



GREEN
CLIMATE
FUND



Funding Proposal

Version 1.1

The Green Climate Fund (GCF) is seeking high-quality funding proposals.

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Project/Programme Title: Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities

Country/Region: Ethiopia

Accredited Entity: Ministry of Finance and Economic Cooperation (MOFEC)

Date of Submission:

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Note to accredited entities on the use of the funding proposal template

- Sections **A, B, D, E** and **H** of the funding proposal require detailed inputs from the accredited entity. For all other sections, including the Appraisal Summary in section F, accredited entities have discretion in how they wish to present the information. Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other project documents such as project appraisal document.
- The total number of pages for the funding proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

| A.1. Brief Project/Programme Information | | |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| A.1.1. Project / programme title | Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities | |
| A.1.2. Project or programme | Project | |
| A.1.3. Country (ies) / region | Ethiopia | |
| A.1.4. National designated authority (ies) | Ministry of Environment, Forest and Climate Change (MEFCC) | |
| A.1.5. Accredited entity | Ministry of Finance and Economic Cooperation (MoFEC) | |
| A.1.5.a. Access modality | <input checked="" type="checkbox"/> Direct <input type="checkbox"/> International | |
| A.1.6. Executing entity / beneficiary | Executing Entity: MoANR, MoWIE Beneficiary: Drought-affected & vulnerable communities; public institutions at the national, Woreda (District) and Kebele (Sub-District) levels | |
| A.1.7. Project size category (Total investment, million USD) | <input type="checkbox"/> Micro (10) <input checked="" type="checkbox"/> Small (10<x 50) <input type="checkbox"/> Medium (50<x 250) <input type="checkbox"/> Large (>250) | |
| A.1.8. Mitigation / adaptation focus | <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Adaptation <input type="checkbox"/> Cross-cutting | |
| A.1.9. Date of submission Date of re-submission | | |
| A.1.10. Project contact details | Contact person, position | Zerihun Getu, CRGE Facility Coordinator |
| | Organization | MoFEC |
| | Email address | zedget@yahoo.com |
| | Telephone number | +251921566324 |
| | Mailing address | Addis Ababa, Ethiopia. |

| | |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A.1.11. Results areas <i>(mark all that apply)</i> | |
| Reduced emissions from: | |
| <input type="checkbox"/> | Energy access and power generation (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.) |
| <input type="checkbox"/> | Low emission transport (E.g. high-speed rail, rapid bus system, etc.) |
| <input type="checkbox"/> | Buildings, cities and industries and appliances (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.) |
| <input type="checkbox"/> | Forestry and land use (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.) |
| Increased resilience of: | |
| <input checked="" type="checkbox"/> | Most vulnerable people and communities (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.) |
| <input checked="" type="checkbox"/> | Health and well-being, and food and water security 16) (E.g. climate-resilient crops, efficient irrigation systems, etc.) |
| <input type="checkbox"/> | Infrastructure and built environment |

(E.g. sea walls, resilient road networks, etc.)

■ Ecosystem and ecosystem services

(E.g. ecosystem conservation and management, ecotourism, etc.)

A.2. Project / Programme Executive Summary (max 300 words)

Please provide a brief description of the proposed project/programme, including the objectives and primary measurable benefits (see [investment criteria in section E](#)). The detailed description can be elaborated in [section C](#).

1. Ethiopia ranks as one of the countries at most “extreme risk” of climate change. 60% of the country is dryland, where annual rainfall is becoming increasingly unpredictable and is contributing to the rising frequency and severity of drought. Climate change therefore has significant implications, given the reliance of many of the communities in these areas on rain-fed agriculture. In 2015/16, a severe drought threatened one-tenth of the country’s population (c.10.3 million people¹) with catastrophic food shortages. Ethiopia’s exposure to drought and floods is heavily influenced by the El Niño/La Niña phenomenon. In 2015/16, Ethiopia experienced one of the worst droughts in decades.
2. Climate projections show high uncertainty with rainfall projections ranging from -25% to +30% by 2050. It has been estimated that droughts alone can reduce total GDP by 1% to 4% while soil erosion reduces agricultural GDP by 2% to 3%. If no adaptation measures are taken currently, climate change-induced impacts are projected to result in a 2-10% loss of GDP by 2045 relative to baseline growth.² Given Ethiopia’s general low level of economic development, it is particularly vulnerable to the adverse impacts of climate change. All assessments – including the Second National Communication to the UNFCCC (2014) and the National Adaptation Programme of Action (NAPA, 2007) have articulated this. Climate change is further increasing this uncertainty in three main ways:
 - Continued temperature increases of 0.8 to 2.7° C.
 - Continued rainfall variability with more frequent extremes
 - Parts of the country could see changes in key seasonal rainfall.
3. Within Ethiopia, causes of vulnerability to climate variability and change include, but are not limited to: high dependence on rain-fed agriculture; inefficient water resources management at the local level; low economic development level and low adaptive capacity.
4. Cognizant of the current and future impacts of climate change, the Government of Ethiopia (GoE) has developed the Climate Resilient Green Economy (CRGE) strategy, launched at the Durban COP in 2011. Ethiopia’s Climate Resilient water strategy sits at the heart of this CRGE Strategy, now mainstreamed into Ethiopia’s second Growth & Transformation Plan (GTP-II; 2015-2020). Building on the CRGE Strategy, Ethiopia was also the first LDC country to submit its INDC to the UNFCCC in June 2015. Ethiopia has since ratified the Paris Agreement in April 2016.
5. This project is designed in line with Ethiopia’s NDC implementation process and will catalyse the implementation of the CRGE strategy. It will transform the way that water is being utilized and managed in Ethiopia. The main objective of the project is to increase the resilience of the targeted rural communities to the adverse impacts of climate change by introducing new approaches to water supply and management systems capable of increasing the productive capacity of the community and the carrying capacity of the water ecosystems. The project is expected to benefit 330,000 people (or 73,333 households with the current average family size of 4.5) directly (30% Female Headed Households) with year-round access to reliable and safe water supply improve their food security and 990,000 people indirectly. 7,850 ha of degraded land will be rehabilitated, of which 5,000 ha shall be covered by trees. Improvement in female participation in decision making and in productive activities and an overall increase in agricultural productivity are also expected.
6. The design of this project combines improved water access and resource management in line with the Ethiopian Water Resources Management Policy 2.3³ to enable the most vulnerable communities to adapt to shocks of climate variability in the future. The project will introduce proven technologies (Solar powered ground water Pumps and Ground water monitoring Systems) and resilient infrastructure (Boreholes and Small Scale Irrigation Schemes), while utilizing natural resource management based adaptation methods (Physical and Biological Conservation).
7. The project will simultaneously establish institutional systems that enable gender and climate-responsive planning and development, ensuring optimization of social, economic and environmental benefits. By investing in particular gender responsive water and irrigation infrastructure and other climate smart initiatives, the project will improve health, food and water security as well as strengthen institutional and regulatory systems for gender and climate-responsive planning and development. As a result, the project will directly support 330,000 people (over 50% women

¹Ethiopia Humanitarian Requirement Document (2016).

²World Bank (2010).

³MoWIE, 1999

and 30% female headed households) to cope with the intensifying challenges of climate Change. The project will focus on women and in particular female heads of households to increase their resilience and unleash their untapped potential as key stakeholders and community leaders in their own right.

A.3. Project/Programme Milestone

| | |
|------------------------------------------------------------------|----------------------------------------------------------|
| Expected approval from accredited entity's Board (if applicable) | N/A |
| Expected financial close (if applicable) | TBD [date of agreement on the FAA between MoFEC and GCF] |
| Estimated implementation start and end date | Start: <u>01/08/2017</u> End: <u>01/09/2022</u> |
| Project/programme lifespan | 5 years, 0 months |

B.1. Description of Financial Elements of the Project / Programme

8. A detailed multi-year budget has been prepared for the project in order to generate reliable forecasts of funding requirements and allocations (Annex XIV(c)). Breakdowns of cost estimates are presented in this sub-section, and financial instruments are described in Section B.2.
9. The project will be financed by GCF grant resources and will include contributions from the Government of Ethiopia (GoE). It is proposed that a significant proportion of the total cost be covered by the GCF in the form of grant finance. This is essential because Ethiopia is a Least Developed Country (LDC) with very limited financial capacity to adapt to climate change, high degree of vulnerability of the beneficiaries (poor farmers and pastoralists) to climate change and high level of indebtedness of the country. Thus, the financial instruments chosen, which rely heavily on GCF grants to overcome structural barriers to change, are considered appropriate to the achievement of project objectives.
10. A breakdown of cost estimates by Outputs and Activities in local and foreign currency (USD) is provided in Table 1 below. As a form of currency hedging mechanism, we propose to base any agreement with the GCF in US dollars, with amounts indicated in the project proposal. Data from the National Bank of Ethiopia show that the Ethiopian Birr (ETB) has been depreciating against the USD over time. This would mean the value of USD-denominated grants will increase in ETB when the prevailing exchange rate is applied, which should help address (at least partially) anticipated inflationary cost increases over time.

Table 1: Breakdown of Project Costs by Output

| Component/output | Sub-component | Amount for entire project (in USD million) | Amount for entire project (in ETB million) | GCF funding amount (in USD million) | GoE co-financing (in USD million) |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------|-----------------------------------|
| Output 1. Improved Access to Water to Build Resilient Livelihoods | Total | 29.309 | 615.497 | 26.738 | 2.572 |
| | 1.1 Develop water schemes | 17.060 | 358.258 | 16.417 | 0.643 |
| | 1.2 Establish small scale irrigation and water retention structures | 12.249 | 257.239 | 10.321 | 1.929 |
| Output 2: Management of natural resources for improved water availability | 2.1 Degraded lands around the water sources managed | 15.427 | 323.959 | 13.569 | 1.857 |
| Output 3. Enabling environment | Total | 1.893 | 39.770 | 1.364 | 0.529 |
| | 3.1 Improved capacity of both men and women beneficiaries on use, management and administration of irrigation and potable water schemes and enhanced communication and learning | 1.346 | 28.276 | 0.912 | 0.434 |
| | 3.2 Institutional framework and local management instruments strengthened | 0.547 | 11.494 | 0.452 | 0.095 |
| Project management | | 3.331 | 69.952 | 3.331 | 0.000 |
| Grand total | | 49.961 | 1049.178 | 45.003 | 4.958 |

1 USD=21 ETB

| B.2. Project Financing Information | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------|---------------------|-----------|-----------|----------------|
| | Financial Instrument | Amount | Currency | Tenor | Pricing | | |
| (a) Total project financing | (a) = (b) + (c) | 50 | million USD (\$) | | | | |
| (b) GCF financing to recipient | (i) Senior Loans | | million USD (\$) | () years | () % | | |
| | (ii) Subordinated Loans | | million USD (\$) | () years | () % | | |
| | (iii) Equity | | million USD (\$) | | () % IRR | | |
| | (iv) Guarantees | | million USD (\$) | | | | |
| | (v) Reimbursable grants * | | million USD (\$) | | | | |
| | (vi) Grants * | 45 | million USD (\$) | | | | |
| | * Please provide economic and financial justification in section F.1 for the concessionality that GCF is expected to provide, particularly in the case of grants. Please specify difference in tenor and price between GCF financing and that of accredited entities. Please note that the level of concessionality should correspond to the level of the project/programme's expected performance against the investment criteria indicated in section E . | | | | | | |
| | Total requested (i+ii+iii+iv+v+vi) | 45 | million USD (\$) | | | | |
| (c) Co-financing to recipient | Financial Instrument | Amount | Currency | Name of Institution | Tenor | Pricing | Seniority |
| | <u>Grant</u> | 5 | million USD (\$) | GoE | () years | () % | <u>Options</u> |
| | | | <u>Options</u> | | () years | () % | <u>Options</u> |
| | <u>Grant</u> | | | | | () % IRR | <u>Options</u> |
| | | | | | | | <u>Options</u> |
| Lead financing institution: Ministry of Finance and Economic Cooperation (MoFEC) | | | | | | | |
| * A letter of commitment issued by the co-financing institution has been provided in Annex IV. | | | | | | | |
| (d) Financial terms between GCF and AE (if applicable) | N.A | | | | | | |
| B.3. Financial Markets Overview (if applicable) | | | | | | | |
| 11. The Government of Ethiopia is requesting 100% grant resources for the proposed project, the financial market overview is therefore not applicable. | | | | | | | |

C.1. Strategic Context

12. Ethiopia is a federal state subdivided into nine regional states, two administrative cities, 68 Zones; and 670 rural Woredas, 100 urban Woreda (districts) and 15,000 Kebeles. Kebele is the smallest administrative unit in the country, being part of a Woreda that is usually part of a zone, which in turn is part of a region. Ethiopia covers 1,119,683 sq. km with the population of 96.6 million (2013 est.), of which more than 84 percent live in rural areas. Analysis undertaken in Ethiopia's climate resilient strategy for agriculture (see *Figure 16, Page 29 Livelihood Exposure Maps, Agriculture Sector CR Strategy*) demonstrates that all political regions are vulnerable to one or more of climate hazards.

Climate change context

13. The IPCC's AR4⁴ revealed that globally induced climate change has a major effect on annual runoff compared to land-use changes in central Ethiopia. There has been increasingly high variability in rainfall between years, seasons and regions, trends that are of huge significance to Ethiopia given its dependence on rain-fed agriculture. The yearly variation of mean rainfall levels is 25%, although this can be as high as 50% in some regions⁵. These fluctuations have included changes in the intensity and frequency of extreme events, with the incidence of droughts and floods having increased in the last 10 years relative to the decade before, leading to severe impacts on people's livelihoods.

14. Climate change is already impacting Ethiopia. Current climate variability is imposing a significant challenge on Ethiopian local communities by affecting water and food security. Changing weather patterns, in addition to other environmental stresses including land overexploitation and deforestation, have increased soil degradation and led to water stress, drought, and crop failure. Recent climate trend analysis indicates that the mean annual temperature increased by 1.3°C between 1960 and 2006, with an increase in the number of hot days and nights of 20% and 38%, respectively.⁶ This trend is expected to worsen. Climate change projections indicate that Ethiopia will experience increasing temperatures in the coming decades; mean annual temperature will increase in the range of 0.9-1.1°C by 2030, 1.7-2.1°C by 2050 and 2.7-3.4°C by 2080 for the IPCC mid-range emission scenario compared to the baseline 1961-1990 level.⁷ Precipitation is expected to decrease in the northern regions of Ethiopia, while southern areas could see an increase of as much as 20%.

15. In Ethiopia, food security greatly depends on rain. Agriculture is the foundation of the economy, employing 85% of the country's over 96 million people. Some 85% of the Ethiopian population live in the rural areas and depend on rain-fed subsistence agriculture for their survival whilst 10% of the population depends on their pastoral livestock's for their survival. 55% of farmers cultivate a hectare or less of a land and grow 97% of the national crop outputs⁸. Ethiopia's food security depends on small-scale farmers who largely rely on rain-fed and traditional agricultural practices. Currently less than 30% of the arable land is cultivated and only about 250,000 hectares out of a potential 5 million hectares is irrigated. In this context, it should be noted that the agriculture sector contributes 46% of the national GDP⁹ and accounts for 90% of the national export.

Policy context

16. Ethiopia's long-term goal is to build a climate resilient green economy by reducing vulnerability and extreme weather events which are exacerbated by climate change. Ethiopia has already prepared several national level strategic and programmatic adaptation actions; including: Climate Resilient Green Economy (CRGE) strategy, the National Adaptation Programme of Action (NAPA), Ethiopian Program of Adaptation to Climate Change (EPACC). Reducing Emissions from Deforestation and Forest Degradation plus (REDD+), and water, sanitation and hygiene (WASH) programs. This project supports and aligns with the priority areas of the above national flagship strategies and programmes. Specific links are summarized below.

Overview of the climate related policy context in Ethiopia

| Policy framework | Priority areas | Examples of links |
|------------------|----------------|-------------------|
|------------------|----------------|-------------------|

⁴Climate Change 2007: Impacts, Adaptation and Vulnerability

⁵Ibid.

⁶McSweeney, C., New, M., & Lizcano, G. (2010), UNDP Climate Change Country Profiles: Ethiopia.

⁷National Meteorological Agency (2007), Climate Change National Adaptation Programme of Action (NAPA) of Ethiopia, Addis Ababa, Ethiopia.

⁸Ethiopian Central Statistics Agency & World Food Programme, March 2014

⁹CR Strategy – Agricultural Sector

| | | |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Climate Resilient Green Economy (CRGE) Strategy (2011)</p> | <p>The strategy aims to address both climate change adaptation and mitigation objectives. The strategy identifies priority sectors including agriculture (livestock and soil), forestry, transport, electric power, industry (including mining) and buildings (including urban waste and green cities). By implementing adaptation and mitigation interventions in the priority sectors, the strategy targets reducing greenhouse gas emissions by 64 percent by 2030. The CRGE Strategy has laid ground for Ethiopia's INDC.</p> | <p>All components of the project contribute to achieving the CRGE strategy. In particular, the project directly contributes to the adaptation aspects of the CRGE strategy and the INDC with some mitigation co-benefits through introduction of water supply and management regimes in moisture stressed rural landscapes and increase the productive capacity of the community and the carrying capacity of the water ecosystems</p> |
| <p>National Adaptation Programme of Action (NAPA)</p> | <p>NAPA identifies agriculture and livestock as priority areas to address climate change. In particular, NAPA provides list of priority activities including promoting drought/crop insurance and early drought and flood warning systems, development of small-scale irrigation and water harvesting schemes, community based sustainable use of wetland and capacity building and improved rangeland resources management practice.</p> | <p>The project intends to develop and promote small scale irrigation, water development, natural resources management, and capacity building which are linked to NPA.</p> |
| <p>Nationally Appropriate Mitigation Actions (NAMA)</p> | <p>Ethiopia has also prepared Nationally Appropriate Mitigation Actions (NAMA) and submitted to the UNFCCC in January 2010. The NAMA consists of selected sectors including agriculture, building, energy, forestry, industry, urban waste management and transport.</p> | <p>The project focuses on building resilience of smallholder agriculture and natural resources management around the water catchment area to ensure sustainable agriculture.</p> |
| <p>Ethiopian Programme of Adaptation to Climate Change (EPACC) (2011)</p> | <p>EPACC aims to build a climate resilient economy through adaptation initiatives implemented at sectoral, regional and local community levels. The EPACC programme links climate change adaptation with the economic and physical aspects of the country and identifies key climate change adaptation measures, strategic priorities. EPACC identifies various climate change risks in the areas of human, animal and crop diseases, land degradation, loss of biodiversity, decline in agricultural production, dwindling water supply, social inequality, urban waste accumulation, and displacement due to environmental stress and insecurity.</p> | <p>All components of the project contribute to the EPACC programme.</p> |
| <p>Reducing Emissions from Deforestation and Forest Degradation plus (REDD+) Strategy</p> | <p>The REDD+ strategy aims to reduce emissions from deforestation and forest degradation, and enhances the role of conservation and sustainable management of forests. By attaching monetary values for carbon stocks, the strategy aims to show the value of forests.</p> | <p>Specifically, interventions related to the management of natural resources for sustained water availability (Component 2 of the project) are linked to the REDD+ strategy</p> |
| <p>Ethiopia's Second National Communication (SNC)</p> | <p>Ethiopia's INDC components cover both mitigation and adaptation activities as reflected in the CRGE strategy. The priority sectors covered under Ethiopia's INDC are similar to those in the CRGE strategy which help reduce vulnerabilities due to climate change.</p> | <p>All components of the project contribute to achieving the Ethiopia's SNC).</p> |
| <p>Climate resilient (CR) strategy for water</p> | <p>The strategy identifies key priorities including accelerate universal access to water and sanitation, strengthen the management, co-ordination and streamlining of water resource planning, manage growing water demands, and ensure water allocation, improve local water storage facilities or participatory water resource management, increasing the resilience of rain fed agriculture, and strengthen data systems</p> | <p>In particular, interventions related to improved access to water to build resilient livelihoods (Component 1) and those under component 3 directly contribute to achieving the objectives of the CR for water strategy.</p> |
| <p>Climate resilient (CR) strategy for agriculture and forest</p> | <p>This strategy identifies 15 priority resilience options for immediate investment which are related to the sustainable agriculture and land management pillar. The main intervention area in the sustainable agriculture and land management pillar is soil and water conservation</p> | <p>Activities under the management of natural resources for sustained water availability (Component 2) help achieve the goals of the CR strategy for agriculture</p> |

| | | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| | (SWC) structures (e.g. bunds, trees, grass strips, contour leveling, terraces, shade trees, and waterways). | |
| One WASH Programme | The programme intends to achieve increased coverage of water supply and sanitation in rural and urban areas in Ethiopia and integrates water, health and education; specific interventions include watershed and water resources management, productive uses of water, environmental protection, climate resilience, capacity building, and other related activities. | Specifically, activities under components 2 and 3 are aligned with the One WASH Programme. |

The government of Ethiopia designed the Water Sector Policy and Water Sector Development Universal Access Plan (UAP I) and revised UAP II, and has achieved significant progress in the provision of safe water supply through its Water, sanitation and hygiene (WASH) programs both in the urban and the rural settings. This initiative has enabled Ethiopia to achieve significant progress to increase access to improved water and sanitation from 1990 to 2015. However, to date only 58% of the total population and 59% in rural areas, has access to improved water sources as per the GTP-II standards¹⁰ and only 24% use an improved sanitation facility. Ethiopia ranks 5th on the list of countries with the highest number of people practicing open defecation¹¹. It is estimated that 2.4 million deaths (4.2% of all deaths) could be prevented through improved hygiene and access to safe water and sanitation. 53% of the water, sanitation and hygiene (WASH) disease burden is dominated by diarrheal illness. These disproportionately affect children under the age of five, killing more young children each year than HIV/AIDS, tuberculosis and malaria combined¹².

17. Furthermore, Ethiopia has adopted the principles of Integrated Water Resources Management (IWRM) and has already put in place an appropriate water policy, legislation, strategy, and development program (including master plans) that embraces IWRM principles and approaches and is at a stage of implementation. However, capacity constraints have been a challenge to fully embed IWRM procedures at all levels.
18. WASH programs have a significant impact on health and education, and are of particular concern, as described in the recent IPCC Special Report on Extreme Events, to the risks of more frequent and intense extreme weather events such as floods, cyclones and droughts, alongside increasing temperatures. Such extremes pose particular challenges to the capacity of WASH programs to protect health, and there is accumulating evidence that climate change is worsening these risks.¹³
19. In terms of institutional arrangement, the CRGE Facility, which is housed within the MoFEC and managed by both the MoFEC (Accredited entity to the GCF) and the MEFCC (NDA for the GCF), was established in 2012 to access and channel Climate Funds from various sources and coordinate the implementation of climate focused projects in line with the CRGE Strategy of Ethiopia. This funding proposal was developed by the CRGE Facility jointly with the MoWIE and MoANR, the designated EE's for this project. The project design features address water supply issues at the centre of the CRGE to alleviate chronic problems linked with the lack of water supply with the core objective of improving climate resilience, health, food security, child mortality and increasing school enrolment in the targeted Woredas. This project will contribute to Ethiopia's NDC and NAPA implementation and is aligned to the Climate Resilient Water Strategy.

Selection of project sites:

20. An iterative process was followed to select Woredas and specific Kebeles for this project intervention. The Woreda Disaster Risk Profiling (WDRP) census that was implemented throughout Ethiopia was the basis to select Woredas. This was first used to understand Woreda level livelihood risk profile; identify the major disasters; difficulty to access the project site ; livelihood vulnerability information, level of awareness; institutional development at the local level, and the communities' capacity to cope with climate change shocks. Based on this profile, 22 Woredas were selected for subsequent baseline studies to shortlist Kebeles (within those Woredas) that are the most vulnerable.

¹⁰ Rural; 25 l/c/d within 1km radius. GTP-II (2015). Pp 39.

