



REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project
THE Special Climate Change Fund (SCCF)¹

PART I: PROJECT INFORMATION

Project Title: Climate Resilience through Conservation Agriculture			
Country(ies):	Republic of Georgia	GEF Project ID: ²	5147
GEF Agency(ies):	IFAD	GEF Agency Project ID:	
Other Executing Partner(s):	Ministry of Agriculture and Food Industry (MAFI)	Submission Date:	December 2004
GEF Focal Area (s):	Climate Change	Project Duration(Months)	48
Name of Parent Program (if applicable)		Project Agency Fee (\$):	530,000
<ul style="list-style-type: none"> ▪ For SFM/REDD+ <input type="checkbox"/> ▪ For SGP <input type="checkbox"/> ▪ For PPP <input type="checkbox"/> 			

A. FOCAL AREA STRATEGIC FRAMEWORK³

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCA-1 (select)	Outcome 1.2: Reduce vulnerability in development sectors	Output 1.2.1: Vulnerable physical, natural and social assets strengthened to response to climate impacts, including vulnerability	SCCF	4,112,000	25,569,000
CCA-2 (select)	Outcome 2.3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	Output 2.3.1: targeted population groups participating in risk adaptation and risk reduction awareness activities	SCCF	390,000	480,900
CCA-3 (select)	Outcome 3.1: Successful demonstration deployment, and transfer of relevant adaptation technology in targeted areas	Output 3.1.1: Relevant adaptation technology transferred to targeted groups	SCCF	398,000	500,000
CCA-3 (select)	Outcome 3.2: Enhanced enabling environment to support adaptation-related technology transfer	Output 3.2.1: Skills increased for relevant individuals in transfer of adaptation technology	SCCF	150,000	200,000
Sub-Total				5,050,000	26,749,900
Project Management Cost ⁴			SCCF	250,000	750,100
Total Project Cost				5,300,000	27,500,000

B. PROJECT FRAMEWORK

Project Objective: Improve water availability, farmland productivity and smallholders' income through investments in climate-resilient farming systems and VC technologies.								
Project Components	Indicate whether Investment, TA, or STA**	Expected Outcomes	Expected Outputs	LDCF/SCCF Financing*		Co-financing*		Total (\$)(*000)
				(\$)(*000)	%	(\$)(*000)	%	
1. On-farm efficient	STA	1.1: On-arm water efficiency	1.1.1. At least 4,750 ha in the project areas	3,102	58.53	8,394.8	30.52	11,496.8

¹ This template is for the use of LDCF projects and SCCF Adaptation projects only. For other SCCF projects under Technology Transfer, Sectors and Economic Diversification windows, other templates will be provided.

² Project ID number will be assigned by GEFSEC.

³ Refer to the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.

⁴ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

irrigation and soil and water conservation for sustainable agriculture production		and farming practices in irrigated and rainfed crop production systems are improved	are managed using EIT and CA systems and technologies that enhance yield and water use efficiency.					
2. Landscape restoration to prevent climate-related risks	INV	2.1: Landscape restoration plans developed and implemented to prevent climate-related risks	2.1.1. 150 landscape restoration (LR) plans incorporating climate-resilient infrastructures and vegetation restoration interventions in erosion-risk vulnerable areas are developed and implemented.	1,400	26.41	17,655.1	64.20	19,055.1
3. Enabling environment for climate-risk reduction in agriculture	TA	3.1: Concerned institutions are empowered through capacity building to develop a more conducive policy environment for climate-resilient agriculture and water and soil conservation; 3.2: The adaptive capacity of key agriculture practitioners on climate-resilient soil and water management practices in agriculture is developed and applied in the value chain cluster areas.	3.1.1. A policy dialogue is triggered to mainstream CC risk reduction into water and soil conservation in agriculture; 3.2.1. A training programme is designed and implemented to build the capacity of service providers on efficient irrigation, sustainable soil & water management, and landscape restoration; 3.2.2. At least 3,000 farmers participate in 30 on-farm demonstrations where new irrigation and CA production systems and technologies are tested and validated	548	10.34	700	2.55	1,248.0
4. Project management				250	4.72	750.1	2.73	1,000.1
Total Project Costs				5,300		27,500		32,800

* List the \$ by project components. The percentage is the share of LDCF/SCCF and Co-financing respectively to the total amount for the component, ie., the percentage for each component will be added up horizontally to 100%.

** TA = Technical Assistance; STA = Scientific & technical analysis.

C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

<i>Source of Co-financing</i>	<i>Name of co-financier (source)</i>	<i>Type of Cofinancing</i>	<i>Cofinancing Amount (\$)</i>
GEF Agency	IFAD	Grants	700,000
GEF Agency	IFAD	Soft-loans	26,800,000
Total Co-financing			27,500,000

D. LDCF/SCCF RESOURCES REQUESTED BY AGENCY(IES) OR COUNTRY(IES) *

<i>GEF Agency</i>	<i>Fund Type</i>	<i>Country Name/ Global</i>	<i>(in \$)</i>			
			<i>Project Preparation</i>	<i>Project</i>	<i>Agency Fee</i>	<i>Total</i>
Total Resources						

* No need to provide information for this table if it is a single country and single GEF Agency project.

E. PROJECT MANAGEMENT BUDGET/COST

<i>Cost Items</i>	<i>Total Estimated person weeks</i>	<i>GEF (\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	192	86,400	446,400	532,800
<i>International consultants*</i>				
<i>Office facilities, equipment, vehicles and communications**</i>		104,000	229,300	333,300
<i>Travel**</i>				
Total		190,400	675,700	866,100

* Provide detailed information regarding the consultants in Annex C.

** Provide detailed information and justification for these line items.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

<i>Component</i>	<i>Estimated person weeks</i>	<i>GEF (\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	250	375,800	1,515,400	1,891,200
<i>International consultants*</i>	80	179,900	233,000	412,900
Total		555,700	1,748,400	2,304,100

* Provide detailed information regarding the consultants in Annex C.

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? (SELECT)

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund)

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁵

A.1 National Strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

1. Given the importance of the agriculture sector in the Georgian economy and its high vulnerability to climate change, the national goals of economic growth and poverty reduction will only be met if a climate-resilient, modern and competitive agricultural sector is in place. The Government of Georgia, with the support of national and international partners, is engaged in a wide range of development projects and programmes supporting policy reforms and investments in agriculture irrigation infrastructure. However, both subsistence and surplus farmers are highly vulnerable to the impact generated by climate change. Climate change is acting as a “multiplier” of existing socio-economic and environmental barriers to sustainable development. The promotion of resilient agriculture systems and technologies for efficient water use, more stable and higher yields and diversified crop production together with climate-proof infrastructure modernization and landscape restoration measures for reducing vulnerability to climate risks and improving key environmental services for agriculture production will represent a major contribution of the SCCF/ERASIG project to the adaptation of the agriculture sector in Georgia, in line with the governmental CC adaptation priorities in agriculture.
2. The GEF ERASIG project is in line with the 2003-2015 Economic Development and Poverty Reduction Programme of Georgia (EDPRP) and the recently approved Strategy of Agriculture Development of Georgia for 2012-2022 (SADG) issued by the Ministry of Agriculture, which supports the development of integrated multi-sectoral initiatives in the areas of food security, climate change and poverty reduction. Under SADG, the Ministry of Agriculture intends to revitalize irrigated agriculture through the rehabilitation, reconstruction and modernization of irrigation and drainage systems, and the support for efficient irrigation systems (e.g. drip irrigation, pivots, etc) and good agricultural practices (e.g. conservation agriculture principles through permanent soil cover, crop rotations, effective use of water and fertilizers, etc.) to ensure sustainable production, promote environmental sustainability, improve soil quality and reduce land degradation. The potential for organic production will be considered, including the set up of an accreditation system in line with international standards.
3. The project climate change adaptation approach and proposed activities match the specific CC adaptation priority measures and technologies included in the framework of the Second National Communications to the UNFCCC (SNC), and in the Technology Needs Assessment and Technology Action Plans for CC Adaptation (TNA). Three types of land management technologies are recommended by the TNA process: (i) protection of arable lands from water erosion, (ii) protection of arable lands and irrigation infrastructure from wind erosion and (iii) sustainable irrigation technologies. The main CC adaptation priorities identified in the SNC and the TNA reports for the agriculture sector are:
 - i. The restoration of pastures and windbreaks to reduce wind and water erosion, siltation problems in irrigation canals, as well as to improve microclimate conditions – lower evapotranspiration – and soil fertility in agriculture land. This will be achieved through the mobilization of farmers and village communities to implement pilot projects, and the use of multipurpose plant species to promote the environmental services of windbreaks (e.g. crop pollination; economically valuable products such as wild fruits, MAP, honey, etc).
 - ii. Water conservation and water use efficiency, by rehabilitating and improving irrigation schemes and employing advanced irrigation methods such as micro-irrigation technologies - e.g. sprinklers and drip irrigation that can reduce water consumption by 30 to 70% - based on integrated water management planning at the basin level;
 - iii. Soil conservation cropping systems and technologies, such as conservation agriculture (combination of no/reduced till, mulching, crop rotation, organic fertilization and integrated pest management), to improve soil structure, soil fertility and soil water retention;
 - iv. The selection of more water-efficient crops, such as drought-resistant varieties of higher-valued fruit and vegetable crops;
 - v. The diversification of landscapes and income - e.g. integrating trees, livestock, horticulture and specialized agriculture in agro-silvo-pastoral systems - to help buffering against climate impacts through a diversified

⁵ For questions A.1 – A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

- on-farm production and eco-agriculture techniques that improve environmental services and resilience to natural disasters and soil erosion;
 - vi. Effective storage and processing technologies for the diversification of less perishable agriculture products to address increased variability and shortfalls in high demand months (i.e. summer);
 - vii. The amelioration of soil fertility through the use of gypsum in alkali soils and chemical fertilizers (nitrogen, sulphur, phosphorus, etc.) in saline soils.
 - viii. The improvement of agricultural research and extension capacity, which are critical for the adaptation to climate change in the agricultural sector;
 - ix. The development of early warning systems for natural disasters and seasonal forecasting.
4. The Project was designed taking into account the findings, conclusions and recommendations of relevant reports, such as Second National Communications to the UNFCCC (SNC), and in the Technology Needs Assessment and Technology Action Plans for CC Adaptation (TNA), the WB “Reducing the Vulnerability of Georgia’s Agriculture Systems to Climate Change: Impact Assessment and Adaptation Options” (2013), the TNWB’s “Disaster Risk management and Climate Change Adaptation in Europe and Central Asia” (2010), KfW’s “Adaptation to Climate Change in the Kura-Aras River Basin” (2010), WWF Norway “Climate Change in Southern Caucasus: Impact on Nature, People and Society” (2008), other UN and relevant international donors’ discussion and working papers (2008-2012).

A.2 Consistency of the project with LDCF/SCCF eligibility criteria and priorities.

5. In line with the SCCF criteria, the project was developed in compliance with the principles of country ownership and drivenness. The formulation team engaged in extensive consultations with Governmental agencies, International Cooperation, NGO, agriculture organizations and local farmers to ensure that their views were fully taken into account. The activities supported through the project have been identified among the governmental CC adaptation priorities for the agriculture sector included in the SNC and the TNA. The GEF and SCCF criteria for project design and financing have been respected: project management costs represent less than 10% of the total budget requested and co-financing ratio fulfils SCCF criteria. Finally, the project was developed in coordination with other ongoing and planned IFAD initiatives in the country (ASP and AMMAR baseline project).
6. The SCCF project follows the approach of country ownership and a focus on results, supporting investments that reflect governmental priorities for poverty reduction and climate change adaptation in agriculture. These investments seek to increase agriculture resilience to CC risks, boost rural income by improving agriculture productivity and access to markets, and enhance food security by expanding local food supply and creating new income opportunities.
7. The project is designed to support the implementation of governmental priorities on CC adaptation for the agriculture sector included in several official documents (SNC and the Technology Needs Assessment and Technology Action Plans for CC Adaptation in Georgia). These priorities include: (i) efficient irrigation technologies, agronomic technologies for soil conservation, fertility, and water storage capacity, and land and water management systems and technologies for the protection of arable land against wind and water erosion; (ii) more water-efficient crops, drought-resistant varieties of higher-valued fruit, vegetables, legumes and cereals, diversified on-farm production, and storage and processing technologies for the diversification of less perishable agriculture goods to face demand under extreme weather periods and increase market opportunities; (iii) improved agricultural extension and research capacity and services, to elaborate and validate recommendations for farmers in each particular agro-climatic zone; (iv) support farmers through the provision of technical guidance and instruments to help the shift to climate-resilient agriculture systems and technologies; (v) awareness raising on CC impacts and the environmental and socio-economic efficiency of proposed CC adaptation technologies; (vi) institutional capacity for mainstreaming CC adaptation into legal/regulatory frameworks and financial services for farmers to adjust rural development strategies and action plans to the new CC reality.

