annex 2a.

219. The proposed project aligns with GCF's strategic objectives and result areas, delivering significant contributions across mitigation and adaptation priorities.

220. Enhanced Resilience of Livelihoods: By integrating climate-smart agriculture, diversifying income opportunities, and prioritizing equitable participation, especially for women, the project strengthens rural households' capacity to adapt to climate shocks. These interventions support GCF's aim to build resilience among vulnerable populations and align with SDG 2 by improving agricultural productivity and ensuring food security for over 2,500 households.

221. Strengthened Ecosystem Resilience: The project's focus on restoring 4,500 hectares of degraded landscapes and implementing sustainable watershed management enhances ecosystem services, biodiversity, and natural climate resilience. These actions contribute to SDG 15, life on land, and reduce greenhouse gas emissions, addressing GCF's priorities for ecosystem-based adaptation.

222. Improved Access to Sustainable Water Systems: Investments in solar-powered water infrastructure directly address water scarcity and energy sustainability, providing clean drinking water, SDG 6, and leveraging renewable energy technologies, SDG 7. These efforts contribute to low-carbon development and align with GCF's goals for integrated water and energy solutions.

223. Mitigation through Climate-Resilient Practices: The introduction of integrated water management systems powered by renewable energy benefits 18,000 households and supports SDG 13, climate action. These practices ensure a transition to low-emission development while delivering both economic and environmental benefits.

224. Adaptation through Livelihood Diversification and Job Creation: By generating over 20,000 jobs and establishing alternative income streams, the project strengthens economic resilience and empowers vulnerable populations, including 2,000 women-headed households. This approach enhances food security, reduces poverty, and builds community resilience, directly addressing SDG 2 and GCF's adaptation priorities.

D.2. Paradigm shift potential

Describe the degree to which the proposed activity can catalyze impact beyond a one-off project or program investment.

In terms of rationale, please briefly describe the theory of change and provide information on how it serves to shift the development pathway toward a more low-emissions and/or climate resilient direction, in line with the Fund's goals and objectives. Use a results chain of activities, outputs and outcomes, through which the project/program contributes to the highest expected goal, often referred as goal statement or paradigm shift in the GCF results architecture.

Provide a summary of the potential for scaling up and replication, knowledge sharing and learning, and contribution to the creation of an enabling environment. Describe overall contribution to climate resilient development pathways consistent with relevant national climate change adaptation strategies and plans.

225. The proposed initiative goes beyond singular project investments, aiming to instigate broader climate-smart integrated rural development at the local, national, and regional levels. The theory of change underpinning this initiative envisions a shift in the development pathway towards greater climate resilience and lower emissions. The result-chain encompasses various activities, outputs, and outcomes, ultimately contributing to the overarching goal of creating an environment conducive to sustained climate action and plans.

226. The project seeks to integrate climate-smart approaches into local, national, and regional planning for water, agriculture, forestry, and other land uses. This integration serves as a catalyst for further climate actions beyond the scope of GCF-funded activities. Moreover, the project emphasizes the promotion of alternative income sources, particularly involving women, girls, and youth in land management practices aligned with local development and tenure norms. This approach is anticipated to initiate a social change initiative within the targeted areas, encouraging climate-responsive planning and decision-making in the integrated water, agriculture, and forest sectors.

227. A key aspect of the project's paradigm shift potential lies in its capacity to demonstrate successful climate investments across multiple kebeles. This success is expected to drive social change and influence woreda-level governments and sector agencies, fostering climate-responsive planning in the long term. The project aims to empower regions and woreda-level governments with knowledge to develop comprehensive investment strategies that seamlessly integrate adaptation and mitigation considerations.

228. While replicability hinges on finance mobilization for implementing investments, the project recognizes existing fiscal constraints, including fragility and high indebtedness, limiting the fiscal space available for further investment. Nevertheless, the initiative's focus on knowledge transfer, learning, and capacity building contributes to the creation of an enabling environment for sustainable climate-resilient development pathways, aligning with national climate change adaptation strategies and plans.

D.3. Sustainable development

Describe the wider benefits and priorities of the project/programs in relation to the Sustainable Development Goals and provide an estimation of the potential in terms of environmental co-benefits, social co-benefits, economic co-benefits, and gender-sensitive development benefits.

Provide a summary of the gender assessment and project/program-level gender action plan, Annex 4, that is aligned with the objectives of GCF's Gender Policy.

229. The proposed project delivers significant social, environmental, and economic benefits, aligning with GCF's sustainable development objectives and multiple Sustainable Development Goals (SDGs). It addresses pressing needs in climate resilience, health, and risk management while incorporating gender-sensitive and inclusive approaches to ensure long-term sustainability.