¹¹ "Country profile of Environmental Burden of Disease: Ethiopia." WHO, Geneva 2009

¹² Boschi-Pinto, C., Velebit, L., Shibuya, K. (2008) Estimating child mortality due to diarrhoea in developing countries. Bull World Health Organ, 86, pp. 710–717

¹³ IPCC. Managing the risks of extreme events and disasters to advance climate change adaptation. Special report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge, UK and New York, USA: Cambridge University Press; 2012

21. The Baseline Studies applied four main selection criteria to select the Kebeles for this project intervention I) potential for water availability; II) the Kebeles not being included in other national programs; III) Agro Ecology of the Kebele and IV) Stakeholder consultation with the Woreda, Kebele Elders and Community to identify the most vulnerable Kebele.
22. A relatively large number of Woredas (22) has been included in the proposal to capture the different adaptation planning zones in Ethiopia, i.e. to reflect the large differences in vulnerability, and thus to be able to test integrated solutions and climate smart planning in varied areas representative of the country. This will provide critical information for learning and subsequent scale-up, i.e. on what works well in different agro-ecological zones, *see Annex VIII - Map indicating the location of the project/programme.*
23. Following the baseline studies, detailed Hydrogeological and Irrigation Infrastructure feasibility studies were conducted in a total of 176 Kebeles within the 22 Woredas, - *see Annex II.* To this end, 22 Woredas with a targeted three Kebeles per Woreda and a total of 66 Kebeles have been selected for this project intervention and the Kebeles identified are considered to have high transformation potential upon the implementation of this project (*Figure 1, Location Map of the Project Area*)

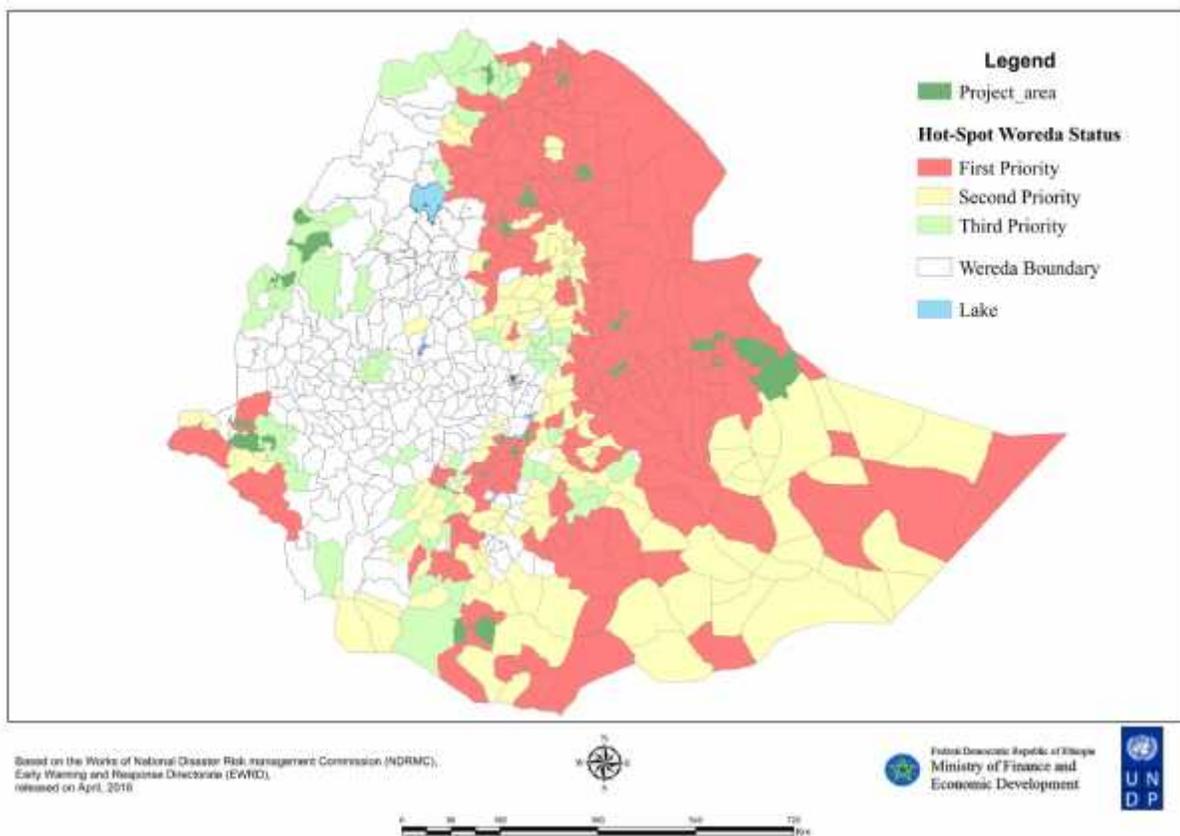


Figure 1 Location Map of Project Areas

C.2 Objectives Against Baseline

Objectives

24. The main objective of the project is to increase resilience of the targeted rural community to the adverse impacts of climate change by introducing new approaches to water supply and management that are capable of increasing the productive capacity of the community and the carrying capacity of the natural water ecosystems. A key focus will be on increasing the the supply of water through solar powered pump systems for effective adaptation benefits to the intermittent rainfall.

Results

25. The project will benefit 330,000 people directly (30% Female Headed Households) and 990,000 people indirectly. Direct beneficiaries include 330,000 people with year –round access to reliable and safe water supply, despite climate shocks and stresses and make them food secured. . Moreover, 7,850 ha degraded land will be rehabilitated

and managed, of which 5,000 ha shall be covered by trees. Improvement in women participation in decision making and in productive activities and increased agricultural productivity are also expected.

26. The current baseline scenarios described below will be improved by means of the proposed project outcomes.

Baseline 1: Improved access to water to build a resilient livelihood

27. Only 27% of the communities within the targeted Woredas have access to improved water sources, with 43% of rural households relying on unsafe surface water sources for drinking and 30% of the communities requiring travel of prolonged hours to get access to a water source (protected and or unprotected). Rainfall variability and the potential increased variability from climate change further exacerbates these impacts by drying up local water sources, often forcing families to rely on sources further away or to access contaminated water sources.
28. Collection of water is usually assigned to children, especially girls, and this reduces school attendance, as this task usually requires three to four hours a day. Thus, gender inequality is high in the target Woredas, as the majority of young girls discontinue their education even before completing first grade. The average school attendance is 35%, with 82% of people not being able to read and write. About 58% of females, in comparison to 38% of males, have no formal education, limiting future individual opportunities, economic and social status. In most of the rural areas women are the primary water carriers and users. Women spend many hours each day fetching water. Often the sources of their water are unprotected springs, or polluted streams or ponds. By virtue of their household functions they are more exposed to polluted water than the rest of the household, but they also use this source of water for their needs and that of the rest of household members which make the latter vulnerable to water-borne diseases.
29. Due to poor water resources management and to a lack of technical knowhow on how to build resilient infrastructure, only 5.3% of the targeted communities practice irrigation agriculture either in the form of traditional irrigation schemes or through the use of diversion channels, whilst close to 94% of the targeted community rely on subsistence rain fed agriculture. Ethiopia's economy, particularly the rural economy is heavily dependent on climate-related factors, making it difficult to split between rural development and climate related interventions. Temperatures have increased by an average of around 1°C since the 1960s. Rainfall is very variable, with a 20% decrease in the south-central region of the country. The economic impact of climate depends on the extent of annual weather variability and extremes, but recent major droughts have reduced GDP by 1%-4%. Rain induced soil erosion has been estimated to reduce GDP by around 1%. Ethiopia experiences a consistent trend of increasing temperature across the country over the last 50 years; the increase in temperature ranges from 0.1 0C to 0.4 0C per decade, resulting in an approximate average temperature increase of around 1°C since the 1960s. Historic data shows national rainfall variability of approximately 25% around the mean across the time period since 1960, with significant regional and local rainfall variability. Studies show that a decrease in rainfall and an increase in temperature both affect agriculture as the sector is highly dependent on rainfall. The trends in the contribution of agriculture to the country's total GDP clearly explain the relationship between the performance of agriculture, climate and the total economy. Years of drought and famine (1984/1985, 1994/1995, 2000/2001) are associated with very low contributions, whereas years of good climate (1982/83, 1990/91) are associated with better contributions. Recent studies also indicate that land productivity and crop yield are expected to decline as a result of climate change, especially in the drought prone areas¹⁴. In the drought-prone areas, there is little investment to mitigate the adverse effects of climate change and hence negligible TFP growth. However, with climate-related investments to increase TFP growth (can be considered as project scenario), the adverse effects of climate change can be reduced (i.e. high TFP growth with climate change). Without the proposed project interventions, the drought incidence caused by rainfall shortage will increase in the project target woredas, which can lead to migration, loss of lives, etc. Thus, investments in climate related activities including investment in irrigation have the potential to increase total factor productivity, thereby reducing the adverse effects of climate change. Note that substantial investment is required to reverse the devastating long-run effects of climate change, especially after 2050.

Expected project outcomes that will improve the baseline scenario

30. The project will promote the use of appropriate technology and infrastructure solutions for a resilient livelihood, and, consequently, i) will increase access to water supply, improving current health, gender and social conditions and ii) will reduce the climate risks from rain-fed subsistence agriculture, reducing negative environmental and economic impact. The introduction of green technologies, consistent with Ethiopia's national CRGE strategy and INDC will build resilience and, at the same time, reduce GHG emissions.

¹⁴ Gebre egziabher, Z., Stage, J., Mekonnen, A., and Alemu, A. (2011), Climate change and the Ethiopian economy: A computable general equilibrium model analysis, Efd Discussion Paper Series, Efd DP 11-09

31. The project will also introduce ground water monitoring systems; along with the required technical trainings to enable stakeholders collect data for further analyses and use. Key information on the effect of climate change on the country's water resources and interventions required to address possible risks are expected to be gained through this monitoring process.

Baseline 2 : Management of Natural Resources for Sustained Water Availability

32. In the targeted Woredas the availability of water, in both quantity and quality, is being severely affected by climate variability and climate change. Constraints identified from the full-fledged implementation of IWRM at the local level include capacity limitations, lack of proper coordination/collaboration among various stakeholders, and lack of integrated and participatory approaches in planning and implementation of water resources.
33. All of the Woredas in the proposed project have reported high agriculture losses in recent years, as a result of climate variability and shocks. Addressing the risks of current and future climate change to water supply and agricultural productivity is therefore critical in enhancing resilience. Frequent drought or erratic rainfall results in crop damage, loss of livestock and pastures, water shortage (for humans and livestock), malnutrition (due to lack of food), and migration of households and wild animals.
34. Deforestation, poor environmental conservation practices, conflict over grazing land and water points, and overgrazing, and in general poor integration of IWRM procedures at the local level among others, are the major factors aggravating the impacts of climate change in the targeted areas. Crop pests and diseases such as partinum, striga, white grub and stock borer are common, caused by poor farm management and lack of pest-resistant seeds.

Expected outcomes that will improve the baseline scenario

35. This project will implement the IWRM procedures in Ethiopia in the targeted Kebeles and will improve the management of water resources at the local level. This shall be done through the sustainable development of watersheds through physical and biological interventions such as bunds, trenches, terraces and planting trees, grass Strep's, etc. to support the sustainability of agricultural practices (soil and water), control runoff, reduce environmental degradation, and create conducive conditions for improved soil fertility, nutrient recycling, increased organic matter, increased ground water recharge and water retention in the target Kebeles.
36. The project outcome is the coordinated development (Component 1) and management (Component 2) of water and land resources and is aligned with the IWRM policy of Ethiopia. Project results will feed into other on-going national initiatives such as the IWRM projects being implemented in the various watersheds, SLMP, AGP and REDD+ programs being implemented in the adjacent Kebeles. This project will be implemented in different Agro-Ecological zones and so will provide fertile ground for learning and to understand what works well in each targeted Woreda's context and to subsequently scale up the interventions. The existing strong linkages of the project to on-going programs will allow project replication and increased impact. This project could be considered as one of the few initiatives in Ethiopia that has put climate change in to building the resilience of the communities. Whilst there are various ongoing national development programs and projects, climate change has not been captured at the core of it. This program has been strategically designed to address current and future water supply issues to the community as well as integrate initiatives and structural adjustments to efficiently manage this resource. Furthermore, this project has identified that water supply is the critical factor that is hindering the community from building its resilience. Having the fundamental issue at hand identified, this project has given strong emphasis to enhance access of communities to water for household use and irrigation. Unlike other projects being implemented in the adjacent SLMP, AGP, and REDD+ Kebeles, the project is water centric which is the key enabler to build long-term resilience. This makes this project unique in the sense that it will build the resilience of the community whilst at the same time seamlessly weave into and builds into the project results of other ongoing national initiatives. As this project is based on the CRGE Strategy, the enabling environment component of this project will build the required capacity at all levels which are critical for sustainability and also to influence other ongoing initiatives to be aligned to the strategy. This project leverages the links with other efforts going on in the country through experience sharing, capacity building, and knowledge generation via identification of best practices.

Baseline 3: Enabling Environment

37. Several factors have been identified as critical and the root causes for the communities increased vulnerability in all Woredas that were covered under the baseline survey. To name a few;
- Lack of capacity and awareness to mainstream IWRM procedures at the local level in line with the national IWRM policy;
 - Ineffective institutional architecture and management instruments at the local level;

- Lack of capacity at the Woreda level to prepare climate and gender responsive plans and budgets;
- Lack of clear and transparent operational manual and/or user guidelines that help assure the application of common rules and principles in a gender responsive manner;
- Untrained Water Users Association members and weak representation of women in the associations who are unable to manage the operation and maintenance of existing schemes;
- Inadequate attention to creating awareness among the farmers on the importance of gender responsive resilient infrastructures for sustainable livelihoods; and
- Lack of gender inclusive consultation process for planning, implementation and management of water infrastructures at the local level.

Expected outcomes that will improve the baseline scenario

38. This project will promote the implementation of IWRM procedures through improved institutional structures and management instruments and strengthen participatory approach in the planning and implementation of the IWRM to create a more conducive enabling environment. In particular, support to the government's on going reforms of the regulatory framework at the Woreda level to be streamlined to the CRGE strategy at the national level. The project will contribute to establishing/strengthening climate and gender responsive integrated planning, strengthening institutional capacity, and establishing an efficient project management, monitoring and evaluation system.

C.3. Project / Programme Description

39. Aiming at improving the baseline scenarios shown in section C.2, the project is divided into three interrelated components: Improved Access to Water to Build Resilient Livelihoods (**Component 1**); Management of Natural Resources for Sustained Water Availability (**Component 2**); and Enabling Environment (**Component 3**). A brief description of these components is presented below.

Component 1: Improved access to water to build a resilient livelihood

40. This component is designed to be aligned with four strategic priorities outlined in the CRGE Strategy with respect to the water sector. In line with Strategic Priority 4.1 Accelerate universal access to WASH; it will enhance potable water supply for vulnerable households from groundwater sources that are resilient to current climate shocks and future climate change trends. Step and continuous pumping test followed by recovery shall be followed to delineate safe abstraction rate (Yield) of the water well. In addition to understanding yield, pumping test will also be used to;
- Determine yield drawdown behavior of the well at various pumping output rates. This would mean recharge and abstraction rate can be clearly deduced after conducting a pumping test;
 - Assess the impact of the Pumping Well on nearby water wells and springs; and
 - Facilitate retrieval of water samples for chemical and bacteria analysis.

For further details, please refer to the Feasibility Studies, section E 3.2 Borehole development and testing section on the procedures to measure optimum abstraction and recharge rate

41. In line with the CRGE Strategy, Strategic Priority 3.1 - Accelerate irrigation plans; this component will also provide water to the small-scale irrigation infrastructure that shall be built under this project. A combination of interventions is envisaged to develop small-scale irrigation through upgrading traditional irrigation schemes, and construction of diversion weirs to irrigate more than 1990 ha of land. Easily replicable irrigation designs will be discussed with stakeholders directly involved and concerned with water collection, included men and women farmers, and with those responsible with irrigation systems maintenance. Overall, this component will aim to implement irrigation technologies that meet the needs of local communities through an equitable process involving end-users in the design and implementation activities. This means to collectively discuss with community members what would be the best farming technologies that can simultaneously reduce farmer's workload; be gender-friendly (e.g. be safe and secure to use by women farmers and socially acceptable); be economically viable and environmentally friendly (e.g. to phase out of diesel powered generators).
42. Aligned with the CRGE Strategy Priority, Strategic Priority 2.2 Accelerate non-grid energy access, water will be provided for potable and irrigation use in the targeted Kebeles through solar powered pumps. Furthermore, pumps that are currently powered by diesel generators shall be connected with either grid or solar power to completely decommission the use of diesel generators in the targeted Kebeles. This innovative approach, will totally replace planned and existing diesel powered generators within the targeted Kebeles and will also influence how rural water supply schemes should be designed in the future.

43. In addition, and in line with the CRGE Strategy Priority, Strategic Priority 5.1 Data systems for decision support oriented to strengthening data systems to provide timely, reliable and usable data for decision makers at all levels, groundwater-monitoring systems shall be installed in 44 wells drilled. Groundwater will be measured both quantitatively and qualitatively in real time, contributing to the GoE efforts in addressing most pressing water policy adjustments through a stronger integration of groundwater development and land use planning.

Main Expected Outputs of Component 1

44. The following outputs are expected to be delivered from Component 1: (i) construction of 112 drilled wells and 80 hand dug wells, 30 springs, 31 community ponds, 150 water reservoirs, 140 water points in the 66 Kebeles targeted; (ii) implementation of groundwater monitoring systems in 44 wells;(iv) the use of solar powered pumps in the 112 drilled wells, (iii) implementation of small-scale irrigation systems covering an area of 5,421 ha. Main project activities under project output are presented below.

Output 1.1 - Water Schemes Developed

Specific Activities under this output include;

- Activity 1.1.1 Tender document preparation and bidding process (consultant and contractor)
- Activity 1.1.2 Procurement of work (equipment and machineries) including mobilization Kebele's
- Activity 1.1.3 Hiring supervision consultants
- Activity 1.1.4 conducting Geophysical studies
- Activity 1.1.5 Shallow wells drilling (100m depth, 6" pvc casing)
- Activity 1.1.6 Deep water wells drilling (150m depth, 8" pvc casing)
- Activity 1.1.7 Construction of hand-dug wells
- Activity 1.1.8 Procurement and installation of complete set of solar PV arrays with all required control box
- Activity 1.1.9 Supervision of drilling and construction of wells, etc.
- Activity 1.1.10 Construction of water reservoir
- Activity 1.1.11 Supply and installation of all pipes with fittings for drinking water supply
- Activity 1.1.12 Installation of transformer, including power lines and all miscellaneous costs, for existing boreholes power source upgrading
- Activity 1.1.13 Construction of water points
- Activity 1.1.14 Installation, testing, and commissioning of all electro-mechanical equipment
- Activity 1.1.15 Construction of guard house at solar pump system and motor house
- Activity 1.1.16 Development of springs for potable water supply
- Activity 1.1.17 procurement non-vented water well monitoring device- in situ mini-troll divers, two per Woreda
- Activity 1.1.18 Purchase and supply GPS (22/ 1 per woreda) Garmin, model MAP 64
- Activity 1.1.19 Configure and install non-vented water well monitoring devices

Output 1.2 - SSI and water retentions structures established

Output 1.2 - SSI and water retentions structures established

- Activity 1.2.1 Service procurement for SSI study and design preparation
- Activity 1.2.2 Procurement and installation of complete set of Solar PV arrays with all required control box to power surface (40) and submersible pumps (112)
- Activity 1.2.3 Up-grading of traditional irrigation schemes
- Activity 1.2.4 Irrigation through construction of diversion weirs
- Activity 1.2.5 Irrigation through water harvesting structures
- Activity 1.2.6 Irrigation through community pond construction
- Activity 1.2.7 Confirmation of design and Irrigation through construction of hand dug wells
- Activity 1.2.8 Confirmation of design and Irrigation through development of springs
- Activity 1.2.9 Confirmation of design and Develop small scale irrigation canals
- Activity 1.2.10. Irrigation through construction of dams
- Activity 1.2.11 Supply and installation of hand pumps for household irrigation
- Activity 1.2.12 Re-vegetate disturbed areas due to construction of wells and irrigation fields (ha)

- Activity 1.2.13 Sediment retention fences to minimize release of clays and fine silts into aquatic environment
- Activity 1.2.14 Silencers and mufflers to reduce noise
- Activity 1.2.15 Dust gauge procurement and installation
- Activity 1.2.16 Operation and maintenance for irrigation infrastructure (including spare parts)

Component 2: Management of Natural Resources for Sustained Water Availability

45. The CRGE Strategy identifies water resources as a key driver of economic and social development whilst also having a basic function in maintaining the integrity of the natural environment. It was therefore imperative that this funding proposal considered the rationale for the IWRM approach to be followed as a way forward for efficient, equitable and sustainable development and management of the limited water resources.
46. This component is linked to the on-going nationwide IWRM policy that is being implemented in Ethiopia. In line with this policy, water resources and land use should be managed through a community level participatory approach to ensure that the limited water resources are properly managed and to instil ownership of the project results for sustainability. This component will essentially focus on rehabilitation of degraded landscape and restoration of forest resource surrounding the water resources. The intended activities under this component will improve water retention capacity of the soil, reducing run-offs, etc. and contribute to the sustainable utilization of both ground and surface water. The results of this component are the reduction of risks from rainfall variability and soil erosion, the increase of soil organic matter and soil fertility, the increase of agricultural productivity, the increased groundwater recharge and the reduced greenhouse gas emissions. The following specific activities will be conducted under this component:

Output 2.1 Degraded lands around the water sources managed

- Activity 2.2.1 Threat communal and private degraded land with physical and biological soil and water conservation (SWC) measures
- Activity 2.2.2 management of range land management in pastoral watersheds
- Activity 2.2.3 Nursery establishment or upgrading
- Activity 2.2.4 Purchase improved and selected seeds
- Activity 2.2.5 Seedling production, afforestation and grass seedling planting
- Activity 2.2.6 Construction of water harvesting structures for rehabilitation of land
- Activity 2.2.7 Soil fertility management

Main Expected Outputs of Component 2

47. The outputs of this component are directly linked to the rehabilitation of degraded forest, farm and communal lands. The support includes, among others, establishing seedling nursery centres; procurement of seeds; seedling production and planting trees on 5,000 ha as part of rehabilitation of 7,850 ha degraded land through physical and biological landscape restoration conservation and management measures. The type of plant species to be planted and restoration measures to be applied will differ from area to area and depends on the agro-ecology. The selection of species will be given due attention during the actual implementation drawing on local knowledge and practice with attention to gender differences. Species which have proved record for land scape restoration, soil fertility management, water retention, erosion reduction and water absorption will be prioritized. Local knowledge and practice will be also considered.

Component 3: Enabling Environment

48. The CRGE Water Sector Strategy has been unsatisfactorily implemented at the local level. Local development plans (Woreda level plans) are developed annually in Ethiopia but do not properly mainstream the CRGE strategy. A focus only on a national sector and regional planning would omit some of the most vulnerable groups at the local level, and also not fully capture the preferences or responses of affected communities. To overcome these constraints, Component 3 focuses on: (i) strengthening the Institutional framework and local management instruments (ii) building human capacity and strengthening communication and learning at the local level.
49. A key innovation of this project that will be developed in this Component is to translate national CRGE plans into local development planning, making existing Woreda plans climate smart and aligning them with the national GTP II targets. In Ethiopia, there is a need to build climate resilience into local development planning, and this is particularly important given the localised nature of climate risks and vulnerability. A focus only on a national, sector and regional planning would omit some of the most vulnerable groups, and also not fully capture the preferences or responses of

affected communities. Related to this, a key issue of the recent focus on climate mainstreaming is to look to embed the CRGE climate smart (or resilience) activities within existing plans and policies. At the national level, the Government of Ethiopia has mainstreamed the CRGE strategy in its second five year Growth and Transformation Plan (GTP-II). However, mainstreaming of CRGE strategy at Woreda level has not yet been advanced due to limited capacity. Activities under this component will focus on supporting the woredas for integrated climate smart planning with strong emphasis on gender responsive integrated climate-smart water interventions. Furthermore, activities under this component will seek to address gender inequalities that may prevent women from benefitting from these interventions. It will also be linked to awareness raising, monitoring and learning initiatives to ensure this approach is developed and implemented with the local community, and that sufficient learning elements are put in place to ensure the results of activities can help inform future planning. This component will also develop climate resilient and gender responsive planning for integrated agricultural development, with a focus on climate smart agriculture and integrated land-water-ecosystem management.