A.3 The GEF Agency’s comparative advantage

8. Environmental threats such as climate change are inseparable from IFAD’s mission of helping poor smallholders. Climate change is multiplying the existing risks of IFAD’s target group and IFAD is keen of turning these into opportunities. IFAD, through the implementation of its climate change strategy, is maximizing its impact on rural poverty in a changing climate. IFAD has been successful in doing so through supporting innovative approaches to helping smallholder producers – both women and men – build their resilience to climate change; helping smallholder farmers take advantage of available adaptation incentives and funding; informing a more

coherent dialogue on climate change, rural development, agriculture and food security, as well as influencing relevant policies. Moreover, IFAD brings a good knowledge of natural resource management and a significant pool of knowledge and experience in capacity building and the empowerment and sustainable agricultural production. The Fund's comparative advantage also lies in its ability to work at the grassroots, community level. Currently IFAD is the only institution involved in irrigation rehabilitation activities.

9. The GEF resources will be co-financed through the on-going Agricultural Services Project (ASP) and the recently approved Agriculture Modernization, Market Access, and Resilience Project (AMMAR), with an IFAD financial contribution of USD 27.5 million (two soft loans of USD 26.8 million, and two grants of USD 0.7 million) for the implementation of baseline activities. The proposed SCCF funding will be incremental and build the adaptive capacity as well as reduce vulnerability of the rural populations to the predicted impacts of climate change in Georgia.
10. IFAD is currently one of the two largest donors supporting Georgia's rural agricultural sector. IFAD has supported several projects in Georgia. The first project supported by IFAD was the *Agricultural Development Project (ADP)*, co-financed with the World Bank (IDA financing), which was completed in June 2005. The second project financed by IFAD was the *Rural Development Programme for Mountainous and Highland Areas (RDPMHA)*, which was completed in March 2012. The *Rural Development Project (RDP)*, IFAD's third project, which is co-financed with the World Bank, was completed on June 30, 2012. The fourth is the on-going *Agricultural Support Project (ASP)*, and the fifth is the recently approved *Agriculture Modernization, Market Access, and Resilience Project (AMMAR)*, which are the first projects of IFAD that supports irrigation rehabilitation.
11. The ASP overall project management and implementation responsibility is now under the International Organizations Projects Implementation Department (IOPID) of the Ministry of Agriculture (MoA). The ASP has so far been implemented in a somewhat volatile policy and institutional environment characterized by: (i) the liquidation of the Agricultural Development Projects Coordination Centre (ADPCC), originally assigned for Project management and implementation, and consequent transfer of responsibility to the MoA under the IOPID; (ii) frequent changes in decisions of MoA with respect to investments under the SSRI owing to changes in strategy, government priorities and drawing from lessons learned; and (iii) delays in the signing of the Project's Leasing Operations Manual.
12. Despite these initial setbacks, progress in implementation has been noted by IFAD follow up mission and validation missions. A number of preparatory steps have been taken to establish a sound platform to enable smooth implementation performance. More specifically:
 - the IOPID staffing situation is settled with the retention of experienced key ADPCC staff in IOPID, hiring of an Engineer and Procurement Officer complemented by MoA technical staff;
 - the Rural Leasing Operations Manual has been approved and the contract with a Leasing Company that has a developed portfolio has been signed;
 - the construction of three infrastructure projects have been completed; and
 - the feasibility studies for the rehabilitation of 13 irrigation schemes and 1 drainage scheme have been completed and submitted for IFAD review and approval.
13. The Government of Georgia has embarked on a program to address the key rural issues within the SADG for 2012-2022 framework approved on 28 March 2012. Sustainable economic growth and employment generation, improved use of natural resources, increased access to and quality of public infrastructure including irrigation systems, among others, are recognized as important preconditions for poverty reduction in rural areas. Major contributions to economic growth in rural areas are expected to be derived from the promotion of small on-farm and off-farm business development and increased employment generation. The Government's renewed interest in the revitalization of irrigated agriculture in Georgia is evidenced by the on-going institutional reorganization and funds earmarked from the state budget to the system rehabilitation in 2012 and 2013 (GEL 10.0 million and GEL 26.0 million respectively) as well as the recent request (01 May, 2012) for IFAD to provide additional funding for Georgia in the 2010-2012 lending cycle as supplementary financing to the SSRI of the on-going ASP. Consultations between the Government and other major donor institutions such as the World Bank and Asian Development Bank are on-going for investment programmes in Georgia irrigation and drainage sector.
14. The ASP Project design report was updated in July 2012 following an IFAD mission to Georgia. This update incorporates lessons learned as well as relevant information, including the 2003-2015 Economic Development and Poverty Reduction Programme of Georgia (EDPRP), Strategy of Agriculture Development of Georgia for 2012-2022 (SADG) and the IFAD Country Strategic and Opportunities Paper (COSOP) for Georgia. The project

approach and its implementation modalities are fully in line with these strategies, and its validity and relevance are reconfirmed.

A.4 the baseline project and the problem that it seeks to address

Baseline project

15. The IFAD Agriculture Supported Project (ASP) (2010-2016), managed and implemented under the responsibility of DPMMD/MoA, is supporting: (i) rural leasing to increase assets and incomes among poor rural women and men willing to move towards commercial agriculture and associated rural enterprises, and (ii) small-scale rural infrastructure rehabilitation to overcome bottlenecks that inhibit participation of economically active rural poor in the rural economy. ASP Project has an IFAD funding contribution for 2015 and 2016 of USD 13.5 million soft loan and USD 0.2 million grant.
16. The recently approved *Agriculture Modernization, Market Access and Resilience* (AMMAR) project (2015-2018) of the Government of Georgia, with an IFAD funding contribution of USD 13.8 million (USD 13.3 million soft loan and USD 0.5 million grant), aims to raise incomes of smallholder farmers and increase resilience through public and private investments in upgrading productive infrastructure, enterprises and smallholder farmer production systems and technologies in support of inclusive growth of agricultural value chains⁶. AMMAR will also establish partnerships with Banks and MFIs to help create a conducive environment and facilitate contact between the creditors and bankable clients to deliver credit to small farmers and to tailor their products to agricultural lending. AMMAR is part of the Ministry of Agriculture (MOA's) substantial ongoing investments to modernize agriculture in Georgia and is fully aligned to the Strategy for Agriculture Development (2014-2020) and supporting action plan.
17. AMMAR is organized into two mutually supportive components to accelerate the development of up to six priority climate smart agricultural value chains, initiated in two batches over the first two years of the project. AMMAR Component 1 (Irrigation and Agricultural Value Chain Investment) shall support investment in secondary/tertiary irrigation and value chain infrastructure, and shall stimulate private investment by smallholder farmers and agribusinesses in crop production and value chain activities through a partial matching grant scheme. Through a multi-stakeholder *process (MSP)* of systematic value chain facilitation, involving producers, agribusinesses, input/service providers and other VC stakeholders, AMMAR Component 2 (agricultural and value chain development) will help identify critical constraints along each of the value chains and to address them jointly with the value chain stakeholders. Such constraints are expected to include, for example: marketing, processing, storage, post-harvest, aggregation or primary production as well as intra-chain linkages and the provision of key services to producers and agri-businesses. Main activity areas under the Component will include: an initial value chain screening and prioritization process involving multiple stakeholders; an ongoing multi-stakeholder process of value chain facilitation in each value chain and associated production cluster areas, and; agricultural practices and technology transfer, training and promotion including practical field training at small scale technology plots. Specific "hard" investments by the project to address the identified constraints in each value chain will be primarily financed through the instruments under Component 1.
18. AMMAR, will support up to six priority climate smart value chains and address critical constraints along the value chains, for example in marketing, processing, storage, post-harvest, primary production or the provision of key services to producers and agri-businesses. As identified during appraisal, there is potential and based on farmer interviews, demand, for developing at least 9 value chains, for: (i) Stone fruits (peaches, plums, cherries, sour cherries); (ii) Pip fruits (apples, pear); (iii) Berries (strawberries, blueberries); (iv) Vegetables (v) Potatoes; (vi) Honey; (vii) Herbs; (viii) Beans & pulses (chickpea, lentils - as part of crop rotation); and (ix) Nuts.
19. AMMAR targeting will give priority to the poorest regions of Central and Eastern Georgia, with emphasis on the areas where there is agriculture and irrigation development potentials. The primary target groups are smallholder farmers, including active poor farmers⁷, in targeted value chains, while secondary target groups are other value chain actors (agribusinesses, cooperatives, service providers). Targeting of direct beneficiaries' households, agribusinesses and other value chain participants will be on the basis of their active involvement in

⁶ Climate smart value chain - for the purposes of this report is taken to mean an agricultural value chain that sources its primary produce from climate smart agriculture

⁷ Discerned in distinct sub-groups as *commercially active* - oriented towards gaining ground in commercial agriculture or consolidating existing investments and have above average technical capacity in agribusiness, medium to high level of education with access to information and/ or a credit history; or *economically active* - typically farming their lands and selling surplus in local markets with some education and receive additional income mainly from remittances and may have a credit history.

the prioritized value chains and their interest in participating in the project activities. In addition, to ensure the adequate distribution of benefits and more inclusive growth, the production technologies promoted will focus on those most relevant to the scale and resources of smallholder farmers, including active poor farmers. The multi-stakeholder processes in each value chain will also be organized at the local level to enable the full participation of smallholders and active poor farmers alongside agribusinesses and other value chain participants and stakeholders.

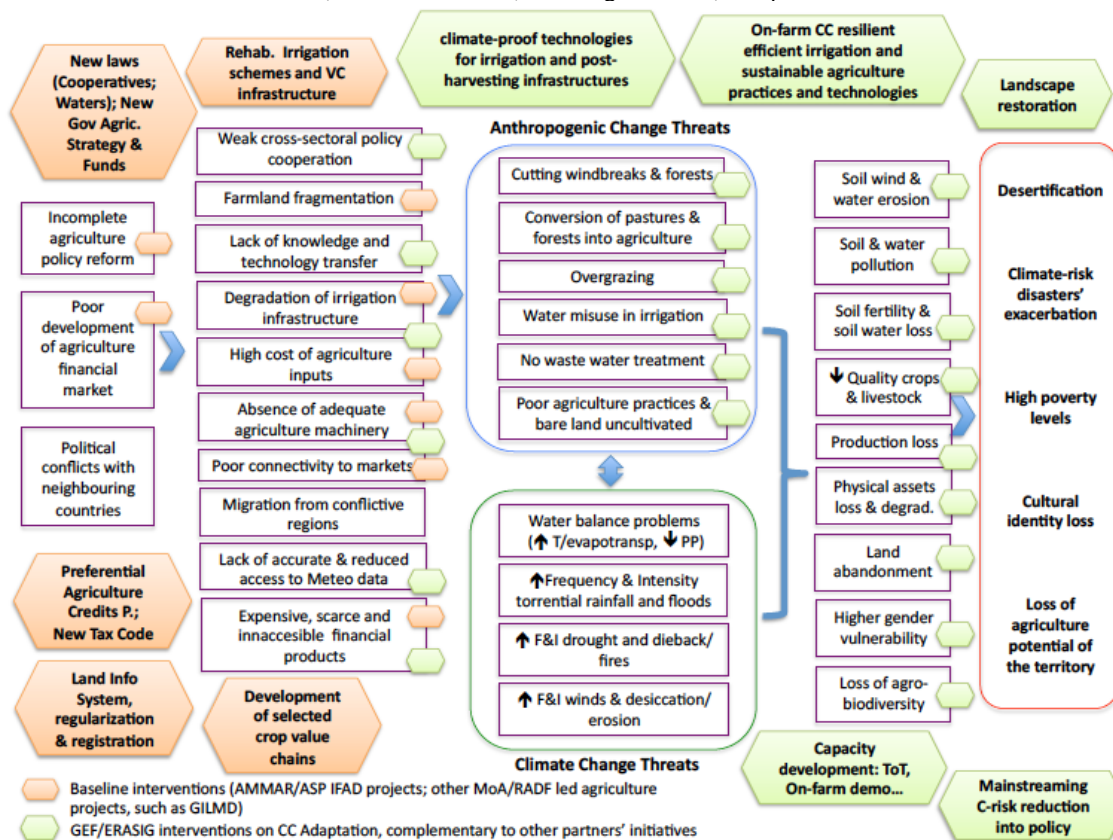
20. AMMAR will scale up ASP investments in the rehabilitation of public irrigation infrastructure and the enhancement of commercial farming in poor rural areas. Investments will be driven by demand from smallholder farmers and agribusiness identified through participatory processes of value chain facilitation under Component 2. Irrigation infrastructure rehabilitation will be conditional to adequacy and accessibility of water supply, and to a functioning state of the main/primary and major secondary canals.
21. AMMAR will also complement the WB project "Georgian Irrigation and Land Market Development" (GILMD), responding to the governmental renewed interest in irrigated agriculture, with a focus on rehabilitating the irrigation capacity of the country, promoting effective users' participation in the organization and management of water services, and supporting the governmental land registration reform that will clarify land tenure rights and help farmers participate in the land consolidation market.
22. Sustainability is central to AMMAR and will be achieved in multiple ways:
 - Productive - through improved water availability for irrigation at the farm level;
 - market and commercial sustainability- through targeting of value chains with comparative advantage and credible market opportunities, with immediate opportunities to increase income and profits necessary to attract further investments;
 - institutionally - through the use of existing and emerging service providers operating at the local level to delivery project services (banks, MFI, service centres, private service provider businesses, cooperative, associations etc.) and investments to strengthen their capacity;
 - economically - through the selective use of limited partial matching grants intended to trigger "first mover" investments and innovations in the value chains closely linked to partnerships with mainstream banks and MFI to create access to mainstream financing for investments by producers, agribusinesses and service providers to further growth;
 - technically - through investment in modern infrastructure and irrigation schemes as well as support to establish credible O&M arrangements before any construction work begins.