230. Aligned with SDG 6, water availability and sustainable management, the project will improve access to safe water for approximately 96,000 individuals, with a particular focus on women, girls, and youth. By enhancing water security, it reduces the burden of water collection on women and girls, freeing them to pursue education and workforce participation. This intervention fosters economic empowerment and strengthens the social fabric of communities by improving health and reducing time poverty, thereby enhancing overall community resilience.

231. In support of SDG 15, life on land, and SDG 13, climate action approximately 96,000 individuals, with a particular focus on women, girls, and youth. By enhancing water security, it reduces the burden of water collection on women and girls, freeing them to pursue education and workforce participation. This intervention fosters economic empowerment and strengthens the social fabric of communities by improving health and reducing time poverty, thereby enhancing overall community resilience.

231. In support of SDG 15, life on land, and SDG 13, climate action, the project emphasizes the restoration of degraded rangeland and pastureland, contributing to carbon storage, biodiversity conservation, and climate stabilization. These nature-based solutions address climate-induced hazards such as floods, droughts, erosion, and landslides, mitigating the impacts of extreme climate events. By integrating ecosystem restoration into local practices, the project enhances environmental resilience and delivers long-term benefits to both ecosystems and local livelihoods.

232. A pivotal component of the project is the creation of over 20,000 direct and indirect green jobs, aligned with the GCF's focus on economic co-benefits. These employment opportunities, tied to land restoration and sustainable practices, bolster adaptive capacities and provide communities with new income streams. This dual approach not only addresses economic vulnerabilities but also contributes to adaptive strategies in the face of climate uncertainty.

233. The project incorporates a gender-sensitive framework that ensures equitable access to and management of natural resources such as forests, trees, and water catchments. By empowering women and marginalized groups to diversify their income sources, the project fosters gender equity and fair benefit distribution, aligning with the GCF's Gender Policy and SDGs 5, gender equality, and 10, reduced inequalities. This inclusive approach promotes long-term sustainability by embedding social equity into environmental and economic initiatives.

234. With regards to Environmental and Social Safeguard requirements the project has developed the following exclusion list of ineligible activities under the proposed project:

- a) Activities requiring construction/civil works.
- b) Activities that involve land acquisition.
- c) Activities that have economic or social implication on the land of communities, particularly if due process has not been conducted and if Free and Prior Informed Consent (FPIC) is not obtained.
- d) Activities that are on land that is traditionally owned or used by rural communities.
- e) Activities that have impact on watercourses, and surface water and/or groundwater resources.
- f) Activities that convert or degrade "habitat".
- g) Activities that have impact on biodiversity.
- h) Activities that 'pollute' and generate solid waste.
- i) Activities that alter or damage cultural heritage.

Overall, activities are only eligible if they have minimal or no adverse environmental and social impacts.

235. The Ministry of Finance Safeguards officer will be responsible to screen that all activities undertaken in the context of this project do not include ineligible activities. Moreover, subcontractors and other partnering entities will sign binding documents that explicitly confirm that they will not undertake activities in the exclusion list of ineligible activities.

D.4. Needs of recipient

Describe the scale and intensity of vulnerability of the country and beneficiary groups, and elaborate how the project/program addresses the issue, for example the level of exposure to climate risks for beneficiary country and groups, overall income level, etc.

Describe how the project/program addresses the following needs: economic and social development level of the country and the affected population; absence of alternative sources of financing, for example fiscal or balance of payment gap that prevents from addressing the needs of the country and lack of depth and history in the local capital market; and need for strengthening institutions and implementation capacity.

236. Ethiopia grapples with a complex set of challenges, making it one of the most climate-vulnerable countries globally. These challenges - climate fragility, extreme weather events, high indebtedness, and constrained financial resources-significantly hinder the nation's ability to implement critical climate adaptation, infrastructure development, and poverty alleviation measures. The proposed project seeks to address these pressing needs and catalyse transformative change, directly aligning with the GCF's focus on supporting vulnerable countries in their climate resilience journey.

237. Ethiopia's heightened exposure to climate risks, including frequent and severe droughts and floods, exacerbates its socioeconomic vulnerabilities. These climate extremes disrupt agricultural productivity, degrade water resources, and weaken community resilience, highlighting the urgent need for adaptation measures. Compounding these challenges is Ethiopia's financial constraint, underpinned by a low tax-to-GDP ratio, averaging just 10% from 2017 to 2020, and limited capacity to mobilize domestic resources for climate adaptation. The country's substantial public debt, equating to approximately 52% of GDP as of December 2022-with over half being external debt-further restricts fiscal space for critical investments in sustainable development.