50. In addition, this component is also central to bringing about a paradigm shift to build the resilience of the vulnerable communities and address capacity constraints especially for women at all levels. Community ownership of the project results particularly the IWRM (Component 1 & 2), on the ground shall involve women in the planning, implementation and management of the schemes to ensure the success of the project and continued sustainability. Woreda-based climate and gender responsive integrated planning and budgeting systems shall be established and/ or strengthened through institutional guidelines, manuals and reform of the institutional architecture. This shall be achieved by building capacity and transferring knowledge to the communities, bridging the gender gaps through tailor-made training, linking communities with higher learning institutions/research centres as well as strengthening gender responsive institutional capacity at all levels.
51. The project involves a greater degree of collaboration than typical projects, thus it is important to start the project with an orientation session to advance the project objectives. It is also important for the project to have a common set of information that is shared across the project areas, to enhance consistency and efficiency. The project will therefore start with a series of orientation activities to ensure all actors have a common understanding of the project. At the local level, the orientation will be designed to enhance local level participation in the planning and implementation of this project as well as other initiatives that are being implemented in the select Woredas. Furthermore, it is about enhancing awareness of climate change and building ownership of the project results by the community. Woreda officials will also be sensitized on climate change issues and relevant CRGE strategies and objectives to mainstream the overarching CRGE strategy to local development plans and implementation regiments. This component is critically important, as it is the basis for sustainability and replicability of the project. The following key activities will be implemented under each output under this component.

Output 3.1 Improved capacity of both men and women beneficiaries on use, management and administration of irrigation and potable water schemes and enhanced communication and learning

Activity 3.1.1 Organize trainings for communities on management, operations and maintenance of water schemes and irrigation agronomy

Activity 3.1.2 organize in-country experience exchange and learning events

Activity 3.1.3 organize training on communication and knowledge management

Activity 3.1.4 Training and awareness raising for ESMF

Output 3.2 Institutional framework and local management instruments strengthened

Activity 3.2.1 establish link with higher learning institutions/ research centers

Activity 3.2.2 establish and operationalize data base

Activity 3.2.3 prepare locally appropriate climate planning framework

52. The expected outcome will be that human and institutional capacity is built and sustainability ensured across all Components of the project, as a result of strengthened institutions, processes and systems, and increased capacity of human, institutional and regulatory system for climate-responsive planning and implementation.

Main Expected Outputs of Component 3

53. The main outputs of Component 3 comprise: (i) strengthening experts/community members with knowledge and skills on operations and maintenance of potable water and irrigation schemes (1500 beneficiaries), 10 experience exchange and learning events organized, 9 linkages with higher learning institutions/ research centers established (ii) strengthening institutional framework and local management instruments across 44 Woreda offices in planning, operation.

C.4. Background Information on Project / Programme Sponsor (Executing Entity)

The Accredited Entity – MoFEC

54. Formally established in 1907, MOFEC has undergone several structural reforms since its establishment, with its mandates revised and broadened. MOFEC is a Ministry within the Cabinet of the Federal Democratic Republic of Ethiopia that is responsible to drive the economic policy of Ethiopia and to provide oversight on national financial management, national development planning, and development programs implementation. MOFEC executes these responsibilities in all government sectors. For effective delivery of its mandates, MOFEC follows the federal structure outlined in the Ethiopian constitution and has its office in Addis Ababa, Ethiopia, with Bureaus of Finance and Economic Development (BOFED)¹⁵ situated in the regional (provincial) capitals of Ethiopia.
55. In accordance with the law, MOFEC is also mandated to enter into contracts and sign international agreements on behalf of the Government of Ethiopia¹⁶. In line with this mandate, MOFEC established in 2012 a Climate Resilient Green Economy (CRGE) Facility, a national fund to mobilize international climate finance resources for the implementation and realization of Ethiopia's climate resilience building and low carbon development agenda.
56. To ensure that capacities are more targeted for the implementation of climate-related finance, MOFEC has established a CRGE Facility Secretariat. The Secretariat falls under MOFEC and includes capacities in project management, appraisal, review and monitoring. The Secretariat operates under the rules of government and is under the proclamation establishing MOFEC.

The Executing Entities – MoANR & MoWIE

57. Two line ministries, the Ministry of Agriculture and Natural Resources (MoANR), and the Ministry of Water, Irrigation and Electricity (MoWIE) will execute the project directly under the overall guidance and oversight of the CRGE Facility Management Committee, co-chaired by State Ministers of MOFEC (the accredited entity) and MEFCO (the NDA) (see Section C.7:).
58. The MoANR formally known as Ministry of Agriculture was established in 1907 mandated to oversee the implementation of agricultural development strategies and ensuring the food security of the country on a Federal level. The powers and duties of the MoANR include: conservation and use of forest and wildlife resources, food security, water use and small-scale irrigation, monitoring events affecting agricultural development aiming at promoting agricultural development, and establishing and providing agriculture and rural technology training.
59. The Ministry has subsidiaries at the regions: the Regional Bureaus of Agriculture and Woredas; the Woreda Agricultural Offices; the Kebele Development Agents and the communities of the intervention Woredas. The Ministry has an operational structure that extends to the sub-village level and reaches the majority of farmers. It has a wealth of experience in managing and implementing large-scale donor or Government funded projects and programs (See Section C.7 for details).
60. Similarly, the MoWIE formally known as Ministry of Water & Irrigation & Electricity is a federal organization established to undertake the management of water resources, water supply and sanitation, large and medium scale irrigation and electricity. The Ministry is a regulatory body that is involved in the planning, development and management of resources, preparation and implementation of guidelines, strategies, policies, programs, and sectoral laws and regulations. It also, conducts study and research activities, dam safety and hydropower generation; river basin studies; groundwater studies and development; and water use permit and licensing.
61. The two ministries have already institutionalized the CRGE unit in line with the guidance provided by the CRGE Inter-Ministerial steering committee, which is chaired by the Prime Minister's Office. The unit are functioning under the Environmental Impact Assessment and Social Development Office, within the Ministry of MoWIE and under the Natural Resources Management Directorate in MoANR, which are responsible for the overall coordination and facilitation of the programmes and projects related to the CRGE initiative. These units are coordinating various climate change related projects such as Energy+ program, One WASH and the Fast Track Investment projects in their respective ministries. The Units have an established line of communication with the CRGE facility and Development Partners. In addition to designing projects, they also compile action plans, follow up on the financial issues of the programs/ projects, compile all reports of the programs/ projects which are submitted to CRGE facility and Development Partners, facilitate the audit process, organize monitoring and evaluation as well as annual consultation workshops. Note that although there are various interventions in the target Woredas, one of the criteria to select project sites was that Kebeles should not be covered by any of the on-going interventions. Various investments in

¹⁵ Given the Federal System of Government, BOFED are autonomous regional counterparts of MOFEC/MOFEC, which are accountable to the Councils of their respective Regions, but working closely and with the support of MOFEC/MOFEC.

¹⁶ The Proclamation no. 691/2010 confers upon MOFEC/MOFEC, powers to mobilize, negotiate and sign foreign development aid and loans, and follow-up the implementation of same, and to manage and coordinate bilateral economic cooperation as well as relationships with international and regional organizations set-up to create economic cooperation.

agriculture, forest, and water have been undertaken over years in Ethiopia. Such investments include Ethiopia's afforestation and reforestation regular programs; Sustainable Land Management programs, Agricultural Growth Programs, Productive Safety Net Program (PSNP); WASH Sector-Wide Approach and UNDP GEF projects, including Climate Information and EWS, Promoting Autonomous Community and Adaptation Project and Coping with Climate Change and Drought Projects, implemented in Ethiopia. Please refer annex 6 for summary of some of the flagship programs. The list of water related projects and programs in the target woredas including NRM is annexed. Thus the target Kebeles are not covered by any of the ongoing interventions, making it difficult to explore co-finance options with other programmes.

C.5. Market Overview (if applicable)

62. The project promotes sustainable agriculture in drought vulnerable areas of the country through reducing barriers which include information asymmetry (on risks, causes or practices and technologies of reducing risks), risk averseness (i.e. smallholder farmers are constrained from investing in climate smart practices due to their risk averseness), limited ability of smallholder farmers to pay, as well as inadequate supply of technologies and inputs. In addition, as a Least Developed Country (LDC), Ethiopia has very limited financial capacity to overcome barriers and adapt to evolving climate change which require high initial capital expenditures. Although the project depends on a small contributions from the Ethiopian government, a large part of the project is expected to be financed by GCF funding in the form of grants which focuses on supporting higher-cost capital expenditures as a springboard to initiate transformation process (e.g. water resource management and irrigation infrastructure). Neither the Ethiopian government nor vulnerable farmers are able to afford in investing in activities that require high upfront capital outlays, at least in establishing the necessary infrastructure.
63. The initial catalytic effect of the GCF grant will help train vulnerable farmers through introducing climate smart practices and help them adapt climate change during the project period. By the end of the project duration, the selected communities will be able to continually adapt to changes in climate on a self-sustaining basis, with limited government assistance. The project is not intended to generate public revenue from beneficiaries, rather support vulnerable farmers to adapt and cope with climate change. Given the size of the capital investment required, as well as limited capacity of target farmers, the GCF fund will be used to establish the basic infrastructure, which farmers use to sustain their livelihoods. In addition, the water market for irrigation is not well developed in the country and the scope for cost recovery opportunities is limited. It is only after the project period that beneficiary farmers are expected to contribute to cover costs associated with operations and maintenance of water infrastructures, including solar PVs.
64. The price of modern energy is relatively low compared with kerosene, due to government subsidies. Tariffs for modern energy (largely hydro-power) are heavily regulated by the Government and vary by energy end-users; tariffs are relatively low for residential uses and high for industrial and commercial uses. The Government also provides incentives (subsidies) for private companies engaged in the supply of renewable energy; such incentives are in the form of duty-free importation of renewable energy equipment and accessories. Currently, the increasing Block Tariff (IBT) is being used in Ethiopia for pricing electricity, which is an extremely popular tariff structure in low-income countries because it is perceived to provide lower-cost access to poor households, while middle- and upper-income households and other customers pay more for electricity. Low prices in renewable energy sources have made the products more affordable to low-income populations and many companies are now seeing these populations as viable markets for commercial sales of solar products. It is expected that the government provides support to scale-up solar solutions through improved regulatory and tariff policies.¹⁷ As any other green technology, the solar pumping technology is eligible for capital subsidy, i.e. investors are entitled to receive subsidies from the government which involve in the form of tax incentives.

C.6. Regulation, Taxation and Insurance (if applicable)

Provide details of government licences or permits required for implementing and operating the project/programme, the issuing authority, and the date of issue or expected date of issue.

65. Where Executing Entities implement activities of the project, there will be no need to issue investment licenses. However, the private sector is required to provide renewed business licenses including due diligence on competency grade for construction companies and quality assurance certificates in line with the Ethiopian Standardization Authority for equipment's and materials imported. These are mandatory requirements and are articulated in the Procurement Directive issued by MoFEC (See Section F4 for specifics) The Ethiopian Investment Commission (EIC) is the autonomous regulatory agency responsible for issuing investment permits, work permits, trade registration certificates and business licenses as part of its one-stop-shop services for investors. The Investment Proclamation of 2002, as amended in 2003, and the 2003 Regulation on Investment Incentives, constitutes the main legal framework for both foreign and domestic investment in Ethiopia. This framework describes, among other things, the

¹⁷ The current tariff for modern electricity is below USD 3 cents per KW.

forms of investment and capital requirements, investment permits, concessions, incentives and facilities. An industrial development strategy was also issued in 2002 aimed at: (i) placing private investment as the engine of industrial development; (ii) promoting export-led and labor-intensive industrial development; and (iii) promoting joint ventures in industrial development. With regard to the forest sector, the current draft Federal Forest Proclamation has provisions for “*certificates of possession*” to be provided to forest user groups, and requires Government institutions to make best efforts to strengthen tenure security for participatory forest development associations and community groups.

66. Government institutions responsible for managing the project are not subject to any profit or business taxes. Procurement of goods and services for the project will incur taxes as any other project. Where the project requires import of goods from abroad, this necessitates payment of import duties and taxes.
67. The National Bank of Ethiopia (NBE) is mandated to issue foreign exchange directives to control the transactions and allocation of foreign exchange resource. The local currency, the Ethiopian Birr, is not freely convertible. The NBE therefore prioritizes the provision of foreign exchange for selected goods and services. Payments for imports can be made by letter of credit, cash against documents and advance payment. MoFEC has significant experience with international procurement and strong relationships with the Federal Public Procurement and Property Administration Agency, which is responsible for management of international procurement to international standards.

Provide details on insurance policies related to project/programme.

This is not applicable to the proposed project.

C.7. Institutional / Implementation Arrangements

Federal Level

68. MoFEC, the accredited entity (AE), will assume full financial and programmatic management accountability for the funds disbursed from the GCF. MoFEC, in its role as the Accredited Entity has overall responsibility and oversight for the project including project preparation, project implementation and supervision, financial management, and reporting. The CRGE Facility, a climate finance delivery entity within the MoFEC, will be responsible for the day-to-day management of funds released to the Executing Entities (MoWIE and MoANR) through its extended bureaus and offices at the regional level – Bureau of Finance and Economic Development (BOFED) and Woreda level - Woreda Office of Finance and Economic Development (WOFED). Periodic monitoring and evaluation (M&E) shall also be conducted by the AE to ensure that project activities are being implemented in the planned time schedule, quality and to also identify potential risks early on the project.
69. The CRGE Facility will assign dedicated technical and financial project staff at the various tiers of governance (See *Figure 3 Project Reporting Path*) that will facilitate fund disbursement, compile periodic reports; conduct monitoring and evaluation and ensure compliance to the environmental, gender and social safeguard standards of the GCF.
70. The CRGE Facility, in addition to its existing Operational Manual, will develop a Project Implementation Manual (PIM) (under component 3) that elaborates fund management at the various levels of governance. It will also ensure that the two executing ministries are aligned to the PIM in implementing the project. .
71. At the federal level, within the CRGE Facility and in each Executing Entity, three Project Coordinators will be hired by this project, who will be assisted by the existing staff employed by the GoE within these Ministries. The Project Coordinator will provide guidance and technical support to the regional level Project officer. He/she will consolidate technical reports from the regions and submit to the CRGE Facility.

Regional Level

72. At regional level, a total of 10 Project Officers (one per region– at least 50% of which will be women) will be hired to conduct regular monitoring, supervision and oversight of project execution at Woreda level. The existing team in the regional sector bureau who are employed by the GoE will be assisting the Project Officers who will be employed under this project.

Woreda Level

73. At the Woreda level, an expert within each targeted 22 Woredas will be hired (at least 50% of which will be women) to provide technical input to beneficiary households and also to conduct regular monitoring and follow up of the project implementation process at the designated Kebeles within the Woredas. In addition, finance officer will also be hired within each targeted Woreda to ensure that funds are effectively disbursed, utilized, monitored and reported back to the CRGE Facility. Headed by the Woreda level expert, a Woreda Coordination Body (WCB) will be established in each of the 22 Woredas and housed under the office of the Woreda Administrator. Wherever possible, depending on the actual constitution of the woreda level experts, the project will ensure at least 50% of the WCB members are women. The main objective of the WCB is to ensure that all the plans and mitigation actions are plugged into the

ground as well as to inform other on-going development projects to be aligned to the regulatory and institutional frameworks that shall be developed under this project. The WCB will be the fundamental body in ensuring the CR Woreda plans that shall be developed under this project are implemented at all Kebeles. The WCB will be comprised of Woreda Office Administrators and experts, Women and Youth Affairs and Finance Office. Under the over-sight of the Woreda Administrator and direct supervision of the Office Heads of the two sectors, the Woreda Level experts will run the day-to-day project activities and processes, engage stakeholders, and mobilize communities at target Kebele level.

Kebele /Village Level

74. Community representation and engagement is coordinated by Kebele (village) Committees. In each of the 66 project target Kebeles, a Community Facilitator will be hired by the project (at least 50% of which will be women). Local stakeholders and community members have a key role to play in the implementation and monitoring of the project. Consultations with all stakeholders, including women’s groups and community leaders will be organized to ensure there is clear understanding of the roles, functions and responsibilities within the project’s decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. At the Kebele (community) level, the project-hired community facilitators in collaboration with the Development Agents (DAs) will be responsible for advisory support and extension services to local beneficiaries (mainly farmers with special attention to women. They will be responsible for capacity building and backstopping in the implementation of programme activities. Utmost focus will be given to work based on gender balance team and promote equal representation and active participation of women headed households, youth and girls that will get high priority. To ensure gender-balanced team at project level, in addition to having 50% women experts’ representation across the 10 regions, 22 woredas and 66 kebeles, the project will also aim to ensure 50% women facilitators are hired at each woreda-kebele block. That is, of the total four experts to be hired (1 at woreda level and total of 3 at the three kebeles under each woreda) 50% will be women. The project M&E officers at the woreda and MoFEC level will be responsible to overlook gender responsiveness is ensured throughout the project implementation
75. To ensure implementation of project activities are fully owned by the communities, Kebele Implementing Committee (KIC), of which 50% are women, will be set up. The KIC will comprise community members that will represent the various socio-economic groups and will advise on the design, construction and maintenance of facilities and ensure all activities meet the needs of local communities and end-users. During the course of the project implementation, ‘pairing’ between the existing staff who are on the government payroll and project paid staff will be ensured at all levels for knowledge and skill transfer and project sustainability. The following chart depicts the projects implementation arrangement.

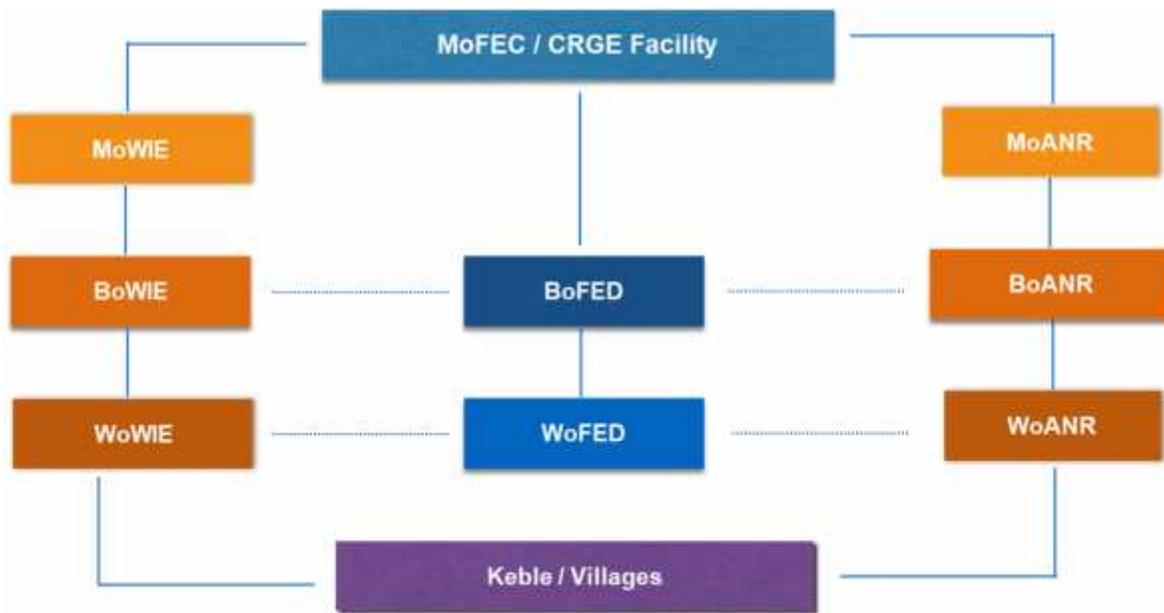
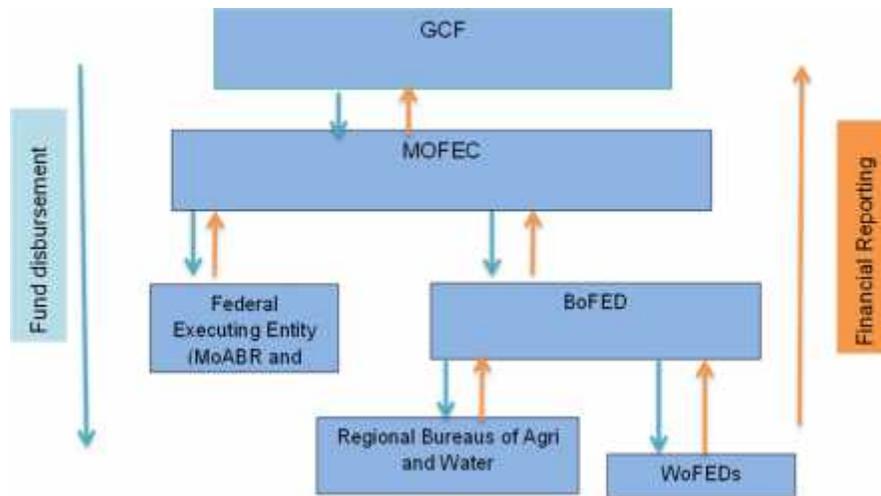


Figure 2 Project Implementation Arrangement

Fund Disbursement and Financial Reporting:

76. The Project’s financial management and procurement will be guided by the GoE’s public finance management and public procurement regulations, which is identical to MOFEC’s financial management and procedure policies. On top of this, MoFEC is the responsible organ for public financial management in the structure of the Ethiopia government. As such it is the lead in the implementation of the public financial management policies of the country. The directives in-force are prepared by MOFEC on the basis of the public procurement and property administration proclamation (PPPA). The Public Procurement and Property Administration Agency (PPPAA), which an agency for the oversight of public procurement and property administration is accountable to MOFEC. The Executing entities are public institutions, which manage budgetary, programmatic and project resources channeled from the MOFEC. Their financial management and procurement systems and practices are similar to MOFEC and are under constant supervision and regulation by MoFEC. Furthermore, the OFAG and its replica at regional levels perform regular audits of the accounts of the federal and regional public bodies and report to the federal and regional parliament respectively. The PPPA also conducts procurement audits of these public institutions. Hence the EEs are under continuous due diligence process by MOFEC, OFAG and PPPAA. The project funds will be deposited in designated CRGE accounts of the Federal institutions as well as CRGE accounts of the Bureau of Finance and Economic Development (BOFED) at the regions and CRGE Woreda Office of Finance and Economic Development (WoFED) accounts at the Woreda’s on a regular basis. The executing line Ministries at federal level will receive funds for activities they directly execute. Other than this, the entire project fund will be disbursed to the Bureau of Finance and Economic Development (BOFED) in each region. The BoFED will make direct transfer to the Regional Sector Bureaus for regional level activities and to WoFEDs for activities at the local level.
77. The financial reporting follows the same channel in a reverse direction. The utilisation of funds will be monitored through an internal control framework, which depicts the funds transfer and reporting channels; it shows that funds received by a project account at the CRGE Facility are then channelled through the government structure - federal, regional and Woreda- and reported back through the same channels. The Channel One Fund Disbursement and Financial Reporting arrangement highlighted in the following diagram.



C.8. Timetable of Project/Programme Implementation

78. The implementations of the project will start in all the 22 woredas simultaneously. Nonetheless, it will follow step wise approach during the course of implementation. The first step will lay out the project implementation systems and frameworks and recruiting project staff. This will last from Q 1 to Q 6. In the second step, the project will focus on building the infrastructures identified under the project initiatives. This is planned to run from Q6 to Q16 of the project period. It is important to note that the project monitoring, supervision and follow up activities will continue during the entire project period. The third step of the project will focus on fitting electro-mechanical equipment, testing and handing over of the project results to the relevant owners as well as documenting and finalizing evaluation results. This will take place between Q16 and Q20. The main project activities, which will be executed at different stages of the project timeline, are outlined below.