Project rationale

23. The agricultural sector in Georgia is highly climate sensitive. Climate change is already showing major impacts, with increased vulnerability of poor rural communities. Since agriculture is the economic and social safety net of the rural poor in the country, any poverty reduction strategy has to incorporate CC risk reduction objectives.
24. The predicted future climate conditions will significantly reduce water availability in the spring/summer periods critical for crop production, causing marked reduction in runoff relative to input precipitation, increased evapotranspiration, decreased soil moisture, and increased soil erosion risk due to the higher concentration of rainfall in short periods of heavy showers. The projected high to medium risk of windstorms in the target areas together with an intense upstream and downstream deforestation of the riverbanks and floodplains will exacerbate the impacts of floods and soil erosion. Because these changes will turn into less water available for agriculture and higher soil degradation, it will be necessary to:
 - a. Avoid irrigation water losses – rehabilitated and modernized irrigation schemes - and adopt efficient on-farm irrigation and soil and water conservation technologies, so they can minimize irrigation water needs, increase soil water storing capacity, and secure water availability to cover the ecosystems and human needs;
 - b. Increase soil cover and soil stability (e.g. enhancement of permanent soil cover and mulching in agriculture land; vegetation restoration in degraded land, in between crop land and along irrigation channels; plantation of suitable fruit trees such as hazelnuts, and restoration of pastures and forests in steep slopes to prevent landslides; implementation of flood/erosion control measures at the watershed level to stabilize farmland and irrigation schemes, making use of bio-engineering technologies) as a way to minimize the CC exacerbation of soil erosion risks. The restoration of degraded land will be paramount to ensure the environmental services needed for agriculture, and minimize climate risk.

25. ERASIG project will address the CC adaptation priorities identified by the Georgian government for the agriculture sector by testing and promoting climate-resilient irrigation and agriculture management practices and technologies, implementing landscape restoration measures to prevent climate-related risks, and by building capacity and supporting institutional development for the upscaling of results at both policy and local implementation levels.
26. ERASIG project is complementary with the baseline interventions (the IFAD-supported projects and other MoA policy reforms and rehabilitation of irrigation infrastructure interventions), which together address in an integrated way the root causes of agriculture decline and rural poverty in Georgia (Figure 1). The current agriculture policy reform⁸ aims to create an enabling environment that will facilitate the development of farmers' adaptive capacity through: (i) increased access to and quality of public infrastructure including irrigation schemes; (ii) the regularization of land registration to help reduce land fragmentation and activate a land consolidation market; (iii) the organization of farmers in associations or cooperatives to organize water irrigation quotas, improve access to agriculture machinery and inputs, finance and training, increase marketing opportunities, and share knowhow to improve irrigation and agronomic management practices; (iv) the availability of more suitable finance products to access machinery and inputs for efficient irrigation and sustainable agronomic practices.

Figure 1. Root-causes analysis framework for the agriculture sector decline in Georgia showing ERASIG (in green colour) and Baseline (in orange colour) responses⁹



⁸ Among others, the new laws on water, farmers' cooperatives, tax code, as well as on water use; new agriculture strategy; new land information system; the Preferential Agriculture Credits programme and other funding schemes.

⁹ From right to left, the framework includes: (i) first column with the main problems of the agricultural sector (desertification, exacerbation of disaster and climate risks, rural poverty, loss of cultural identity and loss of productivity of the territory) in eastern Georgia; (ii) second column with a set of direct causes (white rectangles); (iii) third column with the intermediate causes, including interacting anthropogenic and climate change threats; (iv) fourth and fifth columns with the ultimate political and economic drivers. The Framework also represents GEF/ERASIG intervention lines (hexagonal boxes in green colour) and baseline intervention lines (hexagonal boxes in orange colour) that in an integrated way aim to help reverse the root-causes for agriculture decline in Georgia. The small green and orange hexagons located in the right side of the root-causes indicate the areas addressed by ERASIG and the baseline intervention respectively.

27. AMMAR will support the governmental policy reform through investments in selected value chains to increase incomes and strengthen resilience of small farmers and the rehabilitation and modernization of value chain infrastructure – including irrigation schemes - in the CC vulnerable poorest agriculture areas of Georgia, supporting the identification and validation of efficient farmers’ organization and water service institutions.
28. ERASIG project will become a platform for individual farmers, farmers’ organizations, policy-makers, civil servants, agribusiness, cooperatives, service providers, researchers, NGO, and the financial sector (insurance companies, credit agencies, commercial companies), to work jointly on agriculture adaptation to climate change and implement effective adaptation measures. ERASIG project will help incorporate CC adaptation objectives and measures into AMMAR and MoA baseline activities through: (i) the incorporation of climate-proof technologies in the rehabilitation and modernization of irrigation schemes and post-harvesting infrastructures; (ii) a policy dialogue to help mainstream CC risk reduction into agriculture policies and regulations affecting soil and water conservation; (ii) improved access to suitable financial services, facilitating the acquisition of equipment and inputs for the adoption of climate-resilient efficient irrigation and sustainable agronomic technologies and practices for selected crops; (iii) capacity development of providers of services, individual farmers and farmers’ organizations to help them shift from conventional to climate-adapted agriculture production, and improve farmers’ post-harvesting marketing skills, specially looking at gender and youth unemployed problems.
29. ERASIG will test new approaches and technologies in the Georgian agriculture context that can eventually be up-scaled and replicated elsewhere in the country. The input of ERASIG funding will translate into: (i) more sustainable land management, higher yields and more diversified production through efficient irrigation and sustainable agriculture systems and technologies, better adapted crop types and varieties, and the ecological restoration of functional agrolandscapes in the target areas; (ii) improved access to CC-resilient technologies and knowhow thanks to the facilitated access to improved services, inputs, and credit for producers through partner financial institutions (FI) and service centres, the positive impact of targeted technical and institutional capacity development, and the implementation of on-the ground activities, including farm demonstration plots and research trials; and (iii) the adoption and implementation of climate-proof technologies in value chain infrastructures. Efficient irrigation technologies will also represent an important tool to prevent salinization problems arising from the excessive use of irrigation water (e.g. drip irrigation effects in reducing root-zone soil salinity and drainage), as has been demonstrated in numerous agriculture development projects in arid, semi-arid and sub-humid zones worldwide. In some areas with salt-affected soils the project will analyse the possibility to promote the use of more salt-tolerant crop and forage species and varieties.

A.5 Incremental/Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project.

30. The GEF/LDCF intervention will be a blended project, fully integrated into the IFAD-supported baseline project (AMMAR). ERASIG project will help mainstream a climate-resilient approach into the IFAD baseline interventions - AMMAR project. This will include: screening and prioritization of product value chains that are expected to have sustainable comparative advantages under future climate change scenarios, especially at the primary production level; promoting investment in climate-proof efficient irrigation technologies, conservation agriculture systems and targeted landscape restoration and soil erosion control measures alongside sensitive farmland areas and the rehabilitated irrigation schemes to create sustainable improvements in water-efficient irrigated production, and; promoting the widespread adoption of climate-resilient agronomic practices and technologies at the farm level.
31. ERASIG will also incorporate climate-resilience into the development of individual/institutional capacity of smallholder farmers, extension agents/organizations, researchers and other relevant actors to:
- (i) increase the understanding of smallholders on modern water and land conservation approaches;
 - (ii) develop the capacity of farmers and farmer organisations on commercial productive and market oriented farming practices;
 - (iii) improve the relevance and the quality of the services provided by extension units;
 - (iv) build the smallholders resilience to overcome economic and climate shocks.
32. While driven by farmer demand, the ERASIG supported climate-resilient agricultural technologies that are expected to be most relevant will likely be for improved water, soil and nutrition management. At the village level, the approach to technology transfer and promotion will be through a combination of practical CSA technology plots, promotion events, short and longer duration practical field training (for example through a

series of half day practical field training session at critical points in the production cycle) and systematic follow-up with farmers by the local service providers delivering the training. CSA technology plots will act as sites for farmers to directly access know-how, training and networks of services and credit providers to facilitate easier adoption of the promoted technologies. They will also create the opportunity for interested farmers to get an objective farmer-to-farmer perspective on the technologies from the progressive farmers on whose land the CSA technology plots are established.

Additional Cost Reasoning

33. IFAD has undertaken a financial analysis to: (i) assess the financial viability of the improved technologies and systems promoted by the project and (ii) evaluate the impact of the project's interventions on the cash flow and household incomes of the farmers involved. For the purpose of the analysis several models have been prepared with irrigation and rainfed cropping system, including cereals, potatoes, fruit trees, grain legumes, vegetable production in greenhouse, and beekeeping. The "without" project situation represents crops with conventional ploughing systems and inefficient irrigation system; the "with" project models illustrate the impact of efficient irrigation technologies and climate-resilient soil and water conservation agriculture systems and techniques (namely, Conservation Agriculture –CA- incorporating organic agriculture –OA- principles) on crop yields that are planned in the framework of the GEF ERASIG project.
34. The ERASIG Project is expected to increase incomes and strengthen resilience of the smallholder farmers in the IFAD baseline target areas. Benefits would derive from: (i) crop intensification and increased production due to rehabilitation of a number of climate-proof small irrigation systems and value chain infrastructures; (ii) increased crop production, improved soil condition and cost savings through introduction of climate-resilient farming systems and technologies (namely, efficient irrigation technologies, conservation agriculture incorporating organic agriculture principles) and soil protection measures (namely, restoration of vegetation shelterbelts to prevent soil erosion and improve environmental services, such as water regulation and pollination, supporting agriculture production; and (iii) improved value chains due to regular access to climate-resilient post-harvesting/processing infrastructure, financial services supporting investments in climate-resilient agriculture equipment, and to better commercial relationship between smallholders and wholesalers, exporters and processors.
35. Adaptive agriculture production systems and technologies and VC infrastructure: The anticipated main benefit/ERASIG additional reasoning would occur from keeping of the existing production and in yield increase as a result of reduced water losses, improved/efficient irrigation supply (drip and sprinkler irrigation systems), improved soil conditions (CA/OA technologies enhancing soil structure, organic matter, fertility, and soil water retention), reduced wind/water erosion risk (vegetation shelterbelts preventing siltation in irrigation canals, reducing water runoff and improving soil water infiltration), and reduced soil salinity risk (prevent salt migration through properly design and managed micro-pressurized irrigation). It was assumed that cropping pattern consists of 6 ha of wheat, 1.2 ha of plum orchards and 4.8 ha of potato generating a net annual benefit of around GEL 2,248 (USD 1,284) in the without project situation. The irrigated arable land is currently lacking sound agronomic practices and reliable and efficient water supply due to depreciation of the irrigation scheme and poor irrigation practices. For the with-project situation a 50% increase in yields on average was assumed. The model records a net present value (NPV) of GEL 27,896 (USD 15,940) over a twenty-year period and an internal rate return (IRR) of 17.2%, which is well above the opportunity cost (10%).
36. Quantification of the benefits deriving from the improvement of climate-proof value chain-related infrastructure such as storage/processing equipment, rentable wholesale facilities and certified testing facilities suggested that it will result in about USD 700,000 of incremental annual benefits in total. Approximately 1,060 smallholder farms and households will be benefiting from the improvement of the value chain-related infrastructures with increase of their annual income from 1.4% to 5% in 20-year perspective.
37. ERASIG matching Grant Models: Matching grants will support private investments that tackle identified value chain constraints and/or demonstrate replicable CC adaptation innovations aligned with each value chain strategy and action plan jointly developed with the value chain stakeholders. Most smallholders grow cereals, fruit and vegetables in small plots of land (0.6-0.7 hectare on average) using conventional technologies with low crop productivity. Several models were prepared as part of ERASIG formulation to analyse the financial and economic impact of the introduction of the proposed climate-resilient farming systems and technologies (CA/OA and efficient micro-pressurized irrigation) for smallholders. The analysis is based on the illustrative models of the small grant subprojects likely to be implemented by smallholders, particularly, the production of legume

grains, off-season vegetables, fodder crops and fruit trees. In addition, one of the small grant models presents financial results for a beekeeping business.