238. In this context, GCF support is not just a financial necessity but a strategic imperative. By addressing Ethiopia's financial constraints and institutional capacity gaps, the proposed project will enable the country to implement climate-resilient initiatives that mitigate the impacts of climate risks on vulnerable communities. These interventions are vital to breaking the cycle of climate vulnerability and economic fragility, providing Ethiopia with the tools and resources needed to safeguard livelihoods and ecosystems.

239. The project also aligns with GCF's mandate to foster low-emission, climate-resilient development pathways. By providing targeted financing, the GCF can help Ethiopia overcome its fiscal limitations and invest in transformative climate actions, such as sustainable water management, ecosystem restoration, and renewable energy solutions. These interventions are designed to strengthen Ethiopia's adaptive capacity while addressing systemic barriers to resilience.

240. Moreover, the project promotes long-term institutional strengthening, empowering Ethiopia to integrate climate adaptation and mitigation into its development plans. This comprehensive approach ensures that the benefits of GCF support extend beyond immediate project outcomes, creating an enabling environment for sustainable development and climate resilience.

D.5. Country ownership

241. The proposed project is intricately woven into Ethiopia's overarching climate and development policy framework, strategically aligning with key national priorities. Rooted in the Ethiopian National Adaptation Plan (2019), the project seeks to amplify ongoing climate change mitigation and adaptation efforts within the country.

It operates synergistically with Ethiopia's Long Term Low Emissions Development strategy (2023), the Climate Resilient Green Economy (CRGE) strategy (2011), and the Ten-Year Development Plan (2020). By incorporating sectoral climate resilience strategies and regional/municipal adaptation plans, the project ensures a comprehensive and integrated response to climate challenges.

242. Central to its design is the alignment with Ethiopia's Nationally Determined Contributions (NDC), reflecting the country's commitment to global climate action. The project's resonance with national climate strategies and sectoral policies underscores its significance in addressing Ethiopia's specific climate-related vulnerabilities and aspirations for sustainable development.

243. A key hallmark of the project is its unwavering commitment to country ownership, a principle championed by the Green Climate Fund (GCF). The project actively engages with Ethiopia's National Designated Authority (NDA), involving them in the funding proposal design and obtaining their no-objection letter(s). This collaboration ensures that the project is firmly rooted in Ethiopia's climate and development priorities, gaining the explicit endorsement of the national authority responsible for climate finance.

244. The Accredited Entity (AE) and Executing Entity (EE) at the helm of project implementation boast a robust track record implementing GCF, Adaptation Fund and similar climate financing entities initiatives. Their extensive experience in similar activities positions them as capable stewards of the project. This experience encompasses successful management of projects with comparable funding costs, demonstrating their expertise in navigating the complexities of climate-related initiatives.

245. Crucially, the project selection process was meticulously executed, incorporating broad-based stakeholder consultations. These consultations, which included a diversity of perspectives and considered gender and Environmental and Social Safeguards (ESS), played a pivotal role in shaping the project. The NDA's approval process, culminating in the issuance of a no-objection letter, signifies a rigorous evaluation and endorsement of the project by the national authority.

246. Furthermore, the project demonstrates a forward-looking commitment to ongoing multi-stakeholder engagement. The envisaged consultations and engagement plan reflect a dedication to inclusivity, ensuring that diverse stakeholder views continue to inform and enrich project development. This sustained dialogue aligns seamlessly with the principles of country ownership outlined by the GCF, fostering a sense of shared responsibility and collaboration in the pursuit of climate resilience and sustainable development in Ethiopia.

D.6. Efficiency and effectiveness

247. The proposed project demonstrates a high level of efficiency and effectiveness by integrating low-emission and climate-resilient interventions within a holistic, locally led solution framework. It delivers a strong value-for-money proposition by targeting highly vulnerable communities with tailored investments in institutional capacity, climate-resilient infrastructure, sustainable livelihoods, and ecosystem restoration. The financial structure, comprising USD 25 million GCF grant and USD 5 million in government co-financing-ensures the delivery of public goods and de-risking of transformative adaptation investments that cannot be financed through commercial means. Mitigation benefits are achieved through renewable energy-powered systems and land-based emission reductions. The project also applies best-available technologies and inclusive implementation models to maximize adaptation impact per dollar spent, positioning Ethiopia for scalable and replicable climate finance. The combination of economic viability, catalytic potential, and institutional sustainability ensures that GCF funding achieves maximum leverage and long-term resilience outcomes.