Step I (Q 1 to Q 6):

- Conducting kick-off workshop and stakeholder consultation;
- Recruitment of local project implementing team;
- Inception preparation;
- Procurement of consulting companies, contractors and GPS equipment's;
- Development of tendering document
- Initiation of studies and familiarization workshops;
- Institutional set up and development of local PIM;
- Integration of CR strategy into local level plans; and
- Establishment of IWRM procedures at the Woreda level

Step II (Q 6 to Q 16):

This step of the project shall focus on building the infrastructures at the kebele (Village) level in line with the PIM that have been developed through a consultative process involving all relevant stakeholder

The works will include:

- Construction of water wells and points (boreholes, springs, ponds);
- Construction of irrigation infrastructures;
- Procurement of Electro-Mechanical equipment's including monitoring devices and installation;
- Community mobilization to rehabilitate land;
- Establishment of nurseries;
- Plant seedlings;
- Construct reservoirs, water points and stands for the Solar PV; and
- Install and configure Solar PVs and monitoring devices

Step III (Q 16 to Q 20)

The works here under will include systems that are established under this project will be checked to be mainstreamed with national level plans, strategies and procedures and are being used; gender inclusiveness is ensured; infrastructures built are tested; ensure linkages are created with surrounding projects and project results are handed over to the community and Woreda. This phase of the project shall be finalized within 12 months and shall commence 48 months after this project is commenced.

79. *Please refer to Annex X for detailed timetable of project/programme implementation*

D.1. Value Added for GCF Involvement

80. The government of Ethiopia has integrated the issues of climate change into country's mid-term development plan (GTP-II) for 2016-2020 by making climate resilience a key pillar of this plan. As indicated in the CRGE strategy and communicated in the INDC, Ethiopia requires over US\$ 150 billion to realize its vision of building a low-carbon and climate resilient middle income country status by 2025. In other words, Ethiopia should spend over US\$7.5 billion per year by 2025. This resource should be mobilized from domestic and external sources including from private sector in the form of Foreign Direct Investment, and from bilateral and multilateral sources.
81. There are several climate change mitigation and adaptation focused domestic initiatives in Ethiopia. In terms of renewable energy, the government is investing billions of dollars, which will soon increase the country's power generation capacity from 2000 MW to 10,000 MW. Ethiopia is also modernizing its transport system to reduce its carbon footprint, for example, by prioritizing electric railway infrastructure. Furthermore, the GoE and local communities are investing significantly on restoration of degraded landscapes, crop and livestock production. Since 2011, about 16 million hectares of land have received soil and water conservation interventions. On water management alone, on average 26 million people have participated annually in watershed rehabilitation activities summarized, as in-kind community contribution is equivalent to USD 1.3 billion.
82. Most of the existing ongoing initiatives are aimed at GoE priority development activities and climate mitigation actions, which provide cost recovery. However, to meet the country's adaptation needs and realize the CRGE vision, Ethiopia requires additional fund to cover costs related to enhancing climate resilience. This funding should be mobilized from bilateral and multilateral sources such as the Green Climate Fund. Without contributions from such sources, it will be very difficult for Ethiopia to realize its vision and INDC commitment. The proposed project actions represent a major element of the CRGE strategy in the water and agriculture sector and the GCF contribution will help improving reliable access to water and management of degraded landscapes that will enable adaptation to climate change, and reduce vulnerability. As the project has a strong adaptation to climate change focus, it is fully aligned with the GCF result areas on increasing resilience of most vulnerable people and communities; health and well-being, and food and water security and ecosystems and ecosystem services. It also fulfills all the GCF investment framework requirements (as described in detail in section E) and supports the target to prioritize LDC and African countries. Support from the GCF will enable Ethiopia to introduce solar PV pumps for irrigation and potable water supply while building the resilience of vulnerable communities and shift to climate compatible pathway.
83. Consideration has also been given to the options of borrowing from international development banks and tapping into capital market and foreign direct investment (FDI). LDCs are, in general, not favorably appraised in the international capital markets. FDI in Ethiopia has been limited although increasing over the years, registering \$953 million in 2013. However, the high cost of borrowing continues to be a problem. The country raised \$1 billion at a cost of 6.625% in a debut international bond issue in 2014.
84. Finally, the country's debt burden limits its access even to concessional loans provided by international and regional development banks. Over recent years, the GoE has improved its effectiveness in mobilizing revenue through tax reforms and other innovative measures. This revenue is covering development priority investments and is not enough to cover climate change adaptation measures. While private sector (local and foreign) investment undoubtedly has a role to play, some of the activities and outputs of this project have "public good" characteristics, in particular high costs of exclusion and non-rivalry, as a result of which smallholder farmers have little or no incentive in investing. This is true, for example, with respect to the small- and medium-scale irrigation schemes and knowledge and learning essential to this project. Smallholder farmers are generally risk-averse. It is only when they perceive the risk-reducing benefits of investments that they will be willing to increase expenditure as part of their strategy to cope with, and adapt to, drought and climate shocks.
85. The constraints in global initiatives that is available to fund projects that build resilience puts the GCF in a unique position as its establishment pertains in responding to climate change by investing in low-emissions and climate resilient development. The GoE recognizes the GCF as a partner to provide thrust in the momentum built in implementing its CRGE strategy and meet its global commitment. This project proposal thus picks on the common aspirations of both the GoE and the GCF in combating climate change not only at a national level but also at a global level.

D.2. Exit Strategy

86. The project has been designed to bring about sustainable transformation in the resilience of vulnerable communities to drought and increasing unpredictability of rainfall, through increasing access to water for domestic and agricultural uses, strengthening institutions and climate resilience planning and practices, conservation and management landscapes for sustainable water supply.
87. **Institutional Sustainability:** The proposed project actions are based on the GTP II, the overarching mid-term development plan of Ethiopia. This will ensure direct institutional linkage and coordination with relevant national and regional programmes (such as PSNP, Household Asset Building and others). This clear alignment with the country's strategies and plans, coupled with capacity building, will ensure that by project completion the targeted Woredas will sustain efforts in the participating Kebeles.
88. This project will be implemented through an inter-institutional coordination mechanism using existing systems and structures encompassing local, regional and federal government. The project services will also be delivered through existing government structure, which will stretch up to Kebele level and community structures. To sustain project impact beyond its implementation phase, technical support will continue to be provided by the government (federal, regional and local) as indicated in the co-financing letter submitted in *Annex IV* Woreda-level administration will be strengthened by the project to carry out integrated development planning and delivery using a gender responsive approach, and to be able to continuously provide relevant technical assistance and services to women and men within the target communities. In line with the O&M plan, some services (or project activities/interventions) will continue to be provided by community-based organizations post-project implementation, rather than by federal, regional or local governments.
89. **Financial Sustainability:** As the project is in line with the CRGE strategy and the GTP-II and embedded within the existing system, the line ministries and the regional government will continue to cover staff salary and other operational expenses after project implementation. In addition, the community in line with the by-laws developed, to access water will make an equitable monthly contribution. The payment made is a diversion of resources from what otherwise would have been allocated for the purchase of fuel, lubricants and spare parts to power diesel generators. The funds collected by the community will be used to cover costs associated with operations and maintenance of water infrastructures including solar PVs. After the completion of the project, some systems and infrastructure will be handed over to local administration or community-based organizations as appropriate. When these are handed over to local administration or community, it is this responsible organization, which largely covers the maintenance costs. A comprehensive operations and maintenance manual shall be prepared by the NIE after the signing of the agreement.
90. **Technical Sustainability:** To ensure sustainability, some of the activities will continue after the completion of the project. One factor that affects the sustainability of the installed schemes is the lack of trained and capable personnel, and involvement of women particularly in water supply infrastructures. As stated above in relation to systemic changes, the project will result in enhanced capacity of government (federal, regional and local) to provide technical support through capacity building. In addition, the project will enable integrated development planning and delivery capacity at the local level. Thus, gender responsive technical support will continue to be provided by the government (federal, regional and local) after the project period. During the life of the project, targeted beneficiaries will be trained on O&M of the project infrastructures. Pertinent infrastructure use "by-laws" will also be prepared by the project to govern the equitable use of the schemes by the community and ensure an equal representation of women in the WUA. The by-laws are also important to ensure collecting and allocating of funds for security and maintenance amongst others for the water reservoirs, solar panels, drilled wells or irrigation infrastructure.
91. In addition, the following specific strategies will be used to ensure sustainability of the project results: **Gender equality dimension:** The project mainly builds local capacities to ensure that gender standards are followed in programming and operation of the project by project implementing entities. The project seeks to create greater capacity among staff and stakeholders of local actors. To this effect, consultation will be conducted with the gender affairs units in each of the micro watershed for their gender responsive interventions and the sustainability of their actions. The capacity building component of the project will ensure that implementing entities have proper policies and implementation guides, and a gender integration checklist to be used during the project's life span. To ensure its success and sustainability, the project will provide a series of capacity development and skills training on gender within the various project components and budget lines. These interventions will be delivered by locally established training institutions and will have a transformative and long lasting impact on gender equality and women's empowerment. The training will be delivered at Farmers' Training Centres and it will include: gender analysis of climate change and its differential gender impact (for women leaders, project staff and development agents); focus groups of women for agenda setting and strategic priorities for women; leadership and assertiveness skills for women community leaders; delivery of gender responsive services for extension workers and credit service providers; These deliberate and targeted gender interventions will increase women's participation in various value chains, access to extension services and agricultural inputs, supply and market linkages. The project will promote

50/50 gender balance as a guiding principle at all levels of decision making, particularly in Kebele water management, technology selection committees and budgetary committees. The project activities will be guided by focus group discussions with women beneficiaries at Kebele and Woreda levels, at the beginning of the project and at different benchmarks. The process will help identify the differential roles and needs of men and women and the actions to be taken in the different Kebeles to support women and narrow gender gaps in all project interventions. Throughout the implementation of the project, gender-sensitive M&E tools will be used to collect information to show what worked and what did not work during the project intervention. This will build the evidence base for informed decisions related to gender equality during and beyond the project lifetime while at the same time holding implementers accountable to their commitments.

- **Reducing Barriers:** As market and community-based organizations (including women's grassroots associations, cooperatives and other groups) are strengthened they are expected to play roles in the sustainability of project results. The project will therefore ensure that barriers which have prevented these services to be provided by the market or community-based collaboration are effectively eliminated or reduced through capacity building and creation of awareness (Component 3). These barriers include information asymmetry (the fact that smallholder farmers are not well informed of risks, causes or practices and technologies of reducing risks), risk averseness (the fact that smallholder farmers will be constrained from investing because of their risk averseness), limited ability of smallholder farmers to pay, and limited supply of technologies and inputs. The project is designed with the view of effectively eliminating or reducing these barriers so that smallholder farmers will reach a stage where they are willing and able to pay for improved technologies, inputs and operations and maintenance as a result of improved purchasing power associated with increased productivity, income from the irrigation schemes and that community-based organizations and market actors are willing and able to supply. The project will help improve resilience of smallholder farmers (both men and women, including female heads of households) by improving their productivity and resource management. It will raise their resilience by also working to ensure that smallholder farmers are informed of risks, causes, adaptation strategies and alternative inputs and practices.
- **Knowledge Management and Communication:** The project will also put in place a robust and effective knowledge management and communication structure that will be integrated to the regional structure as a ground for knowledge sharing as well as the through the linkages built with the institutions and training centers . This will allow for continuous analysis and wide communication of project goals, actions and results. This is based on widely recognized experience that when beneficiaries understand the goals and results of the project, they are more willing to develop ownership and participate in on-going activities beyond the project lifecycle. The project will ensure that the beneficiaries and other stakeholders are engaged in the analyses of the activities and results of the project. Focus groups of women across Woredas will value and share women's own knowledge of their environment and their coping skills and strategies. The communities built capacity to resilience; efficacy of systems rolled out through out the Woreda, data captured and used by experts in government and research institutions and project spill overs in adjacent Woredas shall be captured, lessons learned and shared widely. The knowledge management system will ensure that lessons learned are effectively disseminated. As part of the exit strategy, and particularly to understand women's empowerment in the project, lessons learned will be documented based on focus groups that will evaluate the intended and unintended outcomes, the positive and negative impact on gender equality and women's empowerment. Women will communicate their experience via media and model the project for possible replication in other areas.
- **Technology Identification and Quality Control:** Improved technologies, inputs and practices promoted by the project are fit for purpose (*see technical evaluation in section F.2 and feasibility study in Annex II*) and have been selected after proper consultation and participation of beneficiaries including women's groups. This is one of the strategies of this project for sustainability. The quality of equipment's and infrastructures that will continue to be operational post the project's lifecycle is an important factor that determines project sustainability. Hence, the project will follow a strategy of ensuring the quality of these in accordance with government regulations regarding procurement and quality control.

In this section, the accredited entity is expected to provide a brief description of the expected performance of the proposed project/programme against each of the Fund's six investment criteria. Activity-specific sub-criteria and indicative assessment factors, which can be found in the Fund's [Investment Framework](#), should be addressed where relevant and applicable. This section should tie into any request for concessionality made in [section B.2](#).

E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

Adaptation Impact

92. The project will benefit 330,000 people directly (30 % of Female Headed Households) and 990,000 people indirectly of the most vulnerable populations of Ethiopia by improving their access to water and food, empowering women, improving health and wellbeing, improving resilience of ecosystems and the availability of ecosystem services, and introducing improved and climate-smart technologies, frameworks and instruments. In other words, the project will directly benefit 99,000 female (most of which will be heads of households) and 231,000 male. We have added the proportion of direct beneficiaries relative to the total population of the target woredas disaggregated by sex. The total population of the 22 Woredas is 2,500,297 persons (1,265,437 male and 1,234,860 female). The direct project beneficiaries represent 13.2% of the total population residing in the project target woredas. Put differently, the project will respectively benefit 4% and 9.2% of female and male out of the total population of the 22 woredas. When we compare the proportion of direct beneficiaries in the same sex group, the project will benefit 8% of all the female residents in the 22 woredas and 18% of all the male residents in the project target woredas. On average, Ethiopian Kebele's are comprised of 5,000 communities or 1,000 HH and this defines target beneficiaries per Kebele. Three adjacent Kebeles surrounding the project target kebeles with a total average population of 15,000 heads comprise the indirect beneficiaries of the project. As this funding proposal has identified 66 Kebeles, the number of direct beneficiaries will be 330,000 persons. The number of indirect beneficiaries is 990,000 people's living in 198 Kebeles. This makes the total number of direct and indirect beneficiaries 1,320,000 persons. Collectively, these results will make the communities more resilient to climate change risks. Specific adaptation impacts include the following:
93. Increased resilience of the most vulnerable people, communities as a result of:
- Directly and indirectly, the project will help approximately 1,320,000 million people become more resilient to drought and increasing variability in rainfall, which is around 10-12% of the number of people severely impacted by the drought crisis, which was experienced in 2015/16,
 - The project will bridge gender gaps and build women's capacities to play a critical role as beneficiaries and as leaders that have a voice in the project design, orientation and implementation
94. Increased resilience of health and well-being, and food and water security, as a result of:
- Increases in the amount of irrigated land,
 - Increased and more reliable access to water for personal and irrigation purposes,
 - Increased food security (decreased reliance on food aid and increase in women's food intake),
 - Reduction in malnutrition,
 - Reduced school drop-out rates
 - Increase girls' school enrollment and retention
 - Reduced domestic chores and burden on women
95. Increased resilience of ecosystems and ecosystem services:
- Rehabilitation of degraded lands through building physical and biological moisture and soil conservation structures, and
96. Strengthened institutional and regulatory systems for climate-responsive planning and development, including through:
- Increased participation in community planning (including women),
 - Adoption of tailored products for improved decision-making, and women's equal share in decision making
 - Increased capacity and responsiveness of government agencies;
 - Increased involvement of women in community based and local government institutions targeting 50/50 representation

97. The project will generate a discernible climate change adaptation impact both directly and locally through the provision of improved infrastructure, and indirectly and structurally through mainstreaming gender equality and of climate change adaptation into development plans and operations.

E.1.2. Key impact potential indicator

Provide specific numerical values for the indicators below.

| | Expected tonnes of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (Mitigation only) | Annual | |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--|
| | | Lifetime | |
| GCF core indicators | <ul style="list-style-type: none"> Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience); Number of beneficiaries relative to total population, disaggregated by sex (adaptation only) | Total = 330,000 Direct and 990,000 Indirect beneficiaries | |
| | | 0.4% direct and 1.5 % indirect beneficiaries of total population of Ethiopia) | |
| Other relevant indicators | <ol style="list-style-type: none"> 330,000 individuals with year round access to potable water supplied through low-emission energy; 1,320,000 people benefiting from the use of climate information in decision making By the end of the project 66,000 households, of which 19,800 are female headed are estimated to be food secure, have access to year round potable water supply and use climate information in decision making. <ul style="list-style-type: none"> 5,421 ha of irrigation land watered through low-emission energy 7,850 ha of land rehabilitated, out of which trees planted on 5,000 ha of land 264,000 households benefiting from climate informed decision making process 264,000 households aware of the potential impacts of climate change and range of possible responses 30% Increase in the number of children being enrolled into schools Increase in women's income and in the number of women involved in productive economic activities (comparative time use and household survey between project beneficiaries and others) in each Kebele, for M&E purposes Decrease in child mortality from water-related deaths Increased use of hydro-geological and weather data for planning by decision-makers Increased use of budgeting and tracking of climate-related expenditures at the Woreda level | | |

Describe the detailed methodology used for calculating the indicators above.

98. The total number of beneficiaries is projected based on the scale of the Outputs (i.e., as described in detailed in Section C.3), where an average family size of five per household is assumed. In Ethiopia, there are in average 1000 Households per kebele and 10 to 15 Kebeles within each Woreda. The beneficiary numbers are calculated on this basis where direct beneficiary number relates to the communities residing in the targeted Kebeles (1,000 HH X 3 Kebeles X 22 Woredas) and benefiting from the infrastructures built in addition to the structural adjustment this project will bring about at the Woreda level. Indirect beneficiaries include the communities residing under the Woredas.(1,000 HH X 12 Kebeles X 22 Woredas) and benefiting from the structural adjustments that will be implemented at the Woreda level. The additionally element that this project entails in the targeted kebeles will bring about increased adaptive capacity spill overs through out the Kebeles in in the targeted Woredas.

E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyze impact beyond a one-off project/programme investment

E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)

99. The rural economy is constrained by various factors including climate change induced drought which is the dominant shock that frequently affects rural livelihoods. Several barriers have been identified through project preparation and consultation of the stakeholders including lack of improved agricultural practices, limited access to water for both potable and productive use, environmental degradation (in the form of soil erosion), declining water supply, and limited institutional and regulatory capacity. The combined effect of these barriers leads to increased vulnerability of rural households to the adverse impacts of climate change. The project intends to address these barriers through three interrelated water-focused interventions: improved access to water, management of natural resources, and enabling environment. The inter-linkages between project components enable the resilience-building process envisaged in the project to enable farmers to increase investments, translating into higher yields, assets and incomes, and therefore improved food security and livelihoods. Note that sustainable water supply for both irrigation and potable requires effective management of water resources through soil and water conservation, afforestation and reforestation, restoration of degraded lands, etc. These activities ensure stability of water resources. Provision of climate information system help minimize adverse effects of climate change-induced hazards through monitoring water use and supply. All the above interventions need to be supported by continuous capacity building within local and national government to plan and address rural vulnerabilities in a holistic way, giving high priority to climate change impacts and other environmental concerns. These interventions would lead to increased resilience, with climate-vulnerable communities continuing to maintain and build resilience. As the project will support the implementation of GTP-II (the National 5-year Mid-term development plan), there is significant opportunities to streamline interventions and lead to paradigm shift. The GTP-II targets to increase potable water supply coverage in the rural areas to 59% by 2020 on a standard of 25 litres consumed per day (l/c/d) within 1km radius from the communities. Various rural water supply schemes including deep and shallow boreholes, gravity fed systems have been identified and costed. This project will enhance rural water supply through a piped system and pressurized systems focusing only on shallow water supply systems (max depth of 150 meters) which can be pumped using solar energy. There is potential to extend this technology to the full objective of the GTP-II, which constitutes the construction of over 3,200 rural water supply infrastructures by 2020 across Ethiopia.
100. There is potential for scaling up and replicating this project in replicating this project's success to incorporate the use of Solar PVs as opposed to the conventional Diesel powered generators. The paradigm shifting potential of this project lies in the potential of avoiding GHG emissions of 3.1 Mt Co₂Eq, avoiding the use and importation of 115 M litres of Diesel over a period of fifteen years ; and annual savings of USD 107M from the import of diesel.

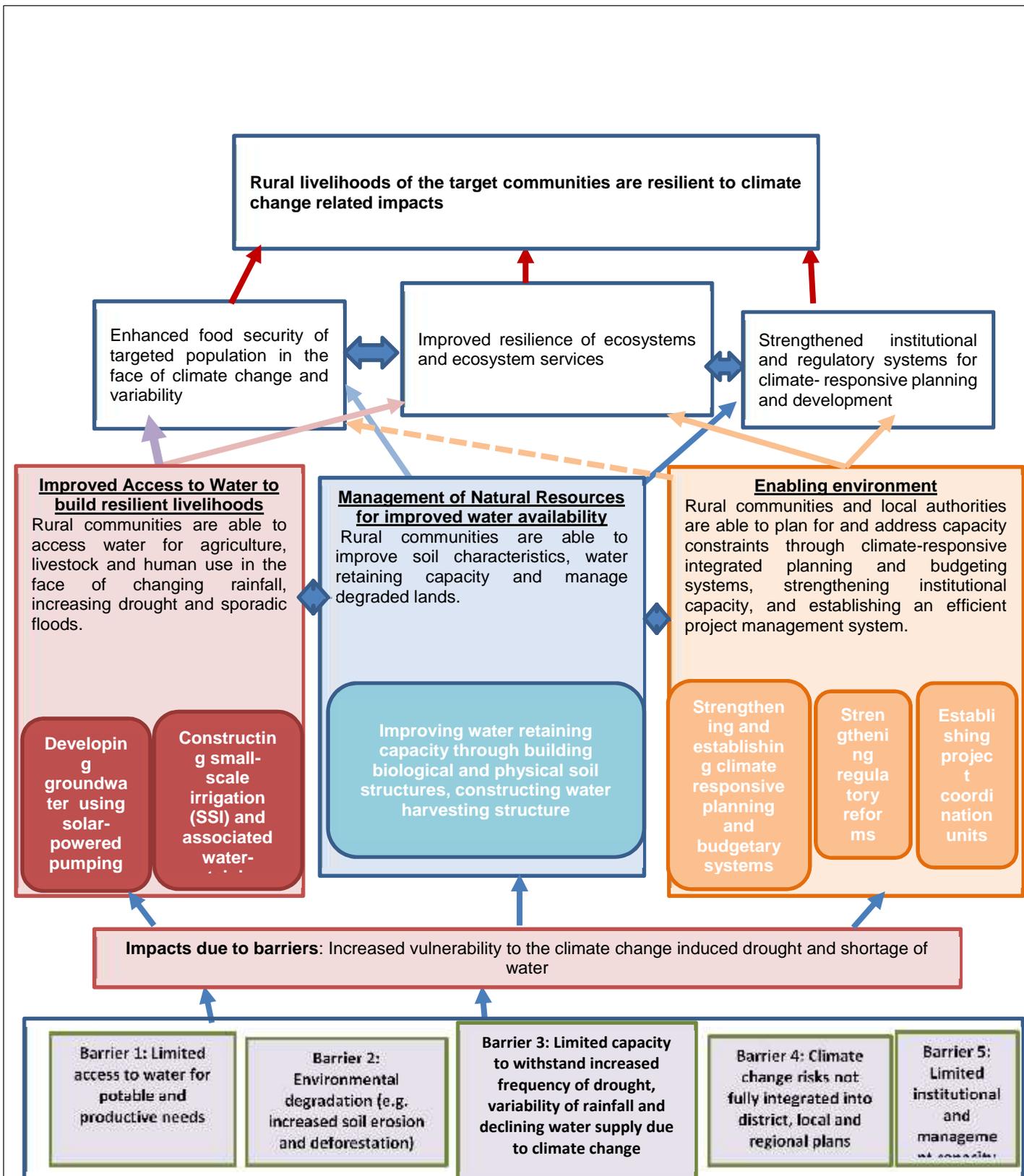


Figure 7: Project theory of change

E.2.2. Potential for knowledge and learning

101. This project will create proper links among research institutions, educators, extension workers, and local communities (Component 3) to share knowledge and innovation from the diverse activities and agro-ecological

base to adopt climate-smart agricultural practices. In line with the M&E plan of this project, this shall be the basis to establish a participatory research and knowledge-sharing systems that will help farmers and rural communities to develop, test and scale-up locally-adapted farm and land management systems. This will also create an opportunity for household members, local communities and the cooperatives to open commercial services, cottage and agro-processing industries in line with the technical support they are receiving from these institutions.