38. For Legume grains the model records an NPV of GEL 3,804 over a ten-year period and an IRR of 74%. Another model for small grant financing shows how attractive the production of offseason vegetables can be for small farmers and records a financial NPV of GEL 17,885 thousand over a ten-year period and a very high financial IRR of 103%. Next model presents introduction of a crop rotation that includes cultivation of legume crops (bean) in the first year followed by two years of wheat. The model records an NPV of GEL 475 over a ten-year period and an IRR of 22.2%. Beekeeping model indicates that the household benefits would be improved by at least GEL 2,111 (USD 1,206) with project per year.
39. Other two models illustrate agricultural businesses likely to be implemented by farmer groups, cooperatives and associations, such as (i) Cold storage, where the IRR on the incremental net benefits is 72%, which is well above the 10% opportunity cost of capital. The business of the cold store is to fetch higher prices during the off-pick season and to reduce losses. (ii) Fruits/vegetables dryer, which assumed that the total investment in the first year would be GEL 341,250 (USD 195,000). The model records an NPV of GEL 360,876 over a fifteen-year period and an IRR of 34.3%.

Expected Adaptation Benefits:

40. The SCCF funding represents an opportunity to increase the scope of the objectives pursued through IFAD in light of the expected negative impact of climate change on the agricultural sector in Georgia. Without SCCF additional funding, the IFAD-supported baseline interventions could turn out to be a business as usual investment, which fails to tackle the root causes of the constraints facing agriculture and rural development in Georgia.

WITHOUT SCCF FUNDING	WITH SCCF FUNDING
Irrigation infrastructure rehabilitation with no consideration of future water availability and water use efficiency needs.	Climate-proof irrigation infrastructure that favours water saving and optimal use of water.
Lack of consideration of soil erosion problems affecting irrigation schemes and farmland due to climate-related risks exacerbated by CC	Landscape restoration measures integrating the restoration of protective vegetation shelterbelts and bio-engineering technologies to prevent soil erosion, siltation and flooding impacts at the watershed level (upstream and downstream irrigation schemes and farmland)
Enhance crop productivity without considering the CC exacerbation of drought events, strong winds and torrential rainfall.	Promotion of soil and water conservation farming systems and technologies (e.g. EIT and CA) based on existing CC downscaling modelling of selected crops, that enhance the resilience and productivity of crop value chains.
Service providers (extension and mechanization centres) are unable to address farmers' knowhow, inputs and equipment needs to reduce CC impacts on agriculture production and post-harvesting.	ToT programmes and grant schemes facilitate the access and dissemination of knowhow, inputs and technologies to VC actors, improving their capacity to deal with CC impacts.

41. The implementation of measures to increase the availability of water for irrigation and crop production cannot achieve alone that farmers get higher yields and better quality of production if complementary measures that minimize the water needed for crops, increase the fertility and capacity of soils to store water, and avoid the negative effects of poor agronomic practices (e.g. overuse of water and salinization problems; the cutting windbreaks and soil desiccation and erosion) are not implemented. CC predictions in terms of rainfall and runoff decrease, and higher evapotranspiration, make even more necessary to incorporate adaptation measures in the water collection and distribution systems, in the regulation of water provision services, and in the efficient on-farm water conservation and use.
42. The SCCF financing will enhance the adaptive capacity of rural people to address CC and its potential impact on the agriculture sector by focusing on measures that promote the improved management of scarce/threatened key resources such as water and soil fertility, reduce environmental risks, increase yields and create opportunities for marketing higher value products. Complementary to the activities carried out by AMMAR, the GEF will aim at covering the additional costs associated with: (i) the investments in management systems and

technologies for climate-resilient efficient irrigation and conservation agriculture; (ii) the adoption of climate-proof methods and technologies for the rehabilitation and modernization of infrastructures and landscape restoration, (ii) the training of trainers and on-farm demonstration trials to raise awareness and build the capacity of farmers on adaptive agricultural production, post-harvesting and marketing, and (iii) the institutional development of policy makers for mainstreaming CC adaptation.

43. A synergistic approach will be adopted between ERASIG and AMMAR by identifying opportunities to introduce climate-resilient, modern technologies such as more efficient distribution and application equipment to reduce conveyance water losses between the channels and the farmland plots, modern low cost technologies for water measurement and new pumping technology, etc. Synergies will also occur in the fields of policy reforms, capacity building and stakeholders' participation to jointly identify and demonstrate suitable adaptation measures and technologies, regulatory and operation solutions - such as the options to involve water users' organizations in irrigation water services - and collective actions improving stakeholders' coordination in the value chains that help guarantee product quality and safety, reduce transaction costs, and enhance the design of marketing strategies and sales operations.
44. The core target group will be the same as that of IFAD baseline: agriculture producers, particularly poor rural women and men with one ha or less of land, who are willing to move towards more commercial production. Leader entrepreneurs, public and private service and mechanization centres, farmer associations, cooperatives, NGOs, and research institutions, will play a major role in the testing of climate-resilient farming systems and technologies and the provision of services and on-farm learning opportunities. Due to the inclusive nature of the proposed irrigation rehabilitation and land improvement, other farmers in the target areas and other agriculture areas of Georgia where MoA/RADF is implementing projects may also benefit.
45. The incremental value of the GEF/SCCF funding will substantially expand the scope of AMMAR investments. ERASIG pilot actions will become models for replication and upscaling in the agriculture areas that will benefit water provided by other irrigation schemes that MoA/RADF will rehabilitate/modernize across other regions in Georgia.
46. The table below summarizes the added value of the GEF intervention in comparison to the baseline.

Table 1. Added value of GEF/ERASIG interventions in comparison to the baseline

	AMMAR BASELINE PROJECT	ADDITIONAL BENEFITS OF GEF INTERVENTION
<p>COMPONENT 1:</p> <p>On-farm efficient irrigation, and soil and water conservation for sustainable agriculture production</p>	<ul style="list-style-type: none"> • AMMAR, will support up to six priority value chains and address critical constraints along the value chains, for example in marketing, processing, storage, post-harvest, primary production or the provision of key services to producers and agri-businesses. • The tactic objective is to <i>increase the aggregate value</i> created within each value chains as the basis for increased profits for farmers and agri-businesses alike and to thereby create the incentives for wider replication and "crowding-in". 	<ul style="list-style-type: none"> • The support to small farmers for climate-proof efficient irrigation, CA/OA systems and technologies, and better adapted crop varieties, shall increase soil water content and reduce 30-80% of water requirements for crops in the converted farmlands. Soil organic matter, soil texture and soil fertility shall significantly improve leading to higher and more stable crop yields under climate variability in drought affected years. • Expected up to 50% yield increases, and higher quality goods with increased market sales. • Soil erosion shall decrease between 60-90% in farmland under CA and restored with shelterbelts and grass cover. • Potential salinization problems will be prevented through adequate drip and/or sprinkler irrigation equipment and scheduling for suitable crops. • Water quality shall improve in farmland under CA due to 20-50% lower use of fertilizers and pesticides. • EIT and CA technology successfully tested and disseminated over 4,750 ha. • Reduction in machinery, fuel and labour requirements for CA will increase profits and available time, mainly for poor-asset women and youth, to diversify income opportunities through multipurpose shelterbelts producing MAP, wild fruits, and honey. • Reduced emissions due to 60-70% lower fuel use, 20-50% lower fertilizer and pesticides use, 0.2-0.7 t/ha/y sequestered carbon and no CO2 release as a

		result of no burning of residues
COMPONENT 2: Landscape restoration to prevent climate-related risks	<ul style="list-style-type: none"> • Rehabilitation of irrigation schemes to improve water availability, and value chain infrastructure to improve quality and marketing opportunities. The baseline will improve farmers' capacity to create workable WUOs for a well-organized use of irrigation. • Irrigation development could be badly affected by wind soil erosion, canal siltation, higher evapotranspiration, and production losses due to CC-risks. Moreover, subsidies and credits supporting maladapted technologies might exacerbate development barriers. 	<ul style="list-style-type: none"> • Irrigation infrastructure will be designed and restored using CC vulnerability assessments and adaptation measures. • Quantification of the benefits deriving from the improvement of value chain-related infrastructure, such as cold storage facilities and certified testing facilities, suggested that it will result in about USD 700,000 of incremental annual benefits in total. Approximately 1,060 smallholder farms and households will be benefiting from the improvement of the value chain-related infrastructures with increase of their annual income from 1.4% to 5% in 20-year perspective. • The SCCF will support the use of "soft" biotechnologies and ecological restoration measures to prevent environmental risks, improve environmental services, and generate complementary income opportunities from wood and non-wood forest products and pastures (e.g. increase of household benefits from beekeeping by at least USD 1,206 per year with the project). • "Soft" biotechnologies help restore water flow regime with beneficial hydro-mechanical effects and protection against soil erosion. • The restoration of vegetation shelterbelts will help reduce about 20% of soil evaporative losses in summer, reduce evaporation from irrigation dams and channels up to 30%, increase at least 25% of yields, and have large wind erosion control benefits.
COMPONENT 3: Enabling environment for climate-risk reduction in agriculture	<ul style="list-style-type: none"> • The baseline will help create an enabling policy environment for value chain development. • Partnerships among value chain actors will be promoted and training will be provided to improve practices – production, processing, marketing – organizational frameworks and VC linkages. • The AMMAR project will complement the Concessional Loan Program initiated by the GoG, as well as will ensure the link between value chain development and credit schemes in the project target areas. 	<ul style="list-style-type: none"> • Service providers will be trained on the adaptation benefits of climate-resilient EIT, CA/OA, and landscape restoration measures and technologies. • On-farm demonstrations will allow small farmers and farmers' organizations to exchange know-how, learn and apply climate-resilient EIT, CA/OA and LR measures and technologies, as well as collaborative frameworks (WUO, Farmers' organizations and cooperatives). • Target farmers' organizations will be trained on and have applied post-harvesting and marketing skills. • Guidelines to mainstream CC adaptation in selected policy frameworks and regulations developed and disseminated to policy-makers. • Information materials featuring lessons learned prepared and disseminated widely to practitioners and society in general.
COMPONENT 4: Project Management	<ul style="list-style-type: none"> • The baseline will cover the establishment of the RADF/AMMAR PIU that will be responsible for the overall programme coordination and implementation. The main M&E functions will be undertaken through the baseline M&E system. 	<ul style="list-style-type: none"> • The SCCF will integrate CC expertise in the programme management and monitoring. • The SCCF will cover the additional costs for a CC Adaptation Specialist to ensure the overall implementation of the SCCF activities and effective integration in the baseline. Experts and service providers will be hired to provide technical support and guidance for the implementation of the different project components, and help integrate CC issues in the AMMAR baseline interventions and M&E system.

47. Numerous national strategies and international development programmes worldwide propose efficient irrigation technologies (EIT) and conservation agriculture (CA) systems for soil conservation and sustainable water use and management as a key CC adaptation strategy that reduces environmental risks, increases agriculture productivity and secures food security. ERASIG proposes the adaptation technologies featured in the GEF/UNEP Guidebook for CC Adaptation in Agriculture, among which the use of pressurized irrigation systems (sprinkler or drip) to improve water management and efficiency, and the adoption of CA systems (the combined use of

reduce/no till, soil mulching, crops rotation and diversification, and integrated nutrient and pest management) to improve soil fertility and soil carbon and water storage.