D.6.1. Estimated cost per t CO₂ eq, defined as total investment cost / expected lifetime emission reductions (Mitigation and Cross-cutting)

248. While the project's primary objective is climate adaptation, it is designed to generate meaningful mitigation benefits through activities such as solar-powered irrigation and water systems, agroforestry, reforestation, and other ecosystem-based adaptation practices. According to the estimates presented in Annex 22 and Section A.7.1 of the proposal, the project is expected to result in cumulative greenhouse gas (GHG) emission reductions of approximately 32,293 tCO₂eq over its 20-year lifetime.

249. Given the project's primary focus on adaptation, 15% of the total project financing and 15% of the requested GCF amount have been attributed to the project's mitigation benefits for the purpose of estimating the cost per tonne of CO₂ equivalent reduced. On this basis, the mitigation-attributable share of the total project financing is approximately USD 4.50 million, resulting in an estimated total project cost of USD 139.34 per tCO₂eq. The mitigation-attributable share of the requested GCF amount is approximately USD 3.75 million, resulting in an estimated GCF cost of USD 116.11 per tCO₂eq.

250. These estimates reflect the adaptation-focused nature of the project, under which mitigation outcomes are important additional benefits rather than the primary project deliverables. The mitigation benefits remain significant in the context of Ethiopia's Nationally Determined Contributions (NDCs), particularly because of the project's focus on renewable energy, ecosystem restoration, agroforestry, reforestation, and sustainable land-use management practices. These measures contribute to reduced emissions, enhanced carbon sequestration, ecosystem regeneration, and long-term environmental sustainability.

Item	Amount
(a) Total project financing	USD 29,997,052.01
(b) Requested GCF amount	USD 24,997,052.01
(c) Expected lifetime emission reductions	32,293 tCO ₂ eq
Mitigation-attributable share of total project financing, 15% of a	USD 4,499,557.80
Mitigation-attributable share of requested GCF amount, 15% of b	USD 3,749,557.80
(d) Estimated cost per tCO ₂ eq, $d = 15\% \times a / c$	USD 139.34/tCO ₂ eq
(e) Estimated GCF cost per tCO ₂ eq, $e = 15\% \times b / c$	USD 116.11/tCO ₂ eq

D.6.2. Expected volume of finance to be leveraged by the proposed project/program and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation and Cross-cutting)

251. The proposed project seeks a total of USD 25 million in GCF grant financing to deliver transformative adaptation and mitigation benefits in highly vulnerable rural regions of Ethiopia. The project is complemented by an estimated USD 5 million in co-financing from the Government of Ethiopia, as outlined in Section C.2 and Annex 3. This co-financing will be delivered through a combination of direct public investments, in-kind contributions, and operational support provided by federal, regional, and woreda-level institutions. The government's co-financing is expected to cover costs related to personnel and administrative support from sector bureaus and woreda offices; contributions to infrastructure development, for example land, logistics and supervision; institutional support for training centers, extension services, and technical coordination; and maintenance and operational support for climate-resilient assets established under the project.

252. This public co-financing reflects a strong national commitment to locally-led adaptation, institutional strengthening, and long-term sustainability of climate-resilient infrastructure and ecosystem services. It also reinforces national ownership and alignment with Ethiopia's NDC2.0, the Climate-Resilient Green Economy (CRGE) Strategy and the National Adaptation Plan (NAP). While the project does not include direct private sector financing during the implementation period, given its focus on foundational adaptation systems and public goods, it is structured to catalyze downstream private and community-level investments. This is achieved by enhancing access to climate-resilient water and energy systems that reduce investment risks; building capacity among cooperatives, women's groups, and youth enterprises to engage in climate-smart value chains; and strengthening woreda-level institutions to prepare and manage adaptation finance pipelines in the future.

253. In this way, the GCF investment serves as a first-mover catalyst enabling policy, institutional, and infrastructure conditions that will unlock further public and private resources over time, especially in the areas of green livelihoods, decentralized energy, and ecosystem-based enterprises. The project will leverage USD 5 million in confirmed government co-financing, with potential for future mobilization of private finance through improved investment readiness and institutional capacity built during implementation.