102. During implementation, the project will hire fulltime experts at federal and regional levels who will be paired with existing staff in each sector. At Kebele level, the existing Development Agents (who are on the government payroll) and one community facilitator hired by the project, will provide advisory support, technical trainings, and other extension services to project beneficiaries. The pairing of project staff with existing staff at the various levels of governance aims to foster learning and knowledge transfer for the design and implementation of future projects and programs. Early adopter of technologies and skills will also share knowledge with other communities and households. Kebeles outside the scope of this project can benefit through positive spillovers and information sharing. The annual and final evaluations will also be conducted in line with the CRGE Facility M&E Manual to capture the lessons learned from the periodic evaluations of the outcomes of project results from the various agro-ecological landscape (represented by the 22 Woredas included in the project). As a result, the GoE, the AE and even the GCF will have practical resilience building knowledge on how to apply the lessons learned from implementing this project on a variegated agro-ecological landscape to upscale and replicate the success of this project to other projects and programs.
103. The project activities will be implemented through partnerships of Government, communities and the private sector, and will thus create and strengthen institutions, community-based organizations, small business enterprises, youth and women groups, and the like. Consequently, best practices available in one region can be adapted to others. Action research in line with the project M&E plan will be integrated throughout the project, with the full engagement of communities, research and development partners, allowing their recommendations to improve future approaches. Currently lead ministries already regularly engage with academic/research institutions, and these institutional linkages will be reinforced during project implementation. In this regard, relevant development-oriented research will be conducted as per the M&E plan of this project to identify means for the creation or strengthening of knowledge, collective learning processes and institutions.

E.2.3. Contribution to the creation of an enabling environment

104. The project will contribute to the on-going efforts of the GoE in attaining the GTP-II goals and streamline the CRGE strategies at all levels. The GoE has gained tangible results in streamlining the CRGE strategy in to the local planning process at its various Woredas. However, the geographic scale of the country, the population size and the level of education and awareness of its communities on the effects of climate change has been a challenging task being faced by the GoE to implement the reform process at all Woredas.
105. To this end, the project will create an enabling environment in the targeted Woredas and build on the momentum of the on-going policy and legal reforms with respect to improving women representation at all levels, developing equitable benefit-sharing mechanisms, and establishing sustained community ownership of project results.
106. The enabling environment component of this project articulates activities to ensure that the resilient solutions such as potable water systems and irrigation infrastructures will be adopted and managed through gender balanced water management committees. IWMR procedures and practices shall be mainstreamed at the Woreda level, thus ensuring other on-going initiatives throughout the Kebeles will be aligned to the national level planning process and procedures and further ensure project sustainability. This is important as having an effective enabling environment at the Woreda level will allow for not only this project but also for other projects to be implemented in a coordinated fashion thus increasing impact, and thus creating an environment that will enable the attainment of the overarching GTP goals.

E.2.4. Contribution to regulatory framework and policies

107. This project will significantly support the implementation of the CRGE strategy at the local kebele level, and streamlining at the woreda level. This is crucial for the CRGE to achieve its objectives as it requires local and regional action that goes beyond the GoE efforts to date.
108. Ethiopia is has made significant progress in the development of national regulatory and policy frameworks to progress investment in climate-resilient development. Achievements to date include the Climate-Resilient Strategy for Water (MoWIE) as well as the One WASH National Programme. The current water resource management policy objective is to enhance and promote national efforts towards the efficient, equitable and optimal utilization of the available water resources of Ethiopia for significant socioeconomic development on a sustainable basis.
109. In this project, the establishment of PPPs, community-based organizations, women's associations and cooperatives and youth groups will help foster the development of local regulatory frameworks that encourage the

participation of cooperatives, communities and the private sector in similar initiatives, and the up-scaling of these elements of the project.

E.3. Sustainable Development Potential

Wider benefits and priorities

E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

Environmental co-benefits

Reducing CO2 Emissions –

110. Carbon emission mitigation benefits will accrue from both degraded land restoration as well as solar water pumps. The overall GHG emission reduction potential of the project is 1.142 Mt CO₂e over the project lifetime (15 Years).
111. Given that land use sectors are the largest source of GHG emissions in Ethiopia (88%)¹⁸, significant mitigation benefits will be achieved;
- In a business as usual scenario, rural water wells are fitted with diesel generators to power the submersible pump. This inherent design emits 2.64 KgCO₂ Eq for every litre of Diesel used. Activities in this project, that enhance access to water through the replacement of diesel generators by solar PV pumps will result in reducing 0.112 MtCO₂ Eq over the life of this project (15 years). The implementation of this project shall be in line with the IWRM approach and will yield additional CO₂ sequestered from the rehabilitation of land resources.
 - In the context of forests, a combination of afforestation/reforestation, management of degraded lands, to reduce deforestation will reduce an estimated 1.03 Mt CO₂e over fifteen years¹⁹.

Ecosystems and Ecosystem Services -

112. Restoring degraded 7,850 ha of land will improve the supply of ecosystem services such as the provision of water services, biodiversity as well as production of wood and fodder. The promotion of best-practices through farmer training and soil conservation practices will help reduce soil erosion and degradation, improve soil fertility through increased organic content, increase ground water recharge and increase sequestration of carbon in the soil.

Reduced noise, soil and water contamination -

113. The replacement of diesel generators with Solar powered pumps will increase the air quality, reduce the noise pollution as well as the risk of contaminating surface and subsurface soil and water with spillage of diesel and oil lubricants.

Social co-benefits

Access to Education –

114. Access to Education, mainly by girls who have been sidelined due to their socially designated task of fetching water shall be increased.

Lower cost of water supply -

115. The business as usual design of rural water supply has incorporated the use of Diesel Generators to power the pumps. These generators daily require Diesel to be purchased, and lubricants and spare parts to be changed in a periodic manner by the community.
116. The introduction of the Solar powered pumps will enable the community to shift this daily and periodic expenses incurred to power the generators to a more productive purposes such scaling up infrastructures built by this project or to increase the liquid capital of the communities association as a leverage to access more funds from the local Micro Finance Institutions (MFI).

¹⁸ The main activities responsible for GHG emissions within Ethiopia's land use sector are: livestock (42% of total national emissions), deforestation and forest degradation (37%), and agriculture (9%) (FDRE, 2015).

¹⁹ Ethiopian Forest Resources: Current Status and Future Management Options in view of Access to Carbon Finances; ECRC and UNDP 2010

117. The project will also improve the health and safety of project beneficiaries through improved availability of water, nutrition and food security, the reduced need for women to travel long distances to fetch water, and increased incomes. Increases in household income and improved access to water sources will also result in improved access to education, particularly for girls and children. This will reduce social inequality by improving the wealth and income of the most vulnerable, mostly poor women.

Economic co-benefits

118. There will be *12 contractors and 6 consultant firms, 112 guards, 112 Water Associations to sell water, creating a total direct job opportunity for 240 HH* and additional 2,000 job opportunity that will indirectly present itself through the management of communal lands and irrigation schemes and supply of parts, labour and equipment by local enterprises to the construction firms. These will improve the purchasing power of households, which will in turn drive local economies.

Foreign Currency Savings -

119. This project will bring about a foreign currency saving of USD 1.6 billion over a period of fifteen years as a result of avoiding the purchase of diesel. Furthermore, an additional foreign currency saving estimated at USD 440 million in a period of fifteen years from avoiding lubricants and spare parts is envisioned.

120. The project will reduce disaster-induced loss of crops, livestock and their distress sales. Nationally, the project will improve the foreign currency reserve through reduced spending on fertilizers, increased exports of high value, and reduced expenditure on importing food for relief and other purposes.

Gender-sensitive development impact

121. The project will ensure women's equal opportunities to participate in planning, implementation, monitoring and evaluation of the project with clearly identified gender-sensitive indicators; building the resilience of female-headed households and women in male-headed households by giving them training and technologies; and alleviating conditions that have adverse consequences on the health and safety of women in the project area. Furthermore, this project will revise existing manuals, frameworks, plans and institutional architecture at the Woreda level to be more gender responsive.

E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

122. Ethiopia is a large, landlocked and diverse country, with an area of 1.1 million km² and ranks 174 out of 186 countries in the UNDP 2016 Human Development Index. Albeit this facts, Ethiopia's economy has been growing by an average rate of 10.8% since 2004 and is committed to reach a lower middle-income status by 2025 guided by its overarching national plan, the GTP.
123. Notwithstanding such progress, there exist significant threats to Ethiopia's continued development. In particular, climate change – evident through increasing temperatures, changing rainfall patterns, and higher frequency and intensity of extreme weather events – represents an additional and major risk to the goals established by GTP-II and beyond. The anticipated impacts of climate change have the potential to hold back economic progress, or reverse the gains made in Ethiopia's development, as well as to exacerbate social problems,²⁰ as compared to a situation without climate change.
124. In the target project Woredas, the adverse impacts of climate change have been visible in the shortage of water for human beings, animals as well as for productive use. This is directly attributed to the lack of integrating climate resilient strategies, lack of integrating water resource management procedures and addressing gender issues at the local level. The main barrier identified has been capacity constraints at the Woreda and lack of educated men and women at the local level.
125. Ethiopia is a large country and the GoE is conducting a wide scale reform process to sustain the development agenda and is addressing vulnerability of its community against the shocks of Climate Change on the ground. This requires resources and capacity beyond GoE means. Albeit these actions bringing about commendable result in some Woredas, it remains to trickle down to the Woredas targeted in this project.
126. In the targeted Woredas, increasing temperatures have led to a high evapo-tranpiration rate of the surface water sources and are drying up every quickly. Erratic rainfall and degraded landmass has led to reduction in the ground water table. Lack of water resources, capacity, awareness and lack of an enabling environment has brought about the following implications in the livelihood of the targeted community;
- The distance to the nearest source of water is increasing by the year as water sources that were close to the community are drying up. This has led to increasing women's work burden and decreased the hours available for productive use as the number of hours spent collecting water is increasing;
 - Girls are assigned to the chore of collecting water. The increased distance to fetch water has led to an increased trend in girls abduction, that ends up with child marriage and exposing them to dire health and social issues. Those girls that safely make their way back to their community have to drop out of school as it takes an average of 4 – 6 hours to fetch water. This has led to an early gender gap within the community, as the numbers of educated women available within the community in later stages in life are limited. This has also been noted as the main reason why women are sidelined in the planning as well as the decision making process in the society as their education level is considered "not enough" by their male counterparts;
 - The rainfall pattern being highly erratic and unpredictable has directly exposed the farmers to a higher degree of uncertainty on when to prepare their land and when to plant their seeds. This has immensely decreased agricultural productivity not only in the targeted communities but in the nation as a whole. The targeted community being highly vulnerable are facing extreme drought situations.
 - The climate resilient strategy not being integrated into the local planning process, IWRM procedures not being practiced; poor Women's representation; and critical gap in capacity and awareness at the local level has inherently pulled the target communities from coping with the shocks of climate change.

E.4.2. Financial, economic, social and institutional needs

127. Due to high population growth, the absolute number of poor (about 25 million) has remained unchanged over the past fifteen years, despite rapid economic growth. The country's per capita GDP of US\$631 is substantially lower than the regional average of US\$1,257 and among the ten lowest worldwide Ethiopia is devoting more than half of its annual budget to investments in infrastructure and social services, including health and education. However, a large funding gap remains, analysis conducted by GoE having concluded that the additional investment needed to achieve desired levels of resilience is around \$236millionper year until 2030. This represents a budget uplift of 18%. This uplift should be seen in the context of an assumed increased spending on resilience options of almost 200% by 2030 under a baseline scenario (rising from \$0.3billion to \$0.8billion).

²⁰Overseas Development Institute (2011), *Climate Finance in Ethiopia*.

Other sources of financing

128. All alternative sources of financing have been explored and analyzed; the results of such analysis are summarized in Section D.1. Ethiopia suffers from budget deficits, which are remedied by borrowing internationally and locally. There is, however, a limit to the extent to which the country can borrow without resulting in major macroeconomic shocks. Traditional development partners already make significant contributions, many of which are complementary to/would benefit from the proposed project.

Institutional and Implementation Capacity Needs

129. Ethiopia has built strong core institutions responsible for designing sectoral policies and strategies, and overseeing their implementation, these benefitting from extensive experience in the implementation of different national and global commitments (e.g. the MDGs). The majority of project implementation will occur through existing institutional structures, effective coordination being a critical success factor. Having said this, a recent nationwide capacity needs assessment found significant capacity limitations, which the proposed project will help to address. In particular, further support is needed at the central level with respect to specific knowledge and skills in the area of MRV and building public-private partnerships. At regional and district levels, the capacity needs are more related to the tools and procedures to implement national policies and strategies. Among the main stumbling blocks is poor follow-up on training and ineffective M&E. Limitations in capacity also extend to infrastructure needed for a robust early warning system.

130. The Executing Entities (EEs) to this project have replica structures that stretch to district and Kebele (Sub-district) levels. They do have extensive experience in management and coordination of big national flagship programs and projects. The MoANR, one of the EEs, has a mandate to implement agricultural development strategies, ensuring the food security of the country. It has extensive and rich experience in managing and implementing large-scale donor and Government funded projects and programs. Apart from its project management capabilities, the Ministry has rich experience in engaging with several stakeholders and development partners for national priorities. The Ministry of Water, Irrigation and Electricity (MoWIE), has substantial accumulated experience in project and programme management. It is currently administering 72 international projects and 56 national accounts. The fast-track programme managed by MoWIE has five components/projects include: (1) Accelerating the National Biogas Program Ethiopia (NPBE); (2) Strategic support upgrading climate and hydrological information systems 3) Improving the Livelihoods and Lifestyles of Rural Communities through the Dissemination of Solar Energy Technologies; (4) Solar power for water supply and irrigation. The ministry is also implementing Energy+ funded by the Norwegian Government. There is also a National Meteorological Agency (NMA) which is an autonomous Government Agency, mandated to establish meteorological stations, monitor, produce and communicate weather and climate information, provide weather and climate services to national stakeholders, and share meteorological data in line with its international obligations. NMA has eleven Regional Meteorological Branch Directorates throughout the country, which are mandated to further tailor and communicate products within their area of responsibility as well as administer meteorological stations networks. Its data communication systems are networked through computer LAN and WAN, particularly with its eleven branch offices.

131. In spite of the strong organizational structure, experience and functional systems of the EEs, the project has incorporated organizational, system and human capacity building activities under the “Enabling Environment” component. The project will recruit dedicated staff at federal, regional and Woreda levels. It will also organize tailored trainings, workshops, etc. as well as make available tools, equipment and other facilities. The proposed capacity building actions in this project are designed to respond to the “CRGE Capacity Need Assessment” that was conducted by the MoFEC in the year 2015. The main objective of the capacity needs assessment was to understand the gaps and needs in relation to deliver the CRGE objectives and vision. The capacity needs assessment report has identified sector specific capacity development measures that are required to better understand climate change impacts, response measures and to plan, monitor and report accordingly on active Climate Change initiatives. Specifically, it has identified measures to mainstream CRGE into policy responses, attract international and domestic resources, disburse funds to priority actions and apply effective financial management to ongoing activities.

E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

132. As set out in its INDC (2015), Ethiopia's long-term goal is to ensure that adaptation to climate change is fully mainstreamed into development activities. This will reduce vulnerability and contribute to an economic growth path that is resilient to climate change and extreme weather events. Ethiopia has already undertaken several strategic and programmatic adaptation actions; these include: the NAPA (since 2007); the Ethiopian Program of Adaptation to Climate Change (2011); the development of adaptation plans for nine regional states and two city administrations; five sectoral adaptation plans; and the agriculture sector adaptation strategy. Several large-scale sustainable land and natural resource management program are ongoing, for example the Sustainable Land Management Program (SLMP) and the Productive Safety Net Program (PSNP), which both contribute to building resilience to climate change.
133. Moving towards the long-term adaptation goal, the main effort up to and beyond 2020 is to increase the resilience and reduce the vulnerability of livelihoods and landscapes in three pillars, two of which concern drought and floods. Of nine measures under the drought category and three under the flood category, six are concerned with water:
- Protect humans, wildlife and domestic animals from extreme droughts, at least to the extent that they will have water for drinking by diverting streams, digging wells and enhancing water harvesting techniques and thereby making available dependable watering points in all rural Woredas (districts);
 - Enhance irrigation systems through rainwater harvesting and conservation of water, including improved water use efficiency;
 - Ensure the uninterrupted availability of water services in urban areas to make them comfortably and productively habitable irrespective of droughts through planning and construction of dams or deep wells, deployment of water saving technologies and wastewater treatment infrastructure;
 - Enhance ecosystem health through ecological farming, sustainable land management practices and improved livestock production practices to reverse soil erosion, restore water balance, and increase vegetation cover, including drought tolerant vegetation;
 - Expand electric power generation from geothermal, wind and solar sources to minimize the adverse effects of droughts on predominantly hydroelectric energy sector.
 - Enhance the adaptive capacity of ecosystems, communities and infrastructure through an ecosystem rehabilitation approach in the highlands of Ethiopia. Rehabilitation of degraded lands/ forests will also increase resilience of communities, infrastructures and ecosystems to droughts and floods.
134. In addition, the climate resilient strategy for water (MOWIE, 2014) highlights the following strategic priorities:
- Accelerating irrigation plans, ensuring that irrigation systems are well designed and are developed in sites only where sufficient water is available;
 - Strengthening the management, co-ordination and streamlining of water resource planning, to accelerate delivery of existing plans, manage growing water demands, and ensure allocation according to the water that is available;
 - Increasing the resilience of rain fed agriculture;
 - Accelerating universal access to water and sanitation, thereby increasing climate resilience by shifting people from using exposed surface water sources to more resilient sources, and by focusing on the most vulnerable;
 - Enhancing the climate resilience of self-supply, for example by improving local water storage facilities or participatory water resource management;
 - Strengthening data systems so that they provide timely, reliable and usable data to decision makers at all levels.
135. There also close links between several of these strategic priorities and a key pillar of the climate resilient strategy for agriculture (MOA, 2014) – sustainable agriculture and land management. This strategy identifies 15 priority resilience options for immediate investment of which several fall under the sustainable agriculture and land management pillar. This pillar includes the priority option of soil and water conservation (SWC) structures (bunds, trees, grass strips, contour leveling, terraces, shade trees, waterways). This is seen as an intervention in which there is a high existing adaptation deficit and where investment therefore provides immediate benefit (MOA, 2014, page 59).
136. Ethiopia has demonstrated its determination to fight climate change nationally (notably through the CRGE strategy) as well as globally, and has already made important international adaptation commitments, including the following:
- At the global level, at the UN Summit on Forest Action Statements and Action Plans in September 2014, Ethiopia pledged to restore 15 million ha of degraded and deforested lands by 2025. This significant pledge is additional to the 7 million ha afforestation/reforestation pledge stated in the CRGE Strategy. The Government of Ethiopia has also made an international commitment to implement REDD+. The national REDD+ strategy emphasizes resilient green growth in rural Ethiopia, through productive forest landscapes,

healthy forests and productivity of land around the forests to achieve: (i) reduced GHG emissions through avoided deforestation and forest degradation and carbon sequestration through tree planting; (ii) reduced vulnerability of rural populations and the rural economy to exogenous shocks from climate risks, disasters, drought, flood and disease; and (iii) reduced level of stress on biodiversity, water and soil resources.

- Ethiopia was also the first LDC nation to submit its INDC to the UNFCCC on June 2015. Its INDC articulates committing the nation to reducing its greenhouse gas emissions from 150 megatons of carbon dioxide equivalent (Mt CO₂e) in 2010 to 145 Mt CO₂e in 2030. Ethiopia's contribution represents a 64 percent emissions reduction from business-as-usual emissions by 2030.
- At the regional level, Ethiopia is a principal actor in the New Partnership for African Development (NEPAD), whose strategic framework for pan-African socio-economic development features climate change and sustainable natural resource management as a cornerstone. The country's climate change strategy is fully aligned with the endorsements of climate change adaptation and mitigation strategies made by the African Heads of State and the Regional Economic Communities (for example, IGAD).
- Overall, the project has been designed to contribute not only to national policies such as NAPA but also regional and global initiatives. In particular, the key priority areas of NAPA include agriculture and livestock to address climate change. As a national policy, NAPA identifies list of priority activities including promoting drought/crop insurance and early drought and flood warning systems, development of small-scale irrigation and water harvesting schemes, community based sustainable use of wetland and capacity building and improved rangeland resources management practice. The project intends to develop and promote small scale irrigation, water development, natural resources management, and capacity building which are aligned to NAPA and contributes to the national policy

E.5.2. Capacity of accredited entities and executing entities to deliver

Experience and track record of the accredited entity – MOFEC

137. MOFEC has capacity and long-standing experience of overseeing financial management and programme implementation nationally. This included the implementation of climate change mitigation and adaptation initiatives valued over USD 400 million, across the six priority sectors, namely – agriculture, water and energy, forestry, buildings, industry, and transport – resulting in co-benefits for the Ethiopian population and contributing to the global goal of reducing emissions. MOFEC, through its Channel One Programmes Coordination Unit (COPCU), also directly implements other large-scale programs, such as the USD 2 billion Protection of Basic Services (PBS) and the Productive Safety Net Programmes. It also coordinates and has the oversight role on the execution of the other national flagship programs such as the SLMP, AGP, One WASH, etc. MOFEC signs the grant or loan agreement for almost all of the completed and ongoing big-national program with bilateral development partners and multilateral development banks and UN Agencies on behalf of the Government of Ethiopia.
138. The CRGE Facility was established under the MoFEC to mobilize, blend, combine and sequence domestic and international, public and private finance to support the institutional building and implementation of Ethiopia's CRGE Strategy. The CRGE Facility has principal/functional organs, including a Management Committee, Advisory Board, Technical Team and Financial Team. The Facility has adopted an Operations Manual that articulates the overall governance and implementation frameworks as well as the fiduciary standards that needs to be adhered to by executing entities and has been able to attract climate finance from Development Partners. The standards followed by the CRGE Facility comply with the requirements of donors and reflect GCF standards. Furthermore, the CRGE Facility has established and operationalized a monitoring and evaluation system including an environmental and social safeguard framework for climate change related projects and programs it supports.
139. The Facility is staffed by the MOFEC, with additional support from national and international technical advisers on request. It uses the existing Channel One fund disbursement and financial reporting systems of the MoFEC in which over 1000 Finance Officers are deployed across the nation. Fund received from the GCF will be disbursed to designated CRGE accounts of the Executing Entities at Federal level as well as CRGE accounts of the Bureau of Finance and Economic Development (BOFED) at the regions. The Federal Executing Entities will receive funds for project activities, which they directly execute such as technical support, monitoring and follow up. Other than this, all funds for project activities at Regional, Woreda and Kebele levels will be disbursed to a dedicated project account of BOFED in each region. The amount of project fund to be disbursed to federal executing entities and BOFEDs will be governed by the work and budget plan on annual basis. The BoFED will then make direct transfer to the Regional Sector Bureaus for regional level activities and to WoFEDs for activities at the kebele level. The financial reporting follows the same channel in a reverse direction (see figure 2) . Since its establishment in 2013, the CRGE Facility has been able to manage climate funds worth over USD 60 million from development partners and has successfully delivered the projects.

Experience and track record of the executing entity – MOWIE

140. The MoWIE, which is mandated for energy, water supply and irrigation projects and programmes, is currently administering 72 international and 56 national programs and projects including the one WASH program. The MOWIE has been coordinating the construction of dams, wind farm, for electricity generation. The one WASH program is being implemented by three ministries (water, education and Health) and coordinated by the Ministry of Finance and Economic Development (MoFEC). It covers about all woredas and all regions: 889 rural woredas and 144 urban woredas. Through the successful implementation of this program, Ethiopia has met the millennium development target and is moving towards universal access. The Program has a budget of \$485 million, contributed by the World Bank, AfDB, DFID, UNICEF and the Government of Ethiopia. The Ministry is well organized and has substantial experience in financial management and procurement, including financial accounting, disbursement methods and auditing of the current 128 ongoing projects its managing.
141. The CRGE fast-track programme that was also implemented by the MoWIE has five individual projects, including: (1) Accelerating the National Biogas Programme Ethiopia (NBPE); (2) Strategic support to upgrading climate and hydrological information systems; 3) Improving the Livelihoods and Lifestyles of Rural Communities through the Dissemination of Solar Energy Technologies; and (4) Solar Power for Water Supply and Irrigation; all have direct relevance to this project. The Ministry is also implementing the Energy+ initiative funded by the Norwegian Government. The MoWIE will be responsible to lead the implementation of potable water component including the development of water schemes for both irrigation and household use.