48. Drip and sprinkler irrigation can help farmers by improving the efficiency of water use and achieving a more even application of water to agriculture land, thereby promoting steady crop growth. In areas subject to climate aridification, pressurized irrigation reduces demand for water, reduces water evaporation losses, and helps prevent salinization problems. The drip technology uses even less water than sprinkler irrigation and is not affected by wind, which represent a major problem in the project areas (sprinkler irrigation will strongly depend on the restoration of tree shelterbelts to reduce the impact of wind in the farmland plots). Scheduled water application will provide the necessary water resources directly to the plant, and when required. Furthermore, fertilizer application is more efficient since these can be supplied through the pipes. Additionally, sprinkler irrigation can reduce the risk of hail.
49. Conservation agriculture (CA) systems have a higher adaptability to climate change because of: (i) a more effective water infiltration and greater soil moisture-holding capacity, that help minimize the impact of extreme weather events such as water stress during drought, and run off erosion and flooding during torrential rain events; (ii) the reduction of surface soil extreme temperatures and fluctuations help minimize the effect of heat waves and frost periods; (iii) the higher soil resilience increase productivity and crop diversification, with a positive effect on food security; (iv) the reduced use of fossil fuel and the increase of soil carbon has an important mitigation effect.
50. ERASIG adaptation measures will also have a mitigation value. Humus losses will reduce from the 1.48 t/ha of baseline scenario to 0.22 t/ha as a result of CA, while ecosystem restoration will contribute to carbon sequestration. The project will provide a holistic and comprehensive approach to the various adaptation and mitigation roles of agriculture and agro-forestry.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objective(s) from being achieved and outline risk mitigation measures

51. Project design has taken into account the strong commitment of the Georgian MoA and MENR to urgently respond to the growing impact of climate risks through the implementation of the SNC and TNA adaptation priorities for the agriculture sector – in particular the restoration of protective shelterbelt vegetation against erosion, and the adoption of efficient irrigation and sustainable agriculture technologies.
52. The adoption of CC adaptation measures and technologies requires substantial policy backstopping. The project will build on current policy reforms supporting farmers land tenure rights and land consolidation, farmers' organizations and farmers' access to finance. The project will improve the capacity of national and local policy makers to mainstream CC adaptation into agriculture policies and regulations.
53. The SNC and TNA recognise the limited capacity of all concerned stakeholders to assess CC impacts, and identify and implement adaptation measures. This constraints needs to be seriously addressed, as experience shows that when knowledge on adaptive agriculture systems and technologies is not properly introduced and adjusted to local contexts, the level of acceptance from farmers is very low and can eventually jeopardise a successful shift to sustainable cropping systems. The SCCF project will pay adequate attention to capacity building and training as a key factor to overcome this risk. The project will engage in a permanent knowledge generation process, aimed at nurturing a critical mass of services providers, and the sharing of practical experience among stakeholders, through a continuous on-farm learning process to test and adapt efficient irrigation and sustainable agriculture principles. The project will also support informal and formal farmers' organizations to facilitate the adoption and management of efficient irrigation and resilient agriculture technologies.
54. The project will identify and support innovation-oriented leader farmers and farmers' organizations, agribusinesses, cooperatives and service providers who are willing to transform maladaptive practices and obsolete production systems into modern and more efficient ones. These champions can play a critical role in overcoming cultural barriers and convince others to shift to sustainable agronomic practices, as farmers tend to trust their peer more than other formal advisers. The project will also tackle farmers' mistrust and complains about irrigation services and conditions, following a community-based participatory approach to address local cultural, socioeconomic and ecological concerns and reach consensus about project interventions.
55. The limited access to convenient credits to invest in EIT and CA technologies for higher value-added value chains is an additional constraint, which might jeopardise the full involvement of smallholder farmers. The

project will benefit from the AMMAR baseline interventions on value chain development and partnerships with financial institutions (FI), supporting multi-stakeholder processes involving all VC actors, and farmers' access to credit and investments in agriculture. Joint AMMAR/ERASIG efforts to remove infrastructure and equipment bottlenecks will facilitate access to a broader set of market opportunities, assets and inputs for the SCCF beneficiaries.

56. The project will follow the same gender approach of other IFAD country operations, aiming to break even in the participation of women and men. Components 1 and 2 have a women oriented focus through the creation of more remunerative employment opportunities mainly linked to agro-processing and marketing of greenhouse vegetable crops, medicinal and aromatic plants, wild fruits and honey, etc.

57. Risks assumptions and suggested mitigation measures are reflected in the table below.

Table 2 - Risks assessment and potential mitigation measures

Risks	Risk rating*	Risk mitigation measures
On-the-ground implementation slowed by bureaucratic constraints	M	The project will adopt a participatory approach with sufficient institutional strengthening. The fact that AMMAR and ERASIG will be fully embedded within the MoA/RADF and that the projects will support the institutional strengthening of the concerned ministerial departments, such as UASCG, will ensure adequate remedial measures to minimize this risk.
Insufficient and inadequate staffing for backstopping	L	The project will engage in a comprehensive training and awareness raising program targeting all concerned actors (government institutions, agribusinesses and cooperatives, service providers, financial institutions, research/academic institutions, NGO and individual farmers and farmers' associations), to ensure that its approach and objectives are fully understood and integrated. The SCCF funding will empower all stakeholders to deal with climate change adaptation.
Loss of institutional memory	M	The project will ensure that all achievements are well documented (soft and hard copies of all documents will be kept). Information on the project will be disseminated to practitioners. The records of the project's achievements will be publicised at national / international meetings and on websites.
Land tenure issues have a negative impact on project implementation and on sustainability of achievements.	M	The project will build on the MoA policy reform and RADF interventions on land tenure and consolidation issues.
Insufficient application of targeting procedures, with special attention to gender issues.	M	Targeting will be aligned with IFAD's policy and approach in Georgia. Effective monitoring and evaluation procedures will be established to ensure that targeting is adequate. Gender issues are already well embedded in IFAD's country programme. The project will strive to involve the maximum number of women beneficiaries, and it will pay special attention to the creation of new jobs for women through complementary, off-farm activities.
Low capacity of local service providers and partners to perform high quality services for the implementation of the specific outcomes (i.e. CA and landscape restoration measures).	L	The choice of service providers will be subject to a rigorous selection process to ensure that the best providers and partners are engaged. The project will make adequate allocations for technical assistance (national and International) to ensure that all technical adaptation aspects are covered. IFAD will enhance the capacity of national service providers through the ToT programme. The project will stipulate performance-based contracts with sub-contractees on a yearly basis in order to monitor compliance with the agreed work plan.
The lack of access to financial services and the poor functioning of local markets for crop products discourage innovation and technological improvement.	M	Increased availability of financial means for smallholder farmers is being experienced in the baseline and in the governmental policy reform that removes some of the main bottlenecks hampering access to credits. Increased efficiency of irrigation and CA minimization of the inter-annual variation of yields might open new market opportunities, especially through exports. The improvement in the annual yields and of local irrigation infrastructures will also increase market opportunities. Partnerships with financial institutions will facilitate farmer's access to credit and other financial services to invest in climate-resilient agriculture technologies
Weak political will to streamline climate-resilient agriculture technologies,	L	MOA's policy reforms demonstrate commitment to support sustainable agriculture, mitigate CC-related risks, and improve the capacity of farmers to produce high quality crops. MENR is very active in CC adaptation and has developed and implemented, in close collaboration with other governmental and non-governmental organizations,

consolidate the institutional framework and enforce laws.		agriculture adaptation measures.
Governance issues, including "Elite capture" with the "plausible recurrent risk" of deviation and capture of the benefits accrued from the project by the "better off".	L	Based on IFAD's achievements in other countries, the project will support lead farmers, agribusinesses, cooperatives and service centres to become key hubs around which neighbouring smallholder farmers can learn and hire services, with subsequent boosting of modern agriculture economic activities and wealth creation in the poor rural areas. Such benefits have a multiplying effect and will facilitate the increase in number of farmers' organizations applying sustainable agriculture practices and facilitating knowhow spreading and services provision to a large number of smallholder farmers.
Overall risk rating	M	
* Risk rating – H (high risk), S(Substantial risk), M (Moderate risk), and L (low risk). Risks refer to the possibility that assumptions, defined in the logical framework may not hold		

A.7 coordination with other relevant/GEF financed initiatives

58. The SCCF project will be country-driven and it will comply with national priorities identified by in the SADG by the MoA, the NCs to the UNFCCC and in other relevant documents, such as the Technology Needs Assessment and Technology Action Plans for CC Adaptation prepared by the MENR. The project will support the implementation of the technologies recommended for CC Adaptation, with special focus on efficient irrigation – drip and sprinkler systems - conservation agriculture, climate-proof infrastructure rehabilitation and soil erosion prevention measures.
59. The project will establish synergies with relevant initiatives from International Cooperation Agencies. The largest donors contributing to CC adaptation in agriculture in Georgia are UNDP, USAID, GIZ and the EU, among others. These donors provide technical and financial support to a wide range of CC adaptation projects, including the ecological restoration, EIT, CA technologies, and the conservation and sustainable use of agro-biodiversity in Georgia. They play a major role in the implementation of Georgian governmental reforms on agriculture, such as the new law on agriculture cooperatives, and support the development of extension capacity and the creation of farmers' organizations and cooperatives.
60. The project will seek collaboration with the EU country office to support the creation of small farmers' organizations, including technical assistance and provision of inputs, equipment and/or small infrastructure to increase production and improve access to markets. The project will collaborate with UNDP and USAID in strengthening the capacity of public and private providers of extension and mechanization services and in facilitating farmer's access to extension and research. ERASIG will draw on lessons learned from the GIZ supported projects on conservation agriculture development and protective vegetation shelterbelts rehabilitation in Kakheti region. The project will also build on the GIZ successful results on increasing production quality standards and reducing trade barriers, in collaboration with the organic association Elkana (e.g. organic agriculture production and marketing of products such as wine, through participation in international organic fairs).
61. The project will also seek to collaborate with and build upon the work of UNDP, SIDA, the Georgian Employers Association and USAID-supported Gender Mobilization Groups to inform poor rural women about the project opportunities to improve women's decision-making and employment opportunities in agriculture.
62. ERASIG investments in research demonstration trials and capacity building of extension agents will draw on lessons from the CGIAR and its ICARDA Programme for Central Asia and the Caucasus with research experiences on improved production systems, new promising varieties of cereals and legumes resistant to drought, salt soils and diseases, IPM, promising livestock management, new water saving and resource conserving agronomic practices, etc.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE

B.1 Describe how the stakeholders will be engaged in project implementation.

Project Implementation Arrangements

Project coordination and supervision

63. MOF is the official Representative of Georgia as the Borrower/ Recipient. In this role MOF will be responsible for: (i) Providing inter-agency coordination when required; (ii) Fulfilling the government fiduciary oversight and management responsibilities; (iii) Providing sufficient counterpart contribution in a timely manner to finance the Project activities (where agreed).
64. The project will be implemented according to IFAD standard procedures, over a period of five years beginning by end 2014. The MOA will be the lead executing agency through the Rural and Agriculture Development Fund (RADF) as the fully blended AMMAR/ERASIG project' implementing agency. The RADF is a semi-autonomous non-profit (non-entrepreneurial) legal entity chaired by the Prime Minister with the Minister of Agriculture serving as the Deputy Chairman.
65. The RADF will be responsible for overall coordination and management of the project, including management and fiduciary aspects. The RADF will be substantially strengthened to manage the forthcoming projects and certain management and staff positions will be shared between AMMAR/ERASIG for efficiency and coordination reasons (especially in areas of finance, procurement and administration)¹⁰.
66. To ensure efficient and effective implementation the project will build on existing and emerging systems for rural service delivery and project management. The RADF shall select and appoint technical staff or contract local service providers, as required, to:
- provide expertise on climate smart agriculture promotion and landscape restoration;
 - facilitate local multi-stakeholder processes in each value chain;
 - provide monitoring and technical back-stopping for farmers' training and technology plots;
 - advise farmers on farm plans;
 - conduct follow-up meetings with farmers who are recipients of grants made available under the Project;
 - act, or designate the Agriculture Project Management Agency (APMA) and/or any other entity(ies) acceptable to IFAD to act, as small grants administrator and manage the small grants scheme for smallholders under Window 1 (Climate Smart Primary Production) of Sub-component 1.2 of the Project;
 - act, or designate APMA and/or any other entity(ies) acceptable to IFAD to act, as large grants administrator and manage the large grants scheme for agribusinesses and cooperatives under Window 2 (Value Chain Development) of Sub-component 1.2 of the Project; and
 - enter into a subsidiary agreement, as appropriate, with APMA and/or any of the entities referred to in sub-paragraphs (vi) and (vii) above setting forth the terms of the implementation of the activities in respect of the Window under Sub-component 1.2 respectively assigned thereto.
67. The recently re-vitalized regional MOA district offices, typically with 4-6 technical staff, will be engaged to: (i) support the project team in the facilitation of the local multi-stakeholder processes in each value chains, (ii) providing monitoring and technical back stopping of the farmer training and technology plots, and (iii) support the project team to follow up with farmers investing using grants.
68. Local service delivery to farmers, including delivery of farmer consultancy, training and management of climate-resilient EIT and CA technology plots, will be subcontracted to local service providers operating in each of the target locations (e.g. farm service centres, mechanization centres, farmer associations, private service providers, cooperatives, NGOs). Potential candidate local service providers will be identified through the initial intensive phase of the value chain multi-stakeholder process in each value chain and encourage to submit proposals to the project for service provision following the project's approved procurement procedures. The local service providers may be provided with supplementary training to address specific knowledge gaps are promoted technology options where necessary.

¹⁰ The WB-funded GILMD project, managed by RADF, will also share positions with AMMAR/ERASIG as far as finance, procurement and administration is concerned.