Item	Amount / Ratio
(f) Total finance leveraged	USD 5,000,000
(g) Public source finance leveraged	USD 5,000,000
(h) Private source finance leveraged	USD 0
(i) Total leverage ratio, $i = f / b$	0.20
(j) Public source leverage ratio, $j = g / b$	0.20
(k) Private source leverage ratio, $k = h / b$	0

D.6.3. Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objective(s), including addressing existing bottlenecks and/or barriers; providing the minimum concessionally; and without crowding out private and other public investment. (max. 500 words)

254. The proposed financial structure, comprising a USD 25 million grant from the Green Climate Fund and USD 5 million in co-financing from the Government of Ethiopia, is both adequate and appropriate to achieve the project's objectives of building climate resilience among highly vulnerable rural communities in Ethiopia. The blended structure ensures the delivery of essential public goods such as decentralized climate-resilient water infrastructure, ecosystem-based adaptation, and inclusive livelihood systems, which are not viable under market-based or debt-financing models due to their low revenue-generating potential and high up-front capital costs.

255. The USD 5 million government co-financing, reflected in Section C and Annex 3, demonstrates strong country ownership and political commitment. It covers staff costs, logistical support, office facilities, and other public sector operational contributions. This co-financing ensures that the GCF grant is used efficiently and directed toward catalytic interventions such as infrastructure construction, technology deployment, and livelihood support, particularly for women and marginalized groups. It also lays the foundation for long-term institutional sustainability and mainstreaming of climate resilience into public planning systems.

256. The full grant-based support from GCF is justified by the incremental costs and high climate risk profile associated with the proposed interventions. Rural communities in the project target areas face multiple financial and non-financial barriers, including inadequate access to credit, weak infrastructure, low technical capacity, and

exclusion from commercial financial services. These conditions preclude the use of loans or equity instruments and warrant grant financing to de-risk investments in public goods and to crowd-in future adaptation finance readiness.

257. The financial structure reflects the principle of minimum concessionality. GCF resources are targeted to finance activities that would not otherwise occur under normal market conditions, particularly under Components 1-3, governance capacity, climate-resilient infrastructure, and ecosystem restoration. The project does not crowd out commercial or public financing; instead, it addresses a clear financing gap, enabling climate-vulnerable households and institutions to initiate adaptation actions that can later be scaled or replicated with other sources of finance.

258. The primary beneficiaries of concessionality are smallholder farmers, women-headed households, and community-based institutions groups that are structurally excluded from mainstream finance. The project bridges this exclusion by delivering capacity, infrastructure, and climate-smart services, while building institutional systems that can absorb and manage additional finance in the future. The financial structure strikes the right balance between GCF grant support and domestic co-financing, ensures effective and efficient use of resources, supports national climate strategies, and enables transformational change in Ethiopia's climate resilience landscape.

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260. The full grant-based support from GCF is justified by the incremental costs and high climate risk profile associated with the proposed interventions. Rural communities in the project target areas face multiple financial and non-financial barriers including inadequate access to credit, weak infrastructure, low technical capacity, and exclusion from commercial financial services. These conditions preclude the use of loans or equity instruments and warrant grant financing to de-risk investments in public goods and to crowd-in future adaptation finance readiness. The financial structure reflects the principle of minimum concessionality. GCF resources are targeted to finance activities that would not otherwise occur under normal market conditions, particularly under Components 1-3, governance capacity, climate-resilient infrastructure, and ecosystem restoration. The project does not crowd out commercial or public financing; instead, it addresses a clear financing gap, enabling climate-

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E. ANNEXES

E.1. Mandatory annexes

- **Annex 1:** NDA No-objection Letter(s) (Template)
- **Annex 2:** Pre-feasibility or feasibility study (Guidance)
- **Annex 2a:** Logical Framework (Template)
- **Annex 2b:** Timetable (Template)
- **Annex 3:** Budget plan that provides breakdown by type of expense including AE fees (Template)
- **Annex 4:** Gender assessment and action plan (Template)
- **Annex 5:** Co-financing commitment letter if applicable (Template)
- **Annex 6:** Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule
- **Annex 7:** Risk assessment and management (Template)
- **Annex 8:** Procurement plan model (Template)
- **Annex 9a:** Legal Due Diligence, including regulation, taxation and insurance (Template)
- **Annex 9b:** Legal Opinion / Certificate of Internal Approvals (Template)

E.2. Other annexes to be submitted when applicable/requested

- **Annex 10:** Economic and/or financial analysis (Guidance), mandatory for private-sector proposals
- **Annex 11:** Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- **Annex 12:** Environmental and Social Action Plan (ESAP) (Template)
- **Annex 13:** Operations manual for EDA projects (Guidance)
- **Annex 14:** Assessment of GHG emission reductions and their monitoring and reporting, for mitigation and cross-cutting projects
- **Annex xx:** Other references
 - Theory of Change diagram