Experience and track record of the executing entity – MOANR

142. The MOANR has a wealth of experience in managing and implementing large-scale donor or Government funded projects and programmes including the Sustainable Land Management Program (SLMP), Agricultural Growth Program (AGP) Productive Safety Net (PSNP), etc. The PSNP is a component of the Ethiopian Governments' Food Security Programme, which is an essential feature of food security investments strategy for chronically food insecure Woredas of Ethiopia with the overall objective of reducing household vulnerability and improving resilience to shock. It provides such services to 318 woredas covering eight regions. The MOANR is the lead executing entity of this national program. PSNP has been financed by the Bank, the government of Ethiopia and other development partners, and has helped scale up community-led watershed management. The current phase of the PSNP covers 411 woredas and aims to reach 10 million people per year with a total budget of \$3.6 billion. The sector has a well-established field extension system, in which communities actively participate. The SLMP is also a national flagship program of the government of Ethiopia. MOANR is the lead executing entity. The objective of Sustainable Land Management Project is to reduce land degradation and improve land productivity in selected watersheds in targeted regions in Ethiopia. Currently, it is in the second phase of implementation. The first phase of SLMP, which lasted from 2010-2015, was implemented in 45 critical watersheds of six regions. The program supported a comprehensive strategic approach to improved natural resources management, which included a highly participatory identification of degradation factors and impacts, the subsequent planning and design of the most appropriate interventions, and the community-led implementation of improved practices and infrastructure. As a result, a total of 98,000 rural households (190,000 ha) benefitted from a combination of environmental and productive interventions. The second phase of SLMP, which is currently under implementation, covers 135 watersheds/woredas (including the 45 watersheds that were partially supported by SLMP-1), covering 937 kebeles in six National Regional States of the country. Direct and indirect beneficiaries of the Project include an estimated 1,850,000 people. The total budget of SLMP-II is \$107.6 million. The AGP has been under implementation by the MOANR in high agricultural potential areas of the country. The overall objective of this program is to increase agricultural productivity and commercialization of small holder farmers. AGP1 has benefitted communities in 96 woredas including through the construction of irrigation, feeder roads, footbridges and market centers, the establishment and support to farmer groups, strengthening public agricultural services, and improving smallholder farmers' access to markets. The Second Agricultural Growth Project (AGP2) operates in 157 woredas (districts) in Amhara, Oromia, SNNPR, Tigray, Benishangul-Gumuz, Gambella and Harari regional states as well as Dire Dawa city administration. The project directly benefits 1.6 million smallholder farmers, who live in areas with the highest potential for agricultural growth. The total budget of AGP-II is \$350 million. The MOANR has also successfully implemented initiatives funded by UNDP, the IMF, World Bank, African Development Bank, DFID, USAID, Irish Aid, DFATD, EU, SIDA, the Netherlands, DANIDA and WFP, among others. The MoANR will be responsible for the small scale irrigation, and management and conservation of landscapes around water sources.
143. Apart from its project/program management capabilities, the Ministry has rich experience in engaging with several stakeholders and development partners for national priorities. Some of the development partners actively

engaged include; Climate Change Forum – Ethiopia, (a National Civil Society Organization), UNDP, SG-2000, Oxfam GB and Oxfam America, WFO, FAO, JICA, GIZ, and NORAD and SIDA, ADB, World Bank and the IMF.

144. In addition to the on-going programs and projects, the MoANR is also experienced in several programmes and projects which have concluded effectively and efficiently..

E.5.3. Engagement with NDAs, civil society organizations and other relevant stakeholders

The Letter of No Objection is provided in Annex I.

145. The MOFEC, as an institution mandated for resource mobilization, and MEFC, as an NDA to the GCF and as a technical institution mandated to coordinate the delivery of the CRGE Vision, closely collaborate in a number of areas. They are the two co-chairs of the CRGE Facility Inter-ministerial Management Committee and jointly decide on funding of climate change projects and programs. The NDA and MoFEC have jointly provided training at all levels on how to develop bankable pipeline proposals, and together have appraised bankable proposals that were submitted by line Ministries. The CRGE Management Committee ensures strong country ownership by closely and regularly following the development of project proposals. They undertake joint monitoring and evaluation of CRGE Facility financed projects and programs. The NDA and AE have jointly developed a guidance book focusing on accessing and channeling of climate finance in general, and the Green Climate Fund and the Adaptation Fund in particular. They consult each other on provision of no-objection for international institutions, which have interest to mobilize climate finance from international sources on behalf of Ethiopia. The CRGE Facility governance arrangement ensures the engagement of non-state actors through the “Advisory Board”, which is comprised of representatives of development partners, private sector, academia, multilateral development partners, UN Agencies, private sector. The Advisory Board reviews and comment project and program proposals, provides advice on procedural and process related issues with no decision-making authority.

146. The project design follows a demand-driven bottom-up approach, which is well suited to climate resilience-building in Ethiopia’s rural context. This approach – in which affairs are steered by communities, have a voice in determining priorities and are actively involved in project identification, planning, development and implementation – has in the past contributed to positive results due to enhanced ownership by beneficiary communities and local authorities. This type of engagement commenced during the preparatory stages, as possible project approaches were considered and refined through stakeholder consultations on the CRGE Strategy. The project proposal was prepared by seven sectoral teams involving more than 50 experts from more than 20 leading Government institutions. It was discussed during regional and sectoral consultations to ensure national alignment on priorities, confirm initial findings, create awareness and build collaboration. The MoANR facilitated consultations with, among others: 75 participants from the regions; Government line ministries and regional and local governments; UN agencies (such as UNDP and WFP), non-government organizations (including Oxfam GB, Oxfam America); CSOs (such as Climate Change Forum Ethiopia); private companies (e.g. construction and consultancy firms); and research organizations (the Ethiopian Institute of Agricultural Research (EIAR), the Agricultural Transformation Agency (ATA), the Ethiopian Seeds Enterprise); and development partners (Climate and Development Knowledge Network (CDKN) and the Global Green Growth Institute (GGGI)). To support implementation of GCF-supported projects and other similar interventions in the future, the Agro-Meteorological Stakeholders Platform has been established.

147. In the water sector, and working with stakeholder representatives from universities, regions/local communities, Government bodies and NGOs, consultation meetings were held in five river basins, to create awareness of the importance of the envisaged approaches to water management, and to begin to build support for responsive solutions. In every river basin, a committee comprising high-level professionals of different disciplines has been established to facilitate future work.

148. During proposal development, at least two separate missions of technical experts were undertaken to each of the 22 target Woredas. This missions conducted substantive discussions with local government officials, local development partners and local communities. Engagement such as this will be sustained during project implementation, as an intrinsic part of learning and capacity building. As indicated in the theory of change, limited institutional management capacity has been identified as one of the barriers. The project intends to address this through targeted interventions including strengthen and build institutional and implementation capacity needs through various interventions such as better communication and learning strategy (e.g. database establishment), developing and strengthening human capability through tailor-made training on IWRM and climate responsive planning and budgeting, and strengthen institutional infrastructural capacity (e.g. ICT tools, operational manuals, and M&E systems) (see Section H for details).

149. Reports of stakeholders meetings including regional and federal consultations and multi-stakeholders engagement plan are available see *Annex XIV Stakeholder Consultation*.

E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

E.6.1. Cost-effectiveness and efficiency

150. Ethiopia is a Least Developed Country (LDC) with limited resources that have to be allocated to a wide range of adaptation initiatives. The proposed grant from the GCF will help promote transformative change without crowding out private and other public investment. The grant will be targeted at activities that tend to have pay-offs that fully accrue only in the long-run or which are of a 'public good' nature, and which therefore cannot be addressed by the private sector. The combination of GCF grant financing and stakeholder involvement has been designed to stimulate systemic change that can be rapidly scaled-up.
151. The costs of the activities identified are determined in a way to cover the minimum cost possible to achieve project objectives. Thus, the project is intrinsically efficient and cost-effective. As shown in section E.6.5, a comparison of total project financing with the adaptation impact the project aims to achieve suggests that a substantial amount of adaptation benefit (as well as incidental mitigation co-benefit) is expected to result from the project.
152. Activities to be undertaken by the project specifically address the climate change adaptation needs of stakeholders, who are mainly farmers and pastoralists. The Outputs involve creating awareness and capacity building as well as actual implementation of activities on the ground. Thus, they are expected to have positive effects on long-term investments to be made by the stakeholders.

E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

E.6.3. Financial viability

153. The financial rate of return has not been calculated because the benefits of the proposed activities that the Government implements (benefits such as increased production or cost savings) do not directly generate revenues to the Government. Rather, the Government is providing support to farmers, pastoralists and other agents so that these groups can adapt to climate change in addition to benefitting in other ways. Hence, only the expected economic rate of return for the project, where it is possible to estimate benefits of the proposed interventions, have been calculated for a 15-year period. The economic returns in terms of economic net present value (ENPV) and economic internal rate of return (EIRR) are briefly presented in Section F.1 below. Results of sensitivity analyses are also reported in Section F.1 below. More details for the economic analysis are shown in Annex XII and Annex XIII.
154. Without the proposed GCF contribution the project would need to be down-scaled considerably, either by reducing or eliminating some of the Activities that are integral to the longevity and sustainability of the project. Given the focus of GCF contributions on vital capital investments, it would likely not be possible to achieve the paradigm shift, as this requires the introduction of new technologies as well as practices. This in effect means that the project in the form it is proposed now would not be viable without GCF funding.

Please describe financial viability in the long run beyond the Fund intervention.

155. It is expected that the activities started in the project will continue after the GCF intervention. In particular, given that the GCF grant is used to cover investment costs, other costs will be covered after the fifth year of the project following the exit strategy indicated elsewhere in this document (*see Annex IV co-financing letter*).

E.6.4. Application of best practices

156. The overall design of this project is based on a number of best practices, in particular the Landscape Approach, Climate-Smart Agriculture (CSA) and the Livelihoods-based Approach.
157. Various investments in agriculture, forest, and water have been undertaken over years in Ethiopia. Consequently, compelling diagnostic review of existing and previous programs and projects on climate resilience and adaptation has underpinned the design of this GCF proposal. Such investments include Ethiopia's afforestation and reforestation regular programs; Sustainable Land Management programs, Agricultural Growth Programs, Productive Safety Net Program (PSNP); WASH Sector-Wide Approach and UNDP GEF projects, including Climate Information and EWS, Promoting Autonomous Community and Adaptation Project and Coping with Climate Change and Drought Projects, implemented in Ethiopia.
158. In Ethiopia, landscape approach has been experimented in different context and scale, for instance, farming system and (micro) watershed are the commonly applied approaches. Currently, however, Integrated Watershed Management (IWM), Participatory Forest Management (PFM), Integrated Water Resource Management (IWRM)

and Integrated River Basin Management (IRBM) are slowly picking up and being practiced in some sectors. In addition, ecosystem approach is followed in the protected areas management. However, there are still constraints and challenges reported with regard to collaborative planning and implementation across boundaries, sectors and actors for achieving integrated landscape management.

159. As a fundamental starting point the project will implement a gender responsive, landscape approach in the design and implementation of interventions. In this case, Kebele (sub-district) will be a landscape unit, where bio-physical, social-cultural, economic and institutions interface with each other and thereof, it is chosen as the project intervention unit. This approach is likely to successfully build women's leadership capacities from bottom up and demonstrate the investment returns of a gender focused approach.

160. Particular attention has also been given to the best ways of gathering learning and promoting innovation in an integrated manner. The project has drawn on international best and emerging practice in the design and implementation of adaptive learning and up-scaling systems for climate change adaptation. Particular reference has been made to a review of a flagship five-year climate change adaptation programme covering 49 villages in rain-fed regions of rural India, including the monitoring, evaluating and learning and up-scaling practices that supported this programme.²¹ This programme was selected as a benchmark for the following reasons: (1) its technological focus was integrative and covered a range of resilience issues (ecological restoration, health and livelihoods) as well as low-carbon community development; (2) learning practices underpinned its design and valuable lessons can be drawn from the experience of the programme in combining learning and M&E tools; and (3) up-scaling was a major focus of the programme, at district, state and national level. Two key lessons applied in the project design are: (a) the importance of taking an iterative, learning-based approach in the development of local adaptation solutions; and (b) the focus on the design of up- and out-scaling pathways from the outset of the project, again taking an iterative, learning-based approach. These lessons will help ensure the continual application and adaptation of best technologies and practices.

E.6.5. Key efficiency and effectiveness indicators

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--|
| GCF core indicators | Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (mitigation only) | |
| | 17) (a) Total project financing | |
| | (b) Requested GCF amount | |
| | 18) (c) Expected lifetime emission reductions overtime | |
| | 19) (d) Estimated cost per tCO ₂ eq (d = a / c) | |
| | 20) (e) Estimated GCF cost per tCO ₂ eqremoved (e = b / c) | |
| | <i>Please describe how the indicator values compare to the appropriate benchmarks established in a comparable context.</i> | |
| Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (mitigation only) | | |

²¹ Colvin J, Chaturvedi M, Stantchev Skeie D (2014), *External Review of the WOTR-SDC-NABARD Project: 'Climate Change Adaptation in Rain-Fed regions of Maharashtra, Madhya Pradesh and Andhra Pradesh'*. Delhi.

Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)

** The information can be drawn from the project/programme appraisal document.*

F.1. Economic and Financial Analysis

Please provide the narrative and rationale for the detailed economic and financial analysis (including the financial model, taking into consideration the information provided in [section E.6.3](#)).

The detailed economic analysis and assumptions are presented in *Annexes XII*

161. As noted in section E.6.3 an economic analysis was conducted for the proposed project. Appraisal guidelines for public sector projects prepared by MOFEC have been followed (MoFED 2004 and MoFED 2008). The Economic Analysis - *Annexes XII* shows the conclusions of the economic analysis, together with related assumptions and information.

162. Economic net present value (ENPV) is calculated using a 10% discount rate. The ENPV at a 10% discount rate for the project is USD 14,591,795 and the corresponding economic internal rate of return (EIRR) is 20%. Tests of sensitivity of the ENPV and EIRR show the following:

| | NPV (at 10%) in USD | IRR |
|------------------------------------|---------------------|-----|
| Increase in investment cost by 10% | 12,420,508 | 11% |
| Increase in operating cost by 10% | 1,303,094 | 11% |
| Decrease in total benefits by 10% | -1,158,293 | 9% |

163. This sensitivity analysis shows that economic returns are more sensitive to changes in benefits of the project compared with changes in investment costs and operating costs of the project. The lowest economic internal rate of return from this sensitivity analysis is 8%, which is lower than the 10% discount rate used for NPV calculation. However, this still implies that the project would have significant net benefits (with 9% rate of return) even when benefits are assumed to decrease by 10%. When possible overestimation of costs and underestimation of benefits discussed above are considered, the (rate of) return is expected to be larger.

164. It should be noted that, as explained in Annex XII, there are reasons to believe that net benefits of the project may be underestimated. These include:

- The period considered for the economic analysis is 15 years; the fact that infrastructure such as irrigation canals typically have an expected life of 20 years or more implies that some net benefits that accrue after 15 years are not considered and terminal value is not considered in the analysis.
- Cost estimates for the period after the fifth year of the project are assumed to be the average yearly operating costs of the project during the first five years except that 50% of the labour cost is assumed as labour requirements will be much less after the fifth year. Note also that operation and maintenance costs of capital equipment are also included. The assumption about the reduction in labour cost after year 5 is because training and labour use for construction of infrastructure for potable water supply, irrigation and rehabilitation of degraded lands is much more intensive during the five years of project implementation. While training would be completed during the first five years, labour costs after the fifth year are mainly for operation and maintenance and guarding activities (some of which are already included under the cost of operation and maintenance of capital equipment). This is likely to imply overstatement of costs as the 50% assumption mentioned above may be higher labour costs than what it could be.
- There are some benefits not captured in the economic analysis, including the economic value of different ecosystem services provided by forests and natural resource management activities such as increased groundwater recharge, reduced soil degradation and mitigation of floods on lower catchments. GHG emissions reduction from agriculture and use of solar powered pumps are also not included as benefits.

Based on the above analysis, please provide economic and financial justification (both qualitative and quantitative) for the concessionality that GCF provides, with a reference to the financial structure proposed in section B.2.

165. The GoE is contributing co-finance for the implementation of the proposed project. However, though the degree of reliance on the Fund's support varies across Outputs, the project cannot be accomplished without the Fund's support. The proposed project is expected to have a high impact when the all activities are implemented together in the project areas. Taking these points into account, and noting that Ethiopia is an LDC with very limited resources to devote to climate change adaptation, the concessionality that the GCF provides in reference to the proposed financial structure is justified.

F.2. Technical Evaluation

166. Project preparation has validated this technology package as being economically-viable, environmentally-friendly, socially-viable and cost-effective for users (in terms of operation and maintenance). The project requires investment in technology at a scale that can deliver a sustainable climate-resilient development pathway in vulnerable communities through a combination of the following technologies, tailored to local circumstances.

- Restoring/rehabilitating degraded land;
- Provision of potable water supply through solar-powered schemes for increased gender equity, and social and environmental improvement; and
- Provision of underground and surface water for small-scale PV irrigation schemes to facilitate the shift from rain-fed subsistence agriculture and to increase productivity.

167. These technologies have been assessed to be the most appropriate in view of: (i) the extent of the climate shock and its impact on vulnerable communities in Ethiopia; (ii) the experience gained from similar interventions in the past (see Section E.6.4 for an overview of selected best practices); and (iii) their consequences on ecosystems, current practices (considering in particular the inadequacy of current production techniques) and the economic context (most starkly evident through the deterioration in the living conditions of vulnerable communities). These considerations suggest that the selected technologies are the most relevant ones and, crucially, that is the combination of these that is necessary if effective economic, financial and technical responses to drought are to result in improved living conditions and increased resilience of communities.

168. At the sectoral level, the project focuses on building the resilience of agriculture and water resources. In the agriculture sector, investments in small-scale irrigation schemes will have a transformational impact on climate-vulnerable communities. Initial results show that these irrigation systems have considerable impact in terms of enhancing crop productivity and income. Investment in small-scale irrigation generates higher average income compared to rainfed systems, i.e. incomes of those farmers that used irrigation experienced higher average income compared with those under rainfed agriculture.²² Small scale irrigation also helps farmers stabilize production across years, adapt to climate change and reduce poverty and food insecurity. The effectiveness of micro schemes, which are relatively inexpensive and technically straightforward to implement, has been particularly high. To ensure sustainability of irrigation schemes, management capacity development programmes are embedded both within the user associations and within public support services.

169. The technologies required to deliver safe water and climate-smart water management schemes include Clean Energy Technology (CET), such as photovoltaic solar panels, which has the potential to simultaneously address three key global challenges of energy, poverty and climate change. CET can help not only in the reduction of GHG emissions but also promote access to energy and link sustainable energy with productive uses, small businesses and job opportunities, especially in rural areas which often are not connected to the national grid.

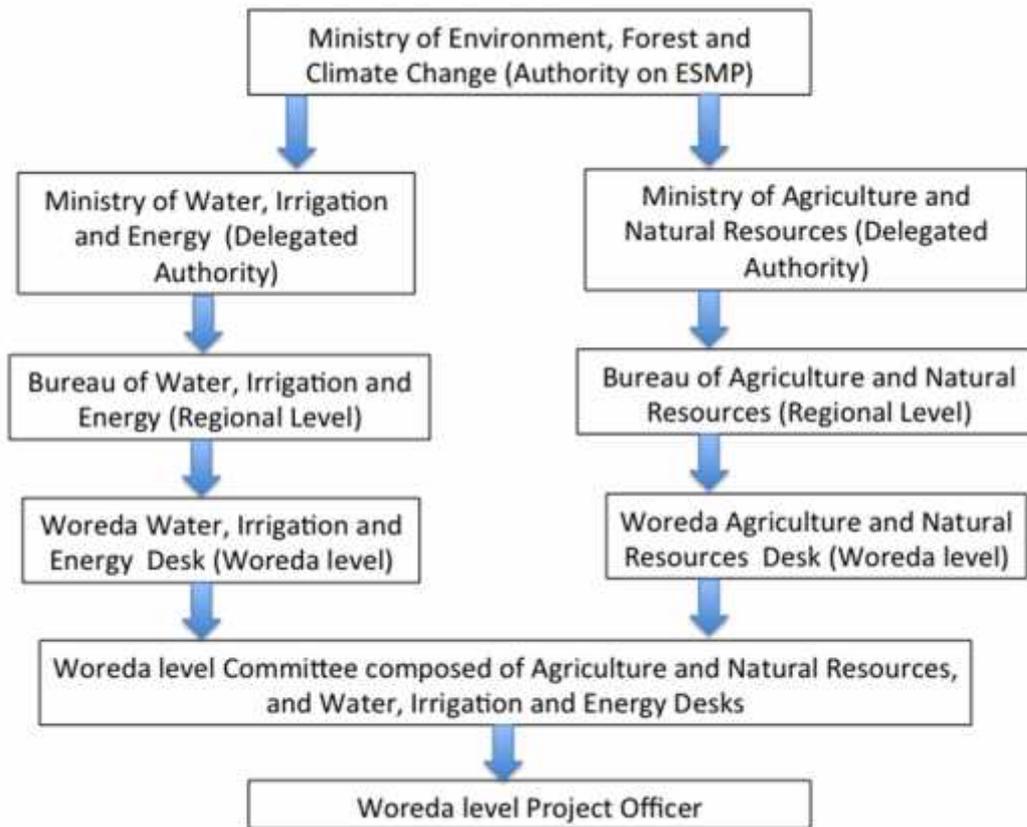
170. The project's approach of using solar energy-based technology to provide safe water for the community and also water for irrigation from the ground or the surface will replace the current trend of installing diesel-based generators. Diesel generators consume fuel, require frequent maintenance (e.g. lubricants and spare parts) and have a very short expected lifetime. Thus, the solar-driven option has been selected as the most viable in terms of financial and environmental results. The solar water pumping system has been chosen due to reduced maintenance needs compared to the conventional (diesel-based) water pumping system; as no fuel is needed, this also greatly reduces transport costs. In addition, as the targeted communities are dispersed, grid connectivity is not a viable option. Therefore, the solar pumping system is technologically and economically advantageous for the selected sites. The proposed approach is also highly sustainable, as it will continue working for relatively longer years and is economically, socially and environmentally friendly. Technical evaluation for Irrigation and potable water supply schemes has been attached as part of the *Annex II - Feasibility Study*

²² A study by Hagos et al (2009) indicates that irrigation increased average income of approximately US\$323/hectare (ha) under smallholder-managed irrigation systems compared to an average income of US\$147/ha for rainfed systems. After taking adjustment costs into account, the gross margin from irrigated agriculture would be 219.7% higher than the gross margin from rainfed agriculture.