69. Overall technical supervision and coaching of the local service providers on all aspects of Climate-resilient technologies, climate smart agriculture practices, landscape restoration and farmer consultancy and training will be the responsibility of RADF recruited experts.
70. For civil works, overall responsibility for supervision of design services and civil works would be carried out by RADF Engineers and on-site daily supervisors. For irrigation related infrastructure, representatives of the United Amelioration Service Company of Georgia (UASCG), currently mandated by Government for operation and maintenance of all irrigation infrastructures, would approve any request for payment prepared by contractors and RADF Engineers as well as the final certificate of completed services and works. Day to day supervision of civil works would be carried out by the short-term contracted on-site daily supervisors under the direct guidance of the RADF Engineers. The on-site daily supervisors would be responsible for quantity and quality of works and materials used. RADF Engineers would regularly visit sites during implementation of construction works and be responsible for monitoring quantity and quality of implemented works.
71. Performance based contracts and agreements will be applied as a principle for all recruitments and contracted service providers to assure performance is kept to a high standard.
72. AMMAR/ERASIG Management Team will include:
- Project management
- Project Manager
 - Planning M&E Officer¹¹
 - Finance Manager
 - Accountant
 - Procurement & Contracts Officer
 - Administrative Assistant
 - Drivers (x2)
- Technical staff and Advisors
- Value Chain Coordinator / Deputy Project Manager
 - Climate Change Adaptation Specialist (48 months input over PY1-2-3-4, funded by the GEF project)
 - Value chain & Agri-business specialist (x2 - one staff initially, second post hired as/when workload requires)
 - Engineer - Senior
 - Engineer
 - International Technical Advisor (10 months input over PY1-2)
73. The GEF funded CC Adaptation Specialist (ERASIG Coordinator) will have responsibility for coordination and monitoring the ERASIG project components under the supervision of the PIU Coordinator. He/she will have the responsibility to generate draft annual work plans and budgets for the ERASIG project, including the source and use of funds, and a procurement plan. The draft annual work plans will be submitted to the PSC for review and approval. The PC will also provide the necessary information to the PIU Coordinator to complete the six-monthly and annual progress reports in English to be submitted to IFAD and GEF.
74. To facilitate a quick start to project implementation, the RADF will begin the process of advertising and selection of staff and advisors using the IFAD and/or GEF grant funds so that the team is fully in place and operational as soon as the main IFAD loan becomes effective.
75. The project will hire service providers to support the capacity building component and field demonstration activities, the rehabilitation and LR works, the institutional development of farmers' organizations, and backstopping to farmers on the use of the newly acquired equipment, and with the provision of post-harvesting and marketing support.
76. A project implementation manual (PIM) will be prepared as part of the project start-up activities, to assist the project legal entity with guidance for planning, implementing and monitoring activities, procurement of technical assistance and services, and project investments. The manual will define procedures, criteria and procurement conditions for the project matching grants, addressing climate resilience and gender requirements. Grant funding will facilitate the generation and introduction of innovative technologies for EIT, seed/plant production nurseries, CA/OA, Post-harvesting and value addition, and LR. Grant funding will be provided through a competitive scheme for applications focused on capital investments in equipment and technologies that are

¹¹ Cost sharing of position with WB GILMD project from 2015-2019

aligned with the project objective and outcomes. In order to be eligible for subsidies that match the costs of equipment, applicants will have to fulfil the specific criteria defined in the project Implementation Manual (PIM). The PIU will prepare ToRs and conditions for applicants that will be published in local mass media and online. Following the current basis for IFAD's operations, the applications submitted will follow a two-step selection process of pre-qualification and qualification with field review and final scoring by an Application Evaluation Committee (AEC). All the goods shall be procured through National Competitive Bidding (NCB). Grant applicants may provide a 1:1 match. After the purchase of the goods a transfer agreement will be signed, where applicants will commit to the good maintenance of the equipment and its use during the project timeframe for the agreed objectives.

77. The Manual will be prepared in two volumes. The first volume comprises three parts: (i) the first part presents a general description of the project planning and design, its implementing partners, organizational arrangement, staffing, and their responsibilities; (ii) the second part presents implementation guidelines and procedures for implementation of each project component and preparation of Annual Work Plan and Budget; (iii) the third part presents procedures for reporting, monitoring and evaluation and supervision. The second volume presents guidelines for financing project expenditures.

78. Preparation and submittal of the draft Project Implementation Manual (PIM) for IFAD review and "No Objection" is a key condition for the project to enter-into-force. While the Project Steering Committee will adopt the PIM substantially in the form approved by IFAD, it does not replace the definitive Project Documents. Where there are inconsistencies with any provision of the Financing Agreement, the provision of the Agreement shall govern.

Table 3: Roles and Responsibilities for Matching Grant Scheme Window 1 "Climate-resilient Primary Production - Small grants for smallholders

Process step	Grant Administrator	RADF	Others
1. Promotion of grant scheme (word of mouth, advertising, other projects/partners, events and meetings)		Coordinated by RADF VC team	Local technical service provider MoA District Offices Also via Partner banks / MFI via client base
2. Briefing to interested applicants on scheme and preliminary advice	Jointly by Grant Administrator and RADF VC team RADF Grant Officer and VC team		Supported By MoA District Offices
3. Technical advice to applicants in preparation of application / farm investment plan			Local technical service provider as part of farmer training course. Additional backstopping to farmers from MOA District Offices.
4. Application receipt, checking of eligibility and completeness of applications (desk based)	Grant Administrator		Application to include bank reference confirming account details and identity
5. Technical screening & review of feasibility incl. field verification (technical and financial) and fit with project priorities in each VC	Grant Administrator	Technical guidelines on evaluating typical farm investment plans from VC team	
6. Compliance check (business and fiduciary aspects)	Grant Administrator		
7. Submission to Grant Committee	Grant Administrator		
8. Grant decision	Grant committee		
9. Loan application review and approval (if part of investment plan)			Bank/MFI own standard processes of loan appraisal
10. Contracting and agreement of milestones /disbursement schedule	Grant Administrator	RADF Grant Officer	
11. Disbursement - phased if possible		RADF	
12. Technical support to grantee during grant implementation			MOA District Offices and Local technical service providers
13. Grant monitoring, and reporting	Grant Administrator		Bank / MFI own monitoring and management of loan (where loan taken)

Table 4: Roles and Responsibilities for Matching Grant Scheme Window 2: Value Chain Development - larger grants for agribusinesses & cooperatives

Process step	RADF (plus others)	Grant Administrator (APMA)
1. Promotion of grant scheme (word of mouth, advertising, events and meetings)	Coordinated by RADF via: RADF Value chain team MoA District Offices	Local technical service providers Also via: Partner banks / MFI Regional Development Agencies (were appropriate)
2. Briefing to interested applicants on scheme and preliminary advice	RADF Value chain staff	
3. Technical advice to applicants in preparation of application	RADF Value chain team (limited) Consultants to support business plan preparation if requested.	
4. Application receipt, checking of applicants' eligibility and completeness of applications (desk based)		APMA (online submission the standard review by grant officers using same procedures as GoG scheme)
5. Technical screening & review of feasibility (technical and commercial) and fit with project priorities incl. field verification	APMA	
6. Compliance check (business and fiduciary aspects)		APMA (with partner bank/MFI if applicant is taking loan from partner bank/MFI)
7. Submission to Grant Committee	Grant Committee	APMA
8. Grant decision		APMA Grant Committee (same committee as for GoG scheme)
9. Contracting and agreement of milestones /disbursement schedule		APMA
10. Co-ordination of technical support to grantee during grant implementation	RADF Value chain team	
11. Contract monitoring, disbursement and reporting	Field verification on behalf of APMA by RADF VC team plus MOA District Offices	APMA

79. Following similar procedures as in other IFAD projects in Georgia and elsewhere, the project implementation unit may entrust a financial entity of the operational procedures for managing the ERASIG grant transfers and subsidies to beneficiaries and monitoring grant implementation. The project will support necessary capacity development and training to incorporate the climate resilience criteria in the grant schemes. The execution of the grants will also be closely monitored by the project implementation unit.

80. All international and national providers of services will have to apply for competition by fulfilling specific criteria defined in the IM. The Quality and Cost-based Selection (QCBS) procedures will be used for procuring these consulting services.

B.2 Describe the socioeconomic benefits to be delivered by the project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environmental benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF).

81. The project will be mainly investment-oriented, including additional investment in natural disaster affected irrigation and drainage systems and degraded land improvement and leveraging on-going investments in building the capacity of the MoA's concerned departments, and in the mobilization and capacity building of local authorities, private and public extension organizations, NGO, research organizations, water users organizations, farmers' associations and cooperatives, and individual farmers. This will lead to a higher percentage of spending on physical works and investments for the implementation of tangible, climate-resilient water and soil conservation/management measures that are most likely to enhance the socio-economic benefits of the target

beneficiaries. The trust and relationships to be built with communities under the IFAD baseline interventions will increase the likelihood of success in achieving the project's goal and objectives, and the strong focus on awareness raising and capacity building (all of which will have a strong gender balance focus) will magnify the social impact.

82. Climate change and livelihoods are not linked together in a simple cause-and-effect relationship, but in interactive ways through mediating factors such as access to land, water, and appropriate knowledge and technology, income distribution, gender etc. All these factors have major importance in configuring the "platform" on which adaptation is constructed. By tackling these issues, and by building capacity, spreading awareness and enhancing extension support, targeted communities will be empowered to make adequate choices that would reduce their vulnerability to climate changes and enhance their adaptation capacity.
83. While gender equality is not at present a major area of concern in Georgia, ERASIG will aim to achieve economic empowerment, equal voice and decision-making, and to reduce workloads through direct targeting mechanisms and mass media communication that will allow women to voice their priorities and to offer them equal decision making opportunities. Women and unemployed youth will be the primary beneficiaries of ERASIG project because of their higher CC vulnerability. The project will strengthen women's involvement in capacity development activities – i.e. through the identification of women farmer leaders to support demonstration trials in their farm plots; the definition of gender criteria for the selection of participants to training activities and women's access to climate resilient investments and post-harvesting and marketing support. The promotion of labour saving conservation agriculture technologies will help reduce women's workload and allow them to engage in new income generating activities.
84. The project will seek to collaborate with and build upon the work of UNDP, SIDA, the Georgian Employers Association and USAID-supported Gender Mobilisation Groups to inform poor rural women about ERASIG and, secondly, poor rural women will be expected to be participants in the GEF project Annual Stakeholder Review and Planning Workshops. As noted, a benchmark of 30% minimum representation of women across ERASIG activities has been set, although satisfaction of the targeting criteria described above may mean a much higher percentage of representation, given rural women's longstanding roles in vegetable and livestock production and associated processing both at home and as wage labour in agro-processing companies. The project Annual Work Plans and Budgets would be expected to be gender-sensitive as would employment patterns and levels of remuneration in project-supported investments and selection of project infrastructure. Project monitoring and reporting data will be disaggregated by gender.
85. The project would reach out to approximately 10,000 smallholder households in several Localities of central and eastern Georgia. The promotion of climate-resilient agriculture practices based on the sustainable use of natural resources (especially soil fertility, and water) will have a positive impact on all the participants in the system, and holds adaptation and mitigation benefits through its contribution to increasing environmental services for agriculture production (soil carbon, soil fertility, soil water content, hydrological regulation, crop production, pollination, etc), while reducing energy input, water consumption, and labour power. Households targeted in these villages would benefit from one or more activities:
- a. Incremental socio-economic benefits that would derive from the ERASIG supported investments and capacity development on efficient irrigation and CA/OA technologies applied to arable lands cultivated with high value crops: each of the participating smallholder farm or household would increase annual income by more than GEL 1,000 or about 14% of their annual income only because of the improvement of agronomic practices making use of small irrigation systems (resulting in 20-25% of attributable income increase after the project completion). It is estimated that in total around 3,500 households will benefit from the rehabilitation of small-scale infrastructure systems supported by the project.
 - b. Quantification of the benefits deriving from the improvement of value chain through climate-proof post-harvesting and marketing equipment will result in about USD 700,000 of incremental annual benefits in total. The investment costs estimation is about USD 941,000 over the project implementation period, including 5% of the beneficiaries' contribution. Approximately 1,060 smallholder farms and households will be benefiting from the improvement of the value chain-related infrastructures with increase of their annual income from 1.4% to 5% in 20-year perspective.
 - c. Two models developed in the framework of ERASIG formulation illustrate agricultural businesses likely to be implemented by farmer groups, cooperatives and associations: (i) Cold storage facility (to reduce perishability of products, fetch higher prices during the off-pick season, reduce losses, and increase market opportunities for increased horticultural production of higher quality) with capacity of about 48 tons of fresh fruits/table grapes per year: It is assumed that the total investment in the first year would be GEL 107,268 (USD 61,296); the internal rate of return (IRR) on the incremental net benefits is 72%, which is well above

- the 10% opportunity cost of capital. (ii) Fruits/vegetables dryer for adding value to fruit production (reduced perishability, and higher local and export market opportunities): it is assumed that the total investment in the first year would be GEL 341,250 (USD 195,000). The model records a net present value (NPV) of GEL 360,876 over a fifteen-year period and an IRR of 34.3%.
- d. Matching grants will support private investments that tackle identified value chain constraints and/or demonstrate replicable innovations aligned with each value chain strategy and action plan jointly developed with the value chain stakeholders. The total cost of the grant scheme will be equivalent to USD 6.1 million, which is expected to leverage approximately an additional USD 9.2 million in private investment. In total it will be almost 50% of the project investments.
 - e. Most smallholders grow cereals, fruit and vegetables in small plots of land (0.6-0.7 hectare on average) using conventional technologies with low crop productivity.
 - f. Several models were prepared to analyze the financial and economic impact of the introduction of the Climate-resilient agriculture systems and technologies (CA/OA) for smallholders. It is estimated that implementation of these grants will increase incomes of about 5,000 smallholders by about 1-2%. The analysis is based on the illustrative models of the small grant subprojects likely to be implemented by smallholders, particularly, the production of legume grains, off-season vegetables, fodder crops and fruit trees. The models present: (i) a net benefit of GEL 948 per year for legume grain by a small farm on 2 ha of arable land. The investment costs estimation is about GEL 1,225 (USD 700), which will be mainly spent for training and equipment; the model records an NPV of GEL 3,804 over a ten-year period and an IRR of 74%; (ii) Total investment in the first year in a small tunnel greenhouse on 0.2 ha which can be established by a small farmer on his/her own land plot is estimated at about GEL 8,569 (USD 3,428); the model records a financial NPV of GEL 17,885 thousand over a ten-year period and a very high financial IRR of 103% as the result of a very good return of such investment; (iii) Next model presents introduction of a crop rotation on 1.5 ha generating a net benefit of from GEL 176 to GEL 629 per year; the investment costs estimation is about GEL 1,750 (USD 1,000), which will be mainly spent for training; about 30% of the cost is the beneficiaries' contribution; the model records an NPV of GEL 475 over a ten-year period and an IRR of 22.2%.
 - g. A beekeeping model demonstrates the likely returns from an investment in 15 beehives and one-year operational costs amounting to about GEL 2,739 (USD 1,565). The investment would result in production of 330 kg of honey and 100 kg of wax per year. The model indicates that the household benefits would be improved by at least GEL 2,111 (USD 1,206) with project per year.