F.3. Environmental, Social Assessment, including Gender Considerations

171. As part of the requirements of the GCF, an Environmental and Social Assessment of the Project has been conducted and an Environmental and Social Management Plan (ESMP) has been prepared in accordance with the GCF safeguard policies and the GoE policies, encompassing the legal and institutional frameworks related to environmental and social assessment *see Annex VI*.
172. The major **social benefits** of the project include:
- increased productivity of livelihoods and their capacity to adapt to climate change;
 - provision of employment opportunities to local populations, with a special focus on the needs of local youth and women);
 - provision of direct employment during the construction phase and at operational stage of sub-projects, such as pond construction, water facilities, and irrigation projects;
 - provision of indirect employment through aspects such as operation of water facilities and maintenance activities,
 - benefit to child education, in function of the reduced distance and time required to collect water, improvement of women inclusion,
 - increase health by providing adequate water supply systems,
 - increasing opportunities for high –value crop production, in promoting irrigation practice, resulting in enhancing their quality of life.
173. **Environmental benefits** of the planned conservation structures include:
- protection of soil against damage due to excessive runoff,
 - increase in yield of springs and water wells,
 - and avoidance of soil erosion.
 - Better productivity on less tilled land due to improved seeds will also contribute to soil conservation. Conservation structures are essentially environment-enhancing projects and agro-forestry provides shade to plants, conserves water and protects from soil erosion.
174. The potential adverse impacts identified include those related to:
- Biophysical impacts, including erosion, vegetation clearing, noise, and dust during the construction phase
 - Social impacts, during operation phase of the project as a result of change of land-use
175. . Appropriate mitigation measures with budget estimates are provided in the full ESMP report *see Annex VI*. In due consideration that the impacts identified are in general localized to the project implementation site and will be rectified with the implementation of the appropriate mitigation measures, the project is assessed as **Category B**. This categorization is in due recognition that the project will be conducted in food insecure, drought affects, and marginal lands and not in sensitive ecosystems (i.e. in wetlands, forests, or others). Moreover, it will have minimal adverse social impacts and impact on cultural heritage. Furthermore, the anticipated impacts will also be restricted to the project site and will not affect a broader area beyond the immediate project implementation sites. Finally, all impacts identified will be addressed through implementation of mitigation measures and there will be minimal residual impact after the implementation of the proposed mitigation measures.
176. This project does not involve expropriation of land from individuals. The essence of the project is to improve water availability to farmers, hence will make sure that water for irrigation is available for their use. Through a consultative process the project will use communal lands for community ponds and reservoirs. Communities in Ethiopia in general make use of such communal lands for such services and the project will make sure that this process is consent based. In case applicable, the Ethiopian government laws and GCF performance standards contain appropriate provisions with regards to compensation.
177. To create an enabling environment focused on building gender skills is highly relevant for the achievement of the project goals. To achieve this a Gender Action Plan was prepared separately *see Annex XV* in order to institutionalize gender responsive climate change planning, implementation, management and delivery system by: a) developing capacities for gender mainstreaming in all sectors by all stakeholders and b) establishing supportive systems and processes that sustain women’s benefits, transform gender equity and change perceptions on the gender differential impact of climate change on women. As regards to ESMP implementation governance and coordination, in Ethiopia federal line ministries have Delegation of Authority to conduct ESIA (Environmental and Social Impact Assessment) for projects under their jurisdiction, as provided to them by the Environment Protection Authority (EPA), currently Ministry of Environment Forest and Climate Change (MEFCC), which is still valid. However, since this is a cross-sectoral project that requires engagement of both the water and irrigation, and agriculture and natural resources sector – the Ministry of Environment, Forest and Climate Change will have a prominent role, while both the Ministry of Agriculture and Natural Resources, and Ministry of Water, Irrigation and Energy will play an important role as delegated authorities in their areas of their mandate. The Figure below

provides a schematic diagram of the institutional arrangement for ESMP implementation. Picture depicting the ESMP implementation and coordination arrangement is provided below.



178. In the context of the project, the ME FCC directorate General for Environmental and Social Impact Assessment and Licensing will be responsible for the project-level grievance redress mechanism. The contract details of the focal person responsible is:

Shiferaw Negash (Mr.),
Director General,
Environmental and Social Impact Assessment and Licensing,
Ministry of Environment, Forest and Climate Change
Email – shifeabbagada@gmail.com
Telephone: +251911936802

F.4. Financial Management and Procurement

179. The financial management and procurement of this project will be guided by the public finance management and public procurement regulations of the Government of the Federal Democratic Republic of Ethiopia. Project finance will be transferred to the MOFEC in accordance with the financial disbursement arrangement defined for the CRGE Facility, which is consistent with the Channel One fund flow arrangement. The Treasury Directorate of MOFEC is responsible for opening and closing of accounts for all public institutions at the National Bank of Ethiopia. The CRGE Facility account, into which the GCF fund will be deposited, is opened in the Name of MOFEC and the day to day management of the account will be done by the Head of the Facility and of COPCU. After receiving funds from GCF, the Facility will transfer the necessary amounts to the Federal Executing Entities from the CRGE Facility National Account for activities, which will be implemented by the Federal Executing Entity directly. For regional executing entities, which are sector bureaus, funds will be transferred to the respective BoFEDs on a regular basis. The project finance will be subject to the financial regulations and management including auditing by

an independent auditor in line with Auditors General requirements of the Government of Ethiopia. The OFAG adopts international standards on Auditing and financial reporting, which will also apply to this project.

180. Project finance will be disbursed to the executing entities based on approved quarterly Work Plans. Subsequent disbursements will be made based on satisfactory (not less than 75%) settlement of previous advances. The CRGE Facility Finance Officer will clear this before disbursement processing and sending letter of transfer request to the National Bank of Ethiopia. The utilization of funds will be monitored through an internal control framework illustrated under section 7, which depicts the fund transfer and reporting channels; it shows that funds received by MOFEC in the CRGE Facility are channeled through the Government structure – federal, regional and Woreda – and reported back through the same channels. The Channel One Fund Flow Arrangement is staffed by over 1,000 finance professionals, who will be responsible for fiduciary assurance and facilitation of reporting.

Procurement Management (PM)

181. Detailed annual Project Procurement Plans will be prepared by the Executing Entities and submitted to Public Procurement and Property Administration Agency (PPPAA). The Public Procurement and Property Administration regulation and directives of the government will be applied for any type of procurement including goods, work and services. The different methods of procurement, the conditions to be met to use anyone of the methods, (including thresholds) and the procedures to be followed will be paid due attention. Depending on the threshold, volume and type, procurement could be conducted by the Executing entities at federal, regional and woreda levels. The PPPA however ensures that the procurement policies and procedures are respected and strictly followed at all times by all public institutions. For bulk Procurement of goods and services the EEs can request the services of the Federal PPPAA and the PPPAA will procure using agency specific rules and regulations. The EEs entities implementing this project are public bodies whose procurement activities shall be subject to procurement audit by PPPAA. The PPPAA is an entity under MoFEC established under proclamation No. 649, with a mandate to conduct federal public procurement in line with the Federal Public Procurement Directive²³ The procurement plans submitted by the EE's shall be effected by the PPPAA at the federal level and in line with the directive issued to ensure the procurement of goods and services is based on the value-for-money principle and guided by competitive bidding. The directive has a standardized International and national bidding documents to ensure a uniform and competitive bidding process is followed. Price, quality, delivery time and procurement feasibility shall determine the procurement source, modality and delivery mode of required equipment and associated supplies.

²³ Federal Public Procurement Directive, MoFEC 2010

G.1. Risk Assessment Summary

182. Available research²⁴ shows that effective risk assessment should consider the following:

- Category 1: Preventable Risks – internal risks that are controllable or avoidable, and that ought to be eliminated or avoided. This risk category is best managed through active prevention: monitoring operational processes and guiding people's behaviours and decisions toward desired norms;
- Category 2: Strategy Risks, which are different from preventable risks because they are not inherently undesirable. These represent the risks inherent in the project in order to achieve the transformative results being sought. This category needs a risk-management system designed to reduce the probability that the assumed risks actually materialize and to improve the ability to manage or contain the risk events should they occur; and
- Category 3: External Risks, arising from events outside the project and beyond its influence or control. Sources of these risks include natural and political disasters and major macroeconomic shifts. Because such risks cannot be prevented from occurring, their management must focus on rapid identification and mitigation of their impact.

183. By applying this approach, the risk assessment has concluded that the proposed project is **medium risk**. This is considered a tolerable risk, given the ambitious nature of the project; low risk would imply an inadequate level of innovation.

184. Eight specific risk factors have been identified, four each from the Preventable and Strategic risk categories²⁵. Half of these eight factors are assessed as having high risk, in that their occurrence would have major impact on project results. However, for three of the four preventable risks (which focus on the financial, technical and operational, social and environmental and similar risks that might prevent the project objectives from being achieved), the likelihood of these occurring is assessed to be low (with "Inadequate operational capacity to support the introduction of the proposed project approaches" being assessed as medium probability), this largely reflects the range of risk management and mitigation methods in place. Accordingly, with respect to "preventable" factors, the project is assessed to be low risk.

185. By comparison, the majority of the strategic risk factors have been assessed as having a medium likelihood of occurrence. Ultimately, the project seeks to achieve sustainable behavioural change. For this to happen, there is a need to have a shared understanding of the medium and long-term benefits of the project among target communities, private enterprises, NGOs and public bodies to participate, contribute, learn and adapt in the ways that are envisaged. If they do not, then the risk is that new technologies and practices may not be adopted, new support infrastructure does not develop, and new rules and regulations are not introduced. In addition, if climate change-induced disaster worsens in the target communities, there is very little scope that vulnerable people will be encouraged to think beyond their immediate survival activities. This also affects government's resources allocation from investments to emergency responses. For the project to achieve its intended objective of bringing sustainable changes in the target communities, there is a need to address disaster responses so that the project interventions will support government's efforts through building the resilience of the communities by focusing on long-term solutions. In addition, the history of drought-induced vulnerabilities in the target communities requires synergies and sustainable changes in the livelihood interventions. In this regard, the project is assessed to be medium risk for the majority of strategic risk factors, reflecting efforts taken to mitigate the identified risks, including the application of lessons-learned from the considerable body of relevant past experience, which among other things demonstrates the critical importance of using fully-participative approaches that help all stakeholders to incrementally adapt solutions based on a common understanding of the challenges encountered..

G.2. Risk Factors and Mitigation Measures

Please describe financial, technical and operational, social and environmental and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures.

Selected Risk Factor 1

²⁴Reference is made in particular to the article 'Managing Risks: a New Framework', by R. S. Kaplan and A. Mikes, published in *Harvard Business Review*, June 2012.

²⁵ While the assessment includes identification of External Risks, as these are beyond the project's direct control or influence, they have not been addressed in the mitigation measures described in Section G.2.

| Description | Risk category | Level of risk | Probability of risk occurring |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-------------------------------|
| Insufficient availability of necessary financial resources | Preventable, financial risk | High | Low |
| Mitigation Measure(s) | | | |
| <p>186. Initial mitigation of risk has been achieved through detailed project design and planning, and related financial forecasting and modelling, including identifying what local stakeholders can contribute and how the GCF can best add value. While the risk that this factor represents to project success is high, the likelihood of its occurrence has been reduced. This reduction has been reinforced through the collaborative planning process that has been adopted, which has built the commitment of the relevant stakeholders to mobilize resources in support of the project, and in particular in relation to operational items. With the GCF finance, relevant stakeholders have expressed to their commitment as expressed by allocating resources (e.g. human and other resources) to implement and manage project activities. Given that GCF support targets towards capital expenditures, this should ensure the sustainability of developed solutions. Detailed monitoring of the utilization of financial resources against plan and projected results is a priority of the project management system, which will further help reduce the risk of inadequate resources being available, or that they are used inappropriately or with sub-optimal effect. The Ethiopian government has established a system regarding the use of public finance by sector ministries. Such systems include Office of Federal Audit General, responsible for evaluating public institutions regarding their use of public finance and the office reports to the Office of the Prime Minister and House of Representatives, the highest law makers in the country. Each sector ministries is under strict scrutiny by this office. In addition, there is Anti-Corruption Commission (with its branch offices in public institutions) which is responsible for controlling improper use of public resources including abuse of leadership. In addition, sector ministries have internal audit system to ensure that public resources are used properly according to the country's public finance management systems. These systems help report any breach of rules and abuse of resources.</p> | | | |
| Selected Risk Factor 2 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| Inability of communities to successfully adopt new technologies | Preventable, technical risk | Medium | Low |
| Mitigation Measure(s) | | | |
| <p>187. For resilience building to be feasible, it is essential that communities are able to successfully adopt the new technologies and associated practices; this factor therefore carries a medium level of risk. However, the proposed technologies have been proven (in other programmes in Ethiopia or elsewhere) and their appropriateness has been established. There remains the risk of a reluctance to adopt them (which is part of the strategic risk associated with bringing about systemic change), but this will be addressed through the high levels of support that the project intends to provide during their introduction, including in training that targets women beneficiaries in particular and developing the abilities of new users, and helping them to gain maximum benefit from their utilization. Given the desperate situation that many targeted communities face, the reluctance to try new approaches is expected to be relatively low, the training and development therefore representing the key mitigation measure that will be required.</p> | | | |
| Selected Risk Factor 3 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| Inadequate operational capacity to support the introduction of the proposed project approaches | Preventable, operational risk | Medium | Medium |
| Mitigation Measure(s) | | | |
| <p>188. Ultimately, the project aims to build the resilience and adaptive capacity of men and women in the targeted communities. Nevertheless, it is appreciated that these communities will be heavily dependent on the additional capacity that the project will provide including skills and leadership training for women in order to address the severe challenges they face and build a sustainable development path. The required operational capacity has been identified through project design and planning, and the various institutions involved have committed to provide the support essential to success. Each of the sectors will be fully represented by the relevant line ministries. The risk of this capacity not being available is considered low, given that all project plans are clearly aligned with the evolving strategies of the relevant line ministries, which in turn are clearly aligned with national priorities. The levels of support required will be continually monitored and adjusted through the project's M&E system. In the unlikely event</p> | | | |

of capacity gaps arising, these will be addressed through the cross-sectoral project governance system, reflecting the shared responsibility for the success of the project.

Selected Risk Factor 4

| Description | Risk category | Level of risk | Probability of risk occurring |
|---------------------------------------------------------------------------|-------------------------------|---------------|-------------------------------|
| The proposed approaches to resilience building are found to be unfeasible | Preventable, operational risk | Medium | Low |

Mitigation Measure(s)

189. Building sustainable resilience and livelihood capacity is unlikely to be easy. The project has addressed this risk through a number of design strategies. The first is the integration of a variety of natural resource management approaches that, introduced in a coherent and adaptive way, have the potential to move people away from traditional methods and to create increasing demand for the new products and services being offered. The second is the rigorous approach to selection of participating communities, which ensures that the viability of the approaches has at the outset been validated in the local contexts. During project execution, action learning mechanisms will help share information across participating communities so that the best ways of addressing specific implementation challenges can be developed and applied as appropriate.

Selected Risk Factor 5

| Description | Risk category | Level of risk | Probability of risk occurring |
|----------------------------------------------------------------------|------------------------|---------------|-------------------------------|
| Communities fail to respond to the dangers brought by climate change | Strategic, social risk | High | Medium |

Mitigation Measure(s)

190. At the heart of adaptation lies the need to raise community awareness of their vulnerability to climate change. The severity of the situation in the targeted communities should provide initial impetus for change. This will be reinforced by initiatives designed to raise awareness of, and improve access to, relevant information for the men and women in the targeted communities. At the outset, this will be used to show what options should be considered and to then guide people along the appropriate adaptation routes. Over time, the project will introduce participative mechanisms for review and use early warning and other relevant information to modify plans, in the process empowering communities, women and youth and individuals to continually adapt in the face of changing circumstances. The aim of the project is to complement disaster response efforts, building on any initial recoveries to add sustainable capacity to continually adapt through realistic livelihood improvement strategies. While this is considered to be the optimum response, two factors remain outside the direct influence of the project, namely the extent and impact of the drought, and the resources made available to the disaster response. These have to be taken into consideration when assessing the probability of the risk occurring. If the drought conditions worsen and continue as was the case in the last two years, then it may become more difficult to channel efforts towards longer-term sustainable change as communities and other stakeholders focus on short-term survival mechanisms making it difficult to induce target communities to think about longer-term solutions in the face of severe droughts. Similarly, if Ethiopia is unable to attract necessary external assistance for the disaster and humanitarian response, the ability of this project to bring about sustainable change may be severely compromised. To some extent, this project hopes to strengthen the country's ability to attract the external assistance it urgently requires, by demonstrating a vision for, and commitment to, more transformative change that will reduce the likelihood of the future incidence of such emergencies. Note also that this project will support the government in its effort to tackle two resource competing activities: development and humanitarian interventions. In the face of drought, the government often tends to focus on addressing disaster responses by shifting resources away from investments, while the project will fill the gap in building long-term responses in the target communities, thereby ensuring complementarities between short-term responses and long-term interventions to address climate change-induced droughts and disasters. The likelihood occurrence of this risk is low as the country has been able to mobilize both domestic (budgetary) and external resources for emergency and humanitarian assistance for drought affected communities in the last couple of years.

Selected Risk Factor 6

| Description | Risk category | Level of risk | Probability of risk occurring |
|-------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-------------------------------|
| Institutions fail to build the new capacities/adopt the new planning approaches that will be required | Strategic, institutional risk | Medium | Medium |

| Mitigation Measure(s) | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-------------------------------|
| <p>191. While, ultimately, this project intends to build the resilience of the participating communities, it is essential that an institutional framework able to continually support community efforts emerges in parallel. Creation of such sustainable institutional capacity has been beyond other such initiatives for a variety of reasons, including, but not limited to, resistance to change, protection of vested interests in the status quo, gender bias, and the creation of unsustainable cost structures. This risk will be mitigated by applying the lessons learned from the considerable body of relevant past experience, which, among other things, demonstrates the critical importance of using fully participative and gender responsive approaches. In this case, it is known that there is a significant demand for change, given the necessary resources and support. By bringing together an array of stakeholders including women's groups in participatory processes, the momentum for change will be increased, and the risk of these becoming challenged will be reduced. By working with existing institutions, and concentrating GCF funds on capital expenditures, the risk of building unsustainable cost structures will be avoided. At the outset, existing organizations (including Government institutions at national, regional and local levels) will assume responsibility for delivery, while being supported by the project to continually collaborate and seek the integrated solutions needed in the future. It is through this facilitation of the collaboration of existing institutions that the project will manage this risk and contribute to its ultimate success.</p> | | | |
| Selected Risk Factor 7 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| Necessary improvements to rules and regulations are not introduced | Strategic, institutional risk | Medium | Medium |
| Mitigation Measure(s) | | | |
| <p>192. Appropriate rules and regulations are vital parts of the enabling environment. The fact that such rules and regulations do not already exist indicate a risk that there is either a lack of understanding of, or a reluctance to introduce, what is required in the context of the development of a climate-resilient economy. Preparatory work indicates that the problem is uncertainty as to what steps should be taken to create an appropriate enabling environment, and a need for support in finding the answers. The project has been designed to deliver such support. Given alignment with national priorities, there is impetus for the introduction of appropriate solutions. Where difficulties are encountered in introducing necessary changes, the cross-sectoral project governance mechanisms will provide a forum in which the nature of obstacles can be determined and political solutions can be engineered.</p> | | | |
| Selected Risk Factor 8 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| The project governance mechanisms fail to bring about the necessary collaborative work and/or the new institutional systems for climate-responsive planning and development | Strategic, institutional risk | High | Medium |
| Mitigation Measure(s) | | | |
| <p>193. A key element of the project's innovation is the participative planning that will bring about cross-sectoral integration. This innovation implies the need to try new things, which in turn suggests there is a risk these approaches will not work in practice. If this were to prove the case, it would undermine the fundamental aim of the project to bring about and institutionalize new systems for climate-responsive planning and development. This is a risk that has been confronted through the preparatory work, as the sectors have worked together to design the project as well as the collaborative management systems that are to be employed. Again, given the alignment of the project's aims with national priorities, there is a momentum and appetite for the kind of climate-responsive management systems that the CRGE strategy has helped envisage. Again, should difficulties be encountered in introducing necessary changes, the cross-sectoral project governance mechanisms will provide a forum in which the nature of obstacles can be determined and political solutions can be conceived. At the highest level, guidance will be provided to implementing entities on cross-sectoral project governance and synergies through the CRGE Secretariat where implementing entities are members of the Secretariat. This is expected to minimize the likelihood of occurrence of silo approach in climate-responsive planning and development across implementing entities.</p> | | | |
| Selected Risk Factor 9 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |

| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|-------------------------------|
| Irrigation structures, water schemes and other infrastructures might not be properly and timely maintained or fixed | Technical risk | High | Medium |
| Mitigation Measure(s) | | | |
| <p>194. Communities will be adequately familiarized with irrigation technologies, which will be introduced by the project. Operation and maintenance training manual will be prepared in the local language and training will be given to project beneficiaries through Farmers Training Centers (FTC). Furthermore, women will be involved in decision making regarding appropriate technologies and they will take part as key-members and leaders in water committees formed for the operation and maintenance of their water and irrigation schemes. Farmer Organizations (FO) that have been established to manage water supply systems through the formation of a water committee and that make valuable contribution to planning, improving, upgrading and maintenance of water supply and irrigation schemes, will include women leaders and receive training on operation and maintenance of facilities and financial management. Use of indigenous knowledge and women's contributions to water provision will be an integral part that will be aligned with the organizational and management aspects of the schemes. Water User Associations (WUAs) will have equal numbers of men and women to take charge of the implementation process and own the process so the WUA will be responsible for the continuing O&M of the schemes when they have been completed. Periodically, Woreda experts, Development Agents (DAs) and farmers will receive training of trainers so O&M knowledge is inherited and practice sustained after project closure.</p> | | | |
| Selected Risk Factor 10 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| The project involves procurement of technologies, goods, equipment and services from domestic and international markets. Hence there might be delays in procurement processes, supply of items, and other malpractices in procurement management. | Strategic, Financial risk | High | Medium |
| Mitigation Measure(s) | | | |
| <p>195. The Ministry of Finance and Economic Cooperation (MoFEC) is mandated to ensure that public finance management is being practiced across public institutions. Each public institution is required to follow and abide by the public finance rules of the country including the procurements. Given that this project is going to be implemented by sector ministries, they are required to respect the overall public financial management (e.g. Financial Management Proclamation No.970/2008 EC) and procurement and property administration guideline (e.g. Procurement and Property Administration No. 648/2009 EC). As an accredited entity MoFEC has significant experience with domestic and international procurement and strong relationships with the Federal Public Procurement and Property Administration Agency (PPA), which is responsible for management of national and international procurement activities of public institutions. To ensure uniformity and accountability, sector ministries have procurement units or directorates, which undertake procurement of goods and services according to the procurement guideline. In addition, each sector ministries have internal audit units/directorates to enforce relevant finance and procurement guidelines are respected. As required by the public finance management guideline of MoFEC, sector ministries are required to prepare and submit performance reports including physical and financial utilization to MoFEC which will be subject to critical review and evaluation by MoFEC. The procurement directorate of MoFEC will actively engage with PPA and the procurement units/ or directorate of the implementing entities. Thus, two issues are worth noting. First, procurement capacity building trainings will be also organized. Specifically, project implementing entities will be given prior training on financial and procurement modalities with a focus on this project. Second, procurement planning will be prepared and executed at all levels together with procurement units/or directorates of implementing ministries.</p> | | | |
| Selected Risk Factor 11 | | | |
| Description | Risk category | Level of risk | Probability of risk occurring |
| The successful implementation of the project seeks engagement of various stakeholders and actors at federal, regional, Woreda and Kebele level. Lack of strong coordination arrangement will hamper the success of the project | Strategic, institutional risk | Medium | Low |

| Mitigation Measure(s) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>196. MoFEC is the implementing partner of this project. It has rich experience of coordinating various national flagship programs and projects. The CRGE Facility, under MOFEC will be responsible for the overall coordination of the project. The Facility secretariat, in addition to its existing staff, will hire relevant experts (preferably a gender trainer/expert) who will coordinate the project. The CRGE Facility Management Committee (which is comprised of State Ministers from the two project delivery ministries) will also serve as Steering Committee of this project. MOFEC will ensure that the two line ministries (MOANR, and MOWIE,) will establish Project Coordination Unit (PCU), which will be responsible for the overall coordination and leadership of sector-specific activities. The line ministries in turn will ensure the establishment of similar coordination arrangement at regional and district level. Bureau of Finance and Economic Development (BOFED) and Office of Finance and Economic Development (WOFED) will respectively play the overall coordination of the project at regional and Woreda levels. In this connection, adequate budget is allocated for recruitment of project staff at federal, regional and Woreda levels including gender experts.</p> |
| Other Potential Risks in the Horizon |
| <p>197. The likely emerging risks have been addressed through the risk analysis. Methodologically, the key to effective risk management will be the high degree of stakeholder participation that ensures the project can learn and adapt to circumstance as implementation progresses.</p> |

** Please expand this sub-section when needed to address all potential material and relevant risks.*

Please specify the logic framework in accordance with the GCF's [Performance Measurement Framework](#) under the [Results Management Framework](#).

| H.1.1. Paradigm Shift Objectives and Impacts at the Fund level | | | | | | |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paradigm shift objectives | | | | | | |
| <i>Increased climate resilience of population, environment and economy to the adverse impacts of climate change</i> | <ul style="list-style-type: none"> Year round availability food and water for homestead use and agriculture during times of drought Reduced loss of livestock and other assets during times of drought; Restoration of the natural habitat No school drop-out of girls and children due to drought induced shortage of food and water; Improved representation of women in decision making positions, The extent to which communities and local administration practices climate smart planning process | | | | | |
| Expected Result | Indicator | Means of Verification (MoV) | Baseline | Target | | Assumptions |
| | | | | Mid-term (if applicable) | Final | |
| Fund-level impacts | | | | | | |
| <i>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions</i> | Extent to which lives and livelihoods of the most vulnerable groups are enhanced and made more resilient to climate related hazards in the geographic area that can be attributed to GCF intervention. | Monitoring and evaluation reports, Survey report | 0 | 99,000 direct male and female beneficiaries demonstrating improvements in both adaptive capacity & livelihood productivity | 330,000 direct (out of which 99,000 female) beneficiaries demonstrating improvements in both adaptive capacity & livelihood productivity | Disaggregated at project/programme level by vulnerable group. Vulnerable groups can include women, children, elderly and disabled individuals. This indicator is envisioned to be measured in the form of an index, composed by a set of sub-indicators. The methodologies, to be developed, can be informed by similar indicators adopted by AF, LDCF/SCCF, PPCR, GIZ and ICF among others. Sub indicators composing this index would look at specific aspects of what constitute resilience and well-being such as access (to services and resources), reduced risk of losses (economic, health, lives, etc.) and enhanced |

| | | | | | | |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | production/productivity (in agriculture, livestock, and other economic activities) |
| | Change in expected losses of livelihoods and economic assets due to the climate change induced drought in the project intervention areas | | Baseline data will be determined by the project commencement | Over USD 12 million worth of livelihood and economic assets loss saved | Over USD 23 million worth of livelihood and economic assets loss saved | |
| | Number of males and females with year-round access to reliable and safe water supply despite climate shocks and stresses | Household surveys; Monitoring and evaluation reports | 12,500 Male and Female | 251,829 male and female beneficiaries (M= 128431 F= 123,398) | 330,000 male and female beneficiaries | The livelihood and climate information system and services fully sustains at grassroots levels Smooth handover of project deliverables and materials to the communities and regions ensured to sustain achieved changes and manage the overall project risks |
| <i>Improved resilience of ecosystems and ecosystem services</i> | Coverage of degraded lands managed and protected in response to climate variability and change | Periodic surveys, terminal evaluation report | 1,200 ha of restored degraded land | 1,570 ha of degraded land protected & managed and 1000 ha of land planted with trees | 7,850 ha of degraded land protected & managed out of which 5,000 ha planted with trees | |
| <i>A3.0 Increased resilience of infrastructure and the built environment to climate change threats</i> | Number of physical assets constructed or modified to increase resilience to climate variability and change | Supervision and monitoring and evaluation, surveys, | 0 drilled wells using solar energy 13 BH operated by diesel generators, 26 hand dug wells 0 springs ²⁶ 15 reservoirs | 112 drilled wells (82 deep and 30 shallow) and 80 hand dug wells, 30 springs and 31 community ponds built, 70 water reservoirs, 60 water points | 112 drilled wells and 80 hand dug wells, 30 springs, 31 community ponds, 150 water reservoirs, 140 water points | Assets will be disaggregated by sector, type of asset, action (constructed or strengthened). The methodology will delineate an assessment of the extent and quality of the constructed/modified asset depending on asset type (Coastal erosion defenses constructed to withstand impacts of climate change (km); Road constructed to withstand impacts of climate change (km)). |

²⁶ The feasibility study identified 309 springs outcrops which can be developed

| | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | 15 water points | | | |
| Project Outcomes | | | | | | |
| <i>A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development</i> | Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation | Annual plans, Project periodic reports, Monitoring and Evaluation reports | 0 | 22 Woredas, 9 regional bureaus practice integrated and participatory planning, implementation and M&E in a coordinated manner. | 22 Woredas, 9 regional bureaus and practice integrated and participatory planning, implementation and M&E in a coordinated manner. | Government enforces integrated approaches to project implementation. This covers both the vertical institutional integration and horizontal sectoral synergies of project planning and implementation. There is also a systemic platform that readily avails climate information at all levels. |
| | Number and level of effective coordination mechanisms and synergy at the national and regional levels, including between and among relevant sector ministries | Annual plans, Project periodic reports, Monitoring and Evaluation reports | 0 | 22 Woredas, 9 regional bureaus practice synergetic coordination in climate smart planning at local level. | 22 Woredas, 9 regional bureaus and 5 sectors practice synergetic coordination in climate smart planning at local level | Government enforces integrated approaches to project implementation. This covers both the vertical institutional integration and horizontal sectoral synergies of project planning and implementation. There is also a systemic platform that readily avails climate information at all levels. |
| <i>A8.0 Strengthened awareness of climate threats and risk-reduction processes and regulatory systems for climate-responsive planning and development</i> | Number of males and females made aware of climate threats and related appropriate responses | Monitoring and evaluation reports | 0 | 129,360 men & 134,640 women directly benefit from the project in the 22 target Woredas | 646,800 men & 673,200 women directly benefit from the project in the 22 target Woredas | The community is willing to make use of climate information provided |
| <i>Improved resilience of ecosystems and ecosystem services</i> | Hectare of land rehabilitated or existing forest protected around the water sources and water points | Periodic surveys, terminal evaluation report | 260, 343 ha of degraded land | 1,570 ha of degraded land protected & managed and 1000 ha of land planted with trees | 7,850 ha of degraded land protected & managed out of which 5,000 ha planted with trees | |
| Project outputs | | | | | | |
| Component 1 | Improved access to water to build resilient livelihoods | | | | | |
| Outputs | Indicators | MoVs | Baseline | Target | | Assumptions |

| | | | | | | |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Mid-term (if applicable) | Final | |
| Output 1.1 Water schemes developed | <p>Number of wells drilled and pumping groundwater using solar energy</p> <p>Number of hand - dug Wells constructed</p> <p>Number of springs developed</p> <p>Number of community ponds developed</p> <p>Number of water reservoirs constructed</p> <p>Number of water points constructed</p> | Field survey reports; progress reports | <p>0 drilled wells using solar energy</p> <p>13 BH operated by diesel generators,</p> <p>26 hand dug wells</p> <p>0 springs²⁷</p> <p>15 reservoirs</p> <p>15 water points</p> | <p>112 drilled wells (82 deep and 30 shallow) and 80 hand dug wells,</p> <p>30 springs and 31 community ponds built,</p> <p>70 water reservoirs,</p> <p>60 water points</p> | <p>112 drilled wells and 80 hand dug wells, 30 springs, 31 community ponds, 150 water reservoirs, 140 water points</p> | <p>Groundwater with a discharge of 10 l/s is developed. The groundwater extracted is of potable quality. Firms are able to drill, construct and install the solar pumps inside the wells in the required period of time.</p> |
| Activities | Descriptions | Inputs | | Description of inputs | | |
| Develop Groundwater using PV-powered pumping systems | <p>This Activity is designed to minimize the adverse impacts of climate-induced rainfall variability on the production and productivity of smallholder agriculture.</p> <p>This activity also intends to augment the supply of potable water through access to groundwater using solar-powered pumping systems, which will involve organizing water well drilling, construction of shallow water wells, and installing PV-powered submersible and surface pumps in the target communities. This encompasses activities such as construction of, hand-dug wells, spring development, water retention structures (dams), etc.</p> | <ul style="list-style-type: none"> • Prepare detailed design and tender document; • Organize water well drilling, construction, supervision and commissioning of shallow wells (100-150 meters depth with 6-8 inch PVC casing) • Geophysical surveys • Water well drilling, construction and supervision (shallow wells) • Install submersible and surface PV pumps | | <p>The inputs are largely investments in rural water supply schemes, and substituting design generation in water pumping.</p> <p>Specifically, the inputs will finance the preparation and design of tender documents for consultants and contractors, conduct 396 geological and hydrological studies; construct of 396 water wells; procurement of complete set of solar powered submersible and surface water pump systems including all electro-mechanical works.</p> | | |
| | | MoVs | Baseline | Target | | Assumptions |

²⁷ The feasibility study identified 309 springs outcrops which can be developed

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|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> Indicators | | | Mid-term (if applicable) | Final | |
| Output 1.2 Small-scale irrigation (SSI) and associated water-retaining structures established | <ul style="list-style-type: none"> Hectare of irrigated land | Progress reports, field survey reports | 129 ha | 1,625 ha of land irrigated | 5,421 ha of land irrigated | The community will be willing to shift to SSI and also contribute to the development of the scheme. By-laws will be respected in the equitable distribution of the water resources. |
| Activities | Descriptions | | Inputs | | Description of inputs | |
| Construction of small-scale irrigation (SSI) and associated water-retaining structures | This Activity envisage a combination of interventions including development of small-scale irrigation, upgrading traditional irrigation schemes, construction of diversion weirs, and development of pipe-supported irrigation schemes in the target communities. | | <ul style="list-style-type: none"> Provide water harvesting structures Construct community ponds and hand-dug wells to irrigate farmland Develop springs to irrigate farmland Develop and expand small-scale irrigation technologies to irrigate farmland, including traditional irrigation | | These inputs will address the development and upgrading of 320 traditional irrigation schemes, construction of 1100 diversion weirs for irrigation, installation of 550 pipe supported irrigation schemes, support 22 community pond construction activities; finance development of 990 springs for irrigation, and development of 1632 scale irrigation canals. | |
| | <ul style="list-style-type: none"> Indicators | MoVs | Baseline | Target | | Assumptions |
| | | | | Mid-term (if applicable) | Final | |
| Output 1.3 Water Resource Monitoring instruments installed and used for groundwater monitoring | Number of Wells installed with groundwater monitoring system | Progress reports; field survey reports; GPS spatial data sets | 0 | 0 | 44 Ground water Monitoring Devices installed | Federal, regional and Woreda bodies collaborate for effective use and operation, and maintained |
| Activities | Descriptions | | Inputs | | Description of inputs | |

| | | | | | | |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Water Resource Monitoring instruments installed and used for groundwater monitoring</p> | <p>This activity helps to install water resource monitoring devices within the targeted Woredas to provide meaningful data to inform decision-making at all levels. GPS equipment's shall also be supplied to monitor and accurately document project results</p> | <ul style="list-style-type: none"> • GPS equipment's and ground water well monitoring devices. | <p>Provision of Garmin, GPS for monitoring and documenting purposes, Supply and install ground water well monitoring device -</p> | | | |
| Component 2 | | Management of natural resources for improved water availability | | | | |
| | <ul style="list-style-type: none"> • Indicators | <p>MoVs</p> | <p>Baseline</p> | <p>Target</p> <p>Mid-term (if applicable) Final</p> | | <p>Assumptions</p> |
| <p>Output 2.1: Degraded landscape surrounding the water sources rehabilitated and managed</p> | <ul style="list-style-type: none"> • Number of community nurseries established; • Hectare of degraded land around the water sources covered with trees and existing forest protected • Hectare of land on which soil fertility management practiced | <p>Reports, field surveys</p> | <p>10 community nurseries; 1,200 ha of restored degraded land</p> | <p>66 nurseries established and functional 2,075 ha of degraded land rehabilitated or protected 1500 ha of land threated with soil fertility management</p> | <p>66 nurseries established and functional, 7,850 ha of degraded land rehabilitated or protected 2,850 ha of land treated with soil fertility management</p> | <p>The communities actively engage in the rehabilitation of degraded lands surrounding the water sources and protect and manage planted trees and existing forest (if any) in line with their bylaws</p> |
| <p>Activities</p> | <p>Descriptions</p> | | <p>Inputs</p> | | <p>Description of inputs</p> | |
| <p>Establish and operationalize nursery Treat land with soil fertility management</p> | <p>The project will support establishment and operationalization of one community nursery in each target Kebele. These will be used to raise seedlings, which will be planted on degraded land surrounding the sources of water schemes, which will be used for both domestic consumption and irrigation</p> | | <ul style="list-style-type: none"> • Procure seeds that will be used for afforestation/reforestation purposes • Support afforestation/reforestation of degraded forest land • Enable area closure of severely degraded land through enrichment planting • | | <p>The inputs will invest in rehabilitating degraded forestlands. The support includes among others procurement of seeds; carry out seedling production/Tree and grass seedling planting on 7,850 ha of land</p> | |
| Component 3 | | Strengthen institutions, build capacity of communities and government staff and Facilitate communication and learning | | | | |

| | • Indicators | MoVs | Baseline | Target | | Assumptions |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| | | | | Mid-term (if applicable) | Final | |
| Output 3.1 Improved capacity of both men and women beneficiaries on use, management and administration of irrigation and potable water schemes and enhanced communication and learning | <ul style="list-style-type: none"> # of experts/community members with knowledge and skills; <i>operations and maintenance; and irrigation agronomy</i> # of in country experience exchange visits and learning events organized, # of persons with knowledge management and information communication skills, # of persons trained on ESSF # of climate responsive planning and budgeting manual | Periodic progress report, filed survey Workshop reports; | 0 | 850 out of which 40% are females 5 experience exchange events; 720 persons, out of which 40% are females, on KM and communication, 2,000 persons trained on ESSF 22 woreda specific climate responsive planning and budgeting manual prepared | 1,500 out of which 40% are females 10 experience exchange and learning events; 1,150 out of which 40% are females on KM and communication; | The Woredas assign the right persons for the capacity building trainings on the key areas mentioned |
| | | | | | | |
| Activities | Descriptions | | Inputs | | Description of inputs | |

| | | | | | | |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <p>Build the capacity of manpower at community and sector levels</p> | <p>This activity will enhance implementation capacity of the project through developing and strengthening human capability through tailor-made training on IWRM and climate responsive planning and budgeting</p> | <ul style="list-style-type: none"> • Provide tailor-made training at all levels; | <p>These inputs support the provision of trainings for Federal regional, and Woreda experts on irrigation agronomy; conduct capacity building and training for DAs.</p> | | | |
| <p>Learning and communication systems</p> | <p>This activity will establish learning and communication systems through workshops, experience sharing.</p> | <ul style="list-style-type: none"> • Organize workshops, events and awareness-creation forums • Synthesize, prepare and disseminate communication and knowledge materials • Share in-country experiences • Develop one central • Develop a project-specific M&E template | <p>These inputs invest in awareness building, exchange visits, and knowledge generation and sharing to promote targeted communities resilience. Inputs finance awareness creation on closure and improvements of community grazing land; scaling-up good practices/knowledge on forest management; experience sharing on climate smart villages and demonstrations; document lessons and develop mechanism for scaling-up and ensuring sustainability, organizing a field day; conduct demonstration of post-harvest technologies, and exposure visit for different stakeholders.</p> <p>These inputs also address the issue of establishing PIM to ensure the engagement of National, Regional, Woreda and Kebele-level actors, plus communities and other relevant stakeholders, to effectively and efficiently implement the project.</p> <p>The inputs will also support to strengthen the links between Kebeles to at least one nearby University / Research institution /TVET/ training center.</p> | | | |
| | <ul style="list-style-type: none"> • Indicators | <p>MoVs</p> | <p>Baseline</p> | <p>Target</p> <p>Mid-term (if applicable) Final</p> | | <p>Assumptions</p> |
| <p>21) Output 3.2 Institutional framework and local management instruments strengthened</p> | <p># of Woreda level institutions, which have started practicing climate smart planning and budgeting, # of database established and operationalized # of linkages established with higher institutions/ research centers ,</p> | <p>Field survey, reports</p> | <p>0</p> | <p>22 sector offices prepare and implement climate smart plans; 1 central database system; 4 linkages with higher learning institutions/ research centers</p> | <p>44 sector offices (two sectors per woreda); 1 central database system; 9 linkages with higher learning institutions/ research centers 5,100 persons on ESSF</p> | <p>The Woredas are committed to assign the appropriate individuals for the capacity building trainings and workshop</p> |

| Activities | Descriptions | Inputs | Description of inputs | | | |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Strengthen institutional infrastructural capacity | This Activity addresses the means of implementation of other interventions proposed in this project in the target Woredas and is central to the sustainability of the project. | <ul style="list-style-type: none"> • Procure and distribute office and ICT equipment and tools • Establish/strengthen community-based organizations and systems • Develop a project operational structure and implementation manual, and • Provide institutional backstopping • database management system to capture all relevant data | These inputs support forest sector capacity need assessment in 22 Woredas; provision of equipment and materials for the forest sector in targeted Woredas, improve Farmers' Training Centers (FTCs) to demonstrate and train farmers on climate proof measures. | | | |

H.2. Arrangements for Monitoring, Reporting and Evaluation

198. Monitoring and evaluation (M&E) is one of several implementation and management tools that support successful delivery of this project. Without careful monitoring, the necessary data are not collected; hence learning cannot be achieved and evaluation cannot be done well. Monitoring and evaluation is one of the core responsibilities of MOFEC. The CRGE Facility, the Federal Sector Ministries, Regions and local stakeholders will conduct regular monitoring and supervision of this project.
199. The monitoring and reporting system of the proposed project will be gender sensitive and will follow guidance from the GCF and comply with GCF M&E policy, ensuring that the project maintains a simple and interactive monitoring system allowing for regular reporting and learning at all levels. It is expected that it will be based on the following core activities:
200. Activity Recording/Process Documentation: Progress monitoring will provide evidence on accomplishment of the core activities planned under each Output and Activity, which will be scrutinized by assigning milestones and implementation timelines. This will help the strategic and operational managers to identify which activities are ahead, behind or on schedule. The Accredited Entity and executing entities will be responsible for ensuring routine monitoring on the use of inputs (including finances) and implementation of activities.
201. Quarterly Progress Report: The Executing entities will submit aggregated quarterly physical progress reports to the CRGE Facility, which will coordinate the overall implementation and delivery of the project. The CRGE Facility will aggregate and submit a consolidated report (both financial and physical) to GCF. Quarterly reporting will capture activity and output-level information. The narrative section of the quarterly report, therefore, will include a summary of activities and outputs contributing to expected outcomes.
202. Annual Institutional Learning Events: The EE's will undertake an annual learning event to reflect on the changes being observed and to take stock of progress made. These learning events will help sharing of experiences and lesson-learning among the participating entities (including regional entities, as relevant).
203. Annual Performance Assessment: The Executing entities will submit an annual Performance Assessment Report (PAR) on the project Outputs. The PARs inform two monitoring activities at the project coordination level – annual monitoring missions and annual reviews/reports – and will leverage the lessons and insights from responses to the M&E. The reporting process is similar to that for quarterly reports. Executing entities will aggregate component reports before submission to their respective Project Coordination Units, which will then submit to the CRGE Facility. PARs capture Activity, Output and Outcome-level information. The report combines national and GCF reporting requirements, which include but are not limited to, reporting on:
- Progress made towards project Objective and project Outcomes – each with indicators, baseline data and end-of-project targets (cumulative);
 - Project Outputs delivered per project Outcome (annual);
 - Financial reports;
 - Lesson learned/good practice; and
 - Annual Work Plan (for the following year).
204. Joint Monitoring Missions: Joint monitoring missions will provide an opportunity to engage stakeholders of the project, including those that do not have a direct role in implementation. These missions will be organized by the CRGE Facility or line ministries, to be undertaken annually, and involve the Executing entities and other development partners.
205. Ad-hoc Quality Assurance Missions: These will be co-organized by the relevant ministry and the CRGE Facility for the purpose of validating M&E information during site visits. A key part of these missions is to hold reflection meetings at regional and Woreda levels. Observations, decisions and action points arising from the mission will be distributed to participants.
206. Mid-term Review and Terminal Evaluation: Half-way through the project lifetime and during the final three months, an independent mid-term review /terminal evaluation will be conducted by an independent consultant/evaluator. Both reports will summarize the results achieved (Objectives, Outcomes, Outputs), lessons learned, problems met and areas where results may not have been achieved. Output-level evaluation

will be based on assessing results against the baseline. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results. Evaluations will be implemented in line with GCF standards. The review/evaluation will be guided by best-practice approaches to evaluation of climate change interventions²⁸. At mid-term, there should be an emphasis upon project or process review, with learning-oriented enquiry; the terminal evaluation will be more focused upon success in delivering outcomes and the impact on climate change adaptation in Ethiopia.

207. **Learning and knowledge sharing:** Results from the project will be disseminated within and beyond the project intervention zone through existing information-sharing networks and forums. The CRGE Facility, in collaboration with the entities involved in the project, will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons-learned. Further, the CRGE Facility, in collaboration with the entities involved in the project, will identify, analyze and share lessons-learned that might be beneficial in the design and implementation of similar future projects. A two-way flow of information will be maintained between this project and others of a similar focus.

208. The reporting path of the project is depicted as below (see Figure 3), with a description in the box underneath.

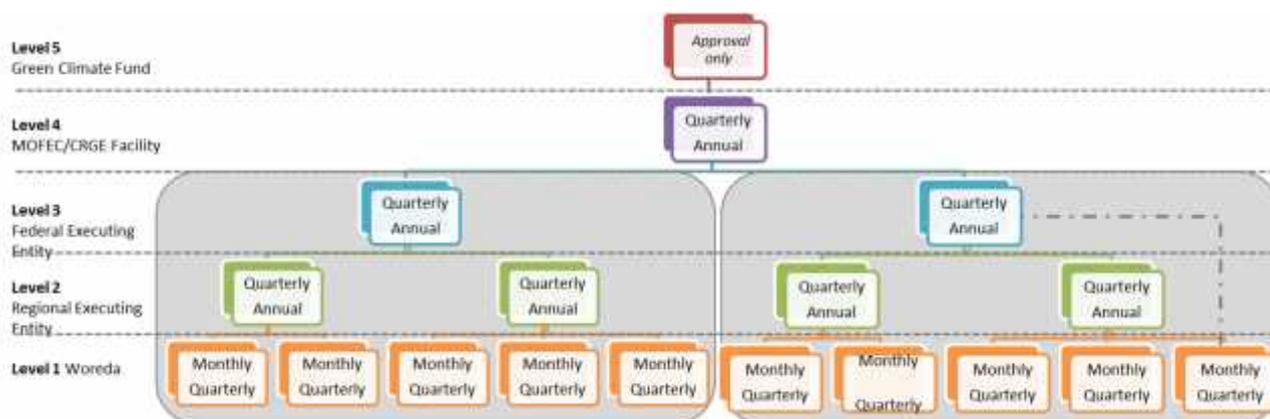


Figure 3 Project Reporting Path

Description of the reporting path:

- **Level-1:** Woreda's report on monthly, quarterly and annual basis to regional sector bureaus.
- **Level-2:** Regional sector bureaus consolidate the quarterly and annual physical reports received from Woredas into one report and submit this to the respective federal ministry.
- **Level-3:** Federal ministries aggregate the physical reports received from regional sector bureaus into one report and submit to the CRGE Facility.
- **Level-4:** The CRGE Facility presents the report to the Management Committee for discussion and approval.
- **Level-5:** After obtaining endorsement and approval of the Management Committee, the CRGE Facility will send the report to GCF.

²⁸ Colvin J, Williams A, Ebi K & Patwardhan A (eds) (2016), *Monitoring, Evaluation and Learning for Climate Change Adaptation at the National Level*. Washington: STAP/Provia, in press.

I. Supporting Documents for Funding Proposal

- NDA No-objection Letter (Annex I)
- Feasibility Study (Annex II)
- Integrated Financial Model that provides sensitivity analysis of critical elements (Annex III)
- Confirmation letter or letter of commitment for co-financing commitment (Annex IV)
- Project Confirmation/Term Sheet (Annex V)
- Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan (Annex VI)
- Appraisal Report or Due Diligence Report with recommendations (Annex VII)
- Evaluation Report of the baseline project (Annex VIII)
- Map indicating the location of the project/programme (Annex IX)
- Timetable of project/programme implementation (Annex X)
- Project confirmation (Annex XI)
- Economic analysis (Annex XII)
- Additional background details (Annex XIII)
- Additional Supporting Documents (Annex XIV)

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*