B.3 Explain how cost-effectiveness is reflected in the project design.

86. The project is mainly investment-oriented with a view to maximize the impact per GEF dollar. Project management and M&E costs are maintained at the lowest possible level. Investments in an area/sector that is significantly affected by climate change exacerbated risks, such as drought, floods and land degradation, through well targeted investments in innovative techniques to help farmers shift from conventional agriculture to efficient irrigation and CA and restore protective shelterbelts and climate-proof infrastructures would lead to increased cost-effectiveness. Reduced cost in relation to smallholders' entrepreneurship development, access to rural finance, and technical assistance and capacity development for current and new value chains (due to the blended nature of the operation) will further reduce the share of "soft activities", leading to stronger investment and higher return.
87. Cost-effectiveness will be further analyzed during project inception and implementation. The project proposal has been developed with the aim to ensure cost-effectiveness and sustainability also after the project completion. In spite of costs for adopting new equipment, the EIT and CA systems and technologies allow for a highly efficient performance, as they provide a more effective water use, soil water infiltration and greater soil moisture-holding capacity the help minimize the effects of drought and run-off erosion, helps reduce the impact of soil extreme temperatures in crops, and improves soil health conditions resulting in higher yields and crop diversification with a positive effect in food security. Operational and maintenance costs are low, due to estimated 60-70% lower fuel use, 20-50% lower fertilizer and pesticides use, 50% reduction in machinery and labour requirement.
88. Long-term sustainability will be sought through a broad CB programme designed to create a critical mass of efficient practitioners at the basin and national level, and among all VC actors – from institutional to grassroots. The training of trainers will be a key component of this programme. The CB process will integrate participatory elements to fully address issues that affect the long-term sustainability of natural resources and the welfare of local communities (continuous training and on-farm demonstrations to consolidate adoption of adaptation technologies and encourage replication).

89. Replicability will be ensured through the dissemination of lessons learnt in the field demonstration trials, and the locally adapted EIT and CA/OA management systems adopted by the beneficiaries. The provision of adequate equipment that is adapted to the local context will also contribute to replicability.
90. Another important element for sustainability and replicability is the achievement of policy and legislation frameworks that are conducive to the replication and dissemination of new experiences and achievements. The project will engage in a policy dialogue, and work closely with all concerned decision makers and branches of the administration in order to reach the desired policy targets.
91. Climate-proof infrastructures and landscape restoration will contribute to reduce CC-related risks and improve environmental services needed for sustainable agriculture production. Furthermore, the economic use of non-crop vegetation – wood, wild fruits, medicinal/aromatic plants, honey - will increase economic opportunities for smallholders, and especially for women.
92. The project will seek synergies and cooperation with relevant initiatives, mainly those implemented by RADF in the framework of complementary projects such as GILMD, to ensure coherence and compliance, and avoid overlapping and competition over land uses.
93. The sustainability of the project is also guaranteed by the full involvement and empowerment of all VC actors throughout the multi-stakeholder processes in the various components of ERASIG. Smallholders and farmers' organizations (e.g. water users organizations) will be the main targets of the awareness raising and capacity building programme, and they will be the main beneficiaries of the components on production/processing improvement and the provision of new technologies. Partnerships among VC actors will strengthen each individual actor in the VC and will facilitate the investments in climate-resilient technologies, and the production, processing and marketing of high quality products.
94. ERASIG addresses the adaptation priorities identified by the SNC and TNA reports, in terms of awareness raising, capacity building, adaptation technologies, field implementation measures and mainstreaming adaptation needs into sectoral policies, namely agriculture, water, and forestry. The results of the pilot adaptation actions will be widely disseminated within and outside the project area, and beyond the scope of ERASIG in the framework of GILMD second phase and other projects supporting the implementation of the Georgian agriculture strategy.
95. The project will be linked to ongoing regional and global programmes to ensure exchanges and dissemination of information at a wider scale using the IFAD website, UNFCCC, GEF and other platforms for experience sharing.

C. DESCRIBE THE BUDGETED M&E PLAN

MONITORING AND REPORTING

96. Project monitoring and evaluation will be conducted in accordance with established IFAD and GEF procedures. The Strategic Results Framework provides indicators for project implementation along with their corresponding *means of verification*. These will form the basis on which the project's Monitoring and Evaluation system will be built. In line with the GEF/SCCF operational principles, the SCCF M&E activities will be country driven and will provide for consultation and participation.
97. The main objective of the IFAD/SCCF project will be to lessen the impact of climate change on vulnerable rural groups as well as on natural resources critical for sustaining agricultural production and increase food security. The project will undertake a baseline survey to define the status prevalent before the initiation of the project activities, particularly in the target areas and in/around the selected irrigation schemes. Basic data and information relevant to the project will be collected, and project indicators will be measured at this stage.
98. Day to day monitoring of implementation progress will be the responsibility of the project team, based on the annual work plan and its indicators. ERASIG intervention will be fully blended with AMMAR operations and monitoring and evaluation system. The project will include gender expertise, and will adopt a gender-sensitive monitoring and evaluation system, providing disaggregated information by gender and age.
99. The project team will fine-tune the progress and performance/impact indicators of the project during an inception workshop, where specific targets for the first year of implementation, progress indicators, and their means of verification will be agreed. These will be used to assess whether implementation is proceeding at the

intended pace and in the right direction and will form part of the annual work plan. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

100. Measurement of impact indicators related to adaptation benefits will occur according to the schedules defined in the inception workshop. The measurement of these will be undertaken through subcontracts or retainers with relevant institutions, or through specific studies that are to form part of the projects activities, or periodic sampling.
101. Periodic monitoring of implementation progress will be undertaken by IFAD. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.
102. In line with GEF requirements, the IFAD/SCCF project will adopt criteria for its monitoring systems, which are SMART - Specific, Measurable, Achievable and Attributable, Relevant and Realistic, Time-Bound, Timely, Traceable and Targeted. These are duly reflected in the project logical framework. A part of the participatory M&E will be devoted to ascertain the extent of women's participation in programme activities, constraints faced, benefits gained, aspirations met and impact on women's status in the family, their involvement in community affairs and the climate-proofing of their agriculture.
103. **Project Indicators:** Well-defined sets of indicators have been identified, which will be used for both project monitoring and evaluation. Inputs, process, outputs, and outcomes indicators for each component are defined to ensure adequate monitoring. Where possible, all indicators should be measured annually, although cost constraints and availability of data may limit the frequency possible for some indicators.

REPORTING

104. A Project Inception Workshop (IW) will be conducted with the full project team, MoA and relevant government counterparts – MENR, MoF, etc - co-financing partners, IFAD and representation from the GEF as appropriate. A fundamental objective of the IW will be to help the project team understand and take ownership of the project's goals and objectives, as well as finalize preparation of the first annual work plan on the basis of the project's strategic results framework (SRF). This will include reviewing the SRF (indicators, means of verification...), imparting additional detail as needed, and finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.
105. Additionally, the purpose and objective of the Inception Workshop (IW) will be to: (i) detail the roles, support services and complementary responsibilities vis à vis the project team; (ii) provide a detailed overview of IFAD-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on IFAD project related budgetary planning, budget reviews, and mandatory budget rephasings.
106. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify each party's responsibilities during the implementation phase.
107. A Project Inception Report will be prepared immediately following the IW, including a detailed First Year/Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year. This Work Plan will include the dates of specific field visits, support missions by IFAD or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.
108. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of all partners. A section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.
109. The Annual Project Report (APR) is an IFAD requirement and part of central oversight, monitoring, and project management, to reflect progress achieved in meeting the Annual Work Plan and assess performance of

the project in contributing to intended outcomes through outputs and partnership work. The format of the APR is flexible but should include the following:

- An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome
- The constraints experienced in the progress towards results and the reasons for these
- The three (at most) major constraints to achievement of results
- AWP and other expenditure reports
- Lessons learned
- Clear recommendations for future orientation in addressing key problems in lack of progress

110. The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by IFAD together with the project. The individual PIRs are collected, reviewed and analysed by the steering committee (PSC) prior to sending them to the focal point at IFAD headquarters. The PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.

111. As and when called for by IFAD, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by IFAD and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. IFAD is requested to minimize its requests for special Thematic Reports (given that there are some of these already included in the workplan), and when such are necessary, will allow reasonable timeframes for their preparation by the project team.

PROJECT PUBLICATIONS

112. The project will support the preparation of a number of awareness raising printed materials, scientific publications and technical reports that will be available online and/or as hard copies. Printed copies will be disseminated during field work, conferences, through mailing, etc, and will also be available at the PIU and MoA.

EVALUATION

113. **Mid-term Evaluation:** An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will take the form of a qualitative study to determine the progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on: (i) the effectiveness, efficiency and timeliness of project implementation; (ii) will highlight issues requiring decisions and actions; and (iii) will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term, including the revision of indicators if needed. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The ToR for this Mid-term evaluation will be prepared by IFAD.

114. **Final Evaluation:** An independent Final Evaluation will take place three months prior to the terminal review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The ToR for this final evaluation will be prepared by IFAD.

Table 5. Monitoring and evaluation plan and budget

Type of M&E activity	Responsible Parties	Budget USD (SCCF contribution) excluding project team staff time	Time frame
Inception Workshop (IW) and report	Project Coordinator/IFAD	USD 8,500	Within first two months of start up
Baseline survey	Project Team/IFAD	USD 25,400	Within first six months of start up
APR and PIR	Project Team/IFAD		Annually
TPR and TPR report	Project team/IFAD		Every year, upon receipt of APR

Mid-term Evaluation	Project team/IFAD External Consultants (i.e. evaluation team)	USD 21,500	At the mid-point of project implementation
Final External Evaluation	Project team, IFAD External Consultants	USD 27,700	At the end of project implementation
Terminal Report	Project team IFAD/External Consultant		At least one month before end of project

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):
 (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Ms. NINO TKHILAVA	HEAD	Ministry of Environmental Protection and Natural Resources of Georgia	12 SEPTEMBER 2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
John McIntire Associated Vice President, Programme Management Department IFAD		21 August 2014	Rami Abu Salman, Regional Climate and Environment Specialist, Environment and Climate Division IFAD	+39 06 5459 2291	r.salman@ifad.org

ANNEX A: PROJECT RESULTS FRAMEWORK

PROJECT RESULTS FRAMEWORK (PROJECT LOGFRAME)

Output	Key Indicators	Means of Verification	Assumptions and Risks
<p>SCCF Goal Enhancing the adaptive capacity of farmers to climate risks through resilient irrigated agricultural systems.</p>	<ul style="list-style-type: none"> - Trends in integrity and degree of resilience of agriculture systems - 10,000 supported households increase their asset index by at least 10% 	<ul style="list-style-type: none"> - Project M&E system - Household income and expenditure surveys - RIMS impact survey questionnaire (baseline and final) 	<ul style="list-style-type: none"> - Political and economic stability in the country - Macro-economic conditions remain stable or improve to promote investment - Commitment of all concerned actors
<p>SCCF Objective Improve water availability, farmland productivity, and smallholders' income through investments in climate-resilient farming systems and VC technologies.</p>	<ul style="list-style-type: none"> - Increase of >20% of real net household farm income for at least 80% of the 10,000 supported households. - More than 20% increase in total value (relative to reference market price) of surplus agriculture production of targeted VCs sold by participating producers, traders and agribusinesses (disaggregated by gender and age). - Climate-resilient agriculture production practices are adopted by at least 50% of trained smallholder farmers (disaggregated by gender and age). 	<ul style="list-style-type: none"> - Project M&E reports - Government data - Value chain interviews/focus groups - RIMS surveys 	<ul style="list-style-type: none"> - Concerned Ministries, local institutions, and VC actors are strongly committed to project objectives - Agriculture policies and programmes and rural finance allow to operate efficiently - Appropriate technology and means available in a timely fashion - Local capacity can be built adequately
<p>Component 1. On-farm efficient irrigation and soil and water conservation for sustainable agriculture production Total Budget: USD 3,102,000</p>			
<p>Outcome 1.1: On-farm water efficiency and farming practices in irrigation and rainfed crop production systems are improved / Contributes to CCA-1</p>			
<p>1.2.1. At least 4,750 ha in the project areas are managed using efficient irrigation technologies (EIT) and conservation agriculture (CA) systems that enhance yield and water use efficiency for selected crop value chains.</p>	<ul style="list-style-type: none"> - At least 4,750 farmers have improved on-farm soil and water conditions through climate-resilient EIT and/or CA. - At least 3,000 farmers report diversification of farming systems with higher economic and environmental benefits from the deployment of EIT and/or CA (disaggregated by gender). - Up to 1,000 small grants made to farmers and at least 30 grants made to agribusinesses and processors in target value chains 	<ul style="list-style-type: none"> - Baseline and impact surveys - Interviews/focus groups - Studies and surveys - M&E reports Government data 	<ul style="list-style-type: none"> - Local farmers and other key actors are willing to become involved - The project can secure the required technical capacity - Suitable irrigation and CA equipment, crop varieties and inputs are available in the country
<p>Component 2. Landscape Restoration to prevent climate-related risks Total Budget: USD 1,400,000</p>			

Outcome 2.1: Landscape restoration plans developed and implemented to prevent climate-related risks (soil erosion, siltation and flooding)/ Contributes to CCA-1			
2.1.1. 150 Landscape restoration (LR) plans incorporating climate-resilient infrastructures and vegetation restoration interventions in erosion-risk vulnerable areas are developed and implemented.	<ul style="list-style-type: none"> - At least 4,750 ha receiving reliable irrigation water supply from climate-proof rehabilitated and properly maintained irrigation schemes - Up to 150 Landscape restoration plans implemented 	<ul style="list-style-type: none"> - Infrastructure completion/status reports - Restoration documents and monitoring reports - Interviews/focus groups - Supervision mission reports 	<ul style="list-style-type: none"> - All concerned local actors are willing to participate - Planning is carried out effectively and timely - Lack of funding to operate and maintain public rural infrastructure
Component 3. Enabling environment for climate-risk reduction in agriculture Total Budget: USD 548,000			
Outcome 3.1: Concerned institutions are empowered through capacity building to develop a more conducive policy environment for climate-resilient agriculture and water and soil conservation/ Contributes to CCA-2			
3.1.1. A policy dialogue is triggered to mainstream CC risk reduction into water and soil conservation in agriculture	<ul style="list-style-type: none"> - Number of civil servants, farmers, NGO members, extension agents and researchers reporting good knowledge on CC risk reduction measures in irrigated agriculture, and soil and water management 	<ul style="list-style-type: none"> - Policy assessment report - Interviews/focus groups - Materials produced 	<ul style="list-style-type: none"> - Firm commitment and cooperation of relevant governmental bodies
Outcome 3.2: The adaptive capacity of key agriculture practitioners on climate-resilient soil and water management practices in agriculture is developed and applied in the value chain cluster areas/ Contributes to CCA-3			
3.2.1 A training programme is designed and implemented to build the capacity of service providers on efficient irrigation, sustainable soil & water management, and landscape restoration.	<ul style="list-style-type: none"> - At least 50 staff of service providers and regional MoA officers receive ToT on climate-resilient EIT/CA for target VC production - The volume of services and inputs related to climate-resilient technologies from service providers and used by farmers in target VC cluster areas increases by 20% over current levels 	<ul style="list-style-type: none"> - Training modules - Agendas and evaluation forms of training programmes - Tools produced 	<ul style="list-style-type: none"> - All concerned actors are willing to participate - The project is able to provide relevant TA and identify best practices
3.2.2 At least 3,000 farmers participate in 30 on-farm demonstrations where new irrigation and CA production systems and technologies are tested and validated	<ul style="list-style-type: none"> - At least 3,000 smallholder farmers trained in climate-resilient farming systems and technologies - 30 demonstration plots on EIT and CA technologies and farming systems provide successful results in soil and water improvements and higher yields from selected VC crops 	<ul style="list-style-type: none"> - Contracts and agreements with farm leaders, research centres and NGO - Field monitoring data - Reports from learning tours and feedback from participants 	<ul style="list-style-type: none"> - Commitment from relevant governmental bodies is secured - All concerned local actors are willing to participate - The project is able to provide relevant TA and identify best practices

ANNEX B: RESPONSES TO PROJECT REVIEWS (FROM GEF SECRETARIAT AND GEF AGENCIES, AND RESPONSES TO COMMENTS FROM COUNCIL AT WORK PROGRAM INCLUSION AND THE CONVENTION SECRETARIAT AND STAP AT PIF).

STAP Comments	GEF Responses
1) Need to improve description of outcomes and outputs	<ul style="list-style-type: none"> • GEF Secretariat review considers that the project framework included in the Full Project Document and CEO Endorsement is sound and sufficiently clear.
2) Need to consider interaction between climate change and existing stressors in the additional cost reasoning	<ul style="list-style-type: none"> • The project adaptation approach includes measures to support investments, capacity building needs, and policy improvements to facilitate smallholders in the adoption of adaptive agronomic practices and technologies that reduce anthropogenic stressors (e.g. water losses due to deteriorated irrigation infrastructure and inefficient irrigation systems; soil salinization due to poor irrigation practices; soil degradation due to mal-adaptive agronomic practices; soil erosion due to windbreaks cutting and overgrazing; etc) while facilitating the mitigation of the effects of CC impacts. • Additionally, the project will help restore vegetation shelterbelts around irrigation infrastructure and farmland plots to improve the environmental services supporting agriculture production, thereby increasing the agro-ecological and socio-economic (e.g. diversification of income derived from by-products) resilience to CC.
3) Need to define what type of soil and water conservation technologies will be used.	<ul style="list-style-type: none"> • The project will support efficient micro-pressurized irrigation technologies (e.g. drip irrigation, bubbler irrigation, micro- and mini sprinkler) for horticulture products, potatoes, fruits, and fruit tree production, as described in the full project document and CEO endorsement document. • The project will support investments in conservation agriculture (CA) with an organic agriculture (OA) approach, as described in the full project document and CEO endorsement document.
4) Define adaptation activities and benefits, and how benefits will be measured and monitored during implementation.	<ul style="list-style-type: none"> • Adaptation activities and benefits, and the budgeted M&E plan are described in the full project document and CEO Endorsement Document. • The attached Tracking Tool includes information for all relevant indicators in line with the objectives and outcomes identified in the Focal Area Strategy Framework.
5) Existing weather-related risks not addressed by the baseline and how GEF project will address them for strengthening cost reasoning.	<ul style="list-style-type: none"> • The existing weather-related risks not addressed by the baseline are mainly drought, strong winds and heavy rainfall events. These risks will be exacerbated by climate change, therefore the adaptation measures and technologies proposed by ERASIG will contribute to their mitigation. • ERASIG investments in climate-proof technologies for irrigation infrastructures and in the restoration of vegetation shelterbelts will be additional to the irrigation infrastructure rehabilitation actions supported by the baseline, contributing to mitigate siltation, erosion and evaporation caused by strong winds, torrential rainfall, and drought events. • ERASIG investments in efficient micro-pressurized irrigation technologies (EIT) and CA/OA systems and technologies will contribute to the baseline objective to increase production while mitigating the effects of drought, torrential rainfall and strong winds in land productivity (e.g. CA/OA ensures more effective water infiltration and greater soil moisture-holding capacity, that help minimize the impact of extreme weather events such as water stress during drought, and run off erosion and flooding during torrential rain events; CA/OA helps reduce the surface soil extreme temperatures and fluctuations, minimizing the effect of drought and frost periods. In areas subject to climate aridification, pressurized irrigation reduces demand for water and evaporation

	<p>losses, and helps prevent salinization).</p> <ul style="list-style-type: none"> • Further description is included in the full project document and the CEO Endorsement document.
6) Give more information about CA contribution to CC adaptation and consider CGIAR and ICARDA work on sustainable agriculture and CA testing activities in Georgia and the region.	<ul style="list-style-type: none"> • The full project document and CEO Endorsement document include more information about CA, as well as recommendations to collaborate with CGIAR/ICARDA in the implementation of CA demonstration plots.
7) Outline benefits and challenges of Weather Index-based Insurance (WII)	<ul style="list-style-type: none"> • The issue of WII was discussed with project partners during project formulation missions and in the framework of negotiations with the Government. As a result of these, it was agreed to withdraw WII from the project. • Project partners and consulted experts consider that WII is not easily applicable in most cases addressed by the project - e.g. irrigated crops are less suited for climate index-based Insurance due to a less likely correlation between crop losses and adverse weather events; in the case of torrential rainfall, while excess rainfall can be indexed, flooding is a very localized hazard, and it is difficult to index because there is no one-to-one relationship between amount of rainfall at a specific location and amount of flooding. • However, the GEF project will support dialogue between MoA and the private sector (financial institutions and insurance companies) to identify opportunities for public-private collaboration on accessible agriculture insurance and financial services for small farmers with limited economic resources. ERASIG will facilitate contacts between farmers willing to invest in climate-proof agriculture technologies and financial institutions and insurance companies operating in the project areas and interested in this type of investments. • The GEF project will support MoA plans to elaborate a clear national strategy for the development of an agricultural insurance market and enable increased availability of insurance products as part of Outcome 3.1. Meanwhile, the project will wait for the results of pilots on WII supported by other actors (e.g. USAID) in order to understand feasible options for future interventions.
8) Need to integrate gender more thoroughly in the proposal and to define explicitly the intended socio-economic benefits and links to adaptation benefits.	<ul style="list-style-type: none"> • The requested information on gender integration and socio-economic benefits has been included in the CEO Endorsement document.
9) Add as a potential risk for implementing WII systems the poor availability of robust and good quality climate data.	See previous response in point (7).
Council Comments (Germany)	GEF Responses
1) Recommendation to identify for which regions and which production systems irrigation should be promoted.	<ul style="list-style-type: none"> • ERASIG is fully blended to baseline (AMMAR) interventions mainly focusing on the rehabilitation of irrigation schemes in Central and Eastern Georgia, therefore the Additionality provided by the GEF project has a major focus on adaptive management systems and technologies to optimize irrigation water use under CC projections. • ERASIG will promote efficient irrigation technologies (EIT), namely micro-pressurized irrigation systems (e.g. drip irrigation, mini- and micro-sprinkler irrigation, bubbler irrigation, etc), for high value crops, such as horticulture products, fruit trees, potatoes, etc. • The project will adopt a participatory process with all concerned stakeholders and beneficiaries to identify suitable areas for crop production under micro-pressurized irrigation systems, and to select appropriate cropping patterns, based on agro-ecological and socio-economic issues, as well as market opportunities. The project will support the implementation of soil analysis, technical expertise for modelling optimal cropping patterns and irrigation

	<p>systems, and the implementation of market studies to facilitate decision-making.</p> <ul style="list-style-type: none"> • ERASIG will also support farmer's investments in CA systems and technologies (following OA principles) as the best option for adapting agriculture production to CC. The project will build on the GIZ successful results on the use of CA technologies for increasing crop production under drought conditions in the Dedoplistkaro region in Eastern Georgia.
<p>2) Recommendation to include the rehabilitation of windbreaks and sustainable pasture management in the project concept.</p>	<ul style="list-style-type: none"> • The GEF project Component 2 addresses landscape restoration as a means to prevent climate-related risks, with a special focus on vegetation shelterbelt restoration and sustainable pasture management, responding to the CC adaptation priority measures and technologies proposed by the Government (e.g. SNC and TNA documents). • Vegetation shelterbelt restoration will include several measures to reduce wind/water erosion problems impacting irrigation schemes, water catchments and farmlands, including the rehabilitation of multi-purpose shelterbelts (hydrological regulation, prevention of erosion/siltation problems, soil fertilization, provision of wood and non-wood forest products, pollination services, etc), the restoration of riparian banks, the protection of farmland plots with vegetation hedges, and the sowing of herbaceous species in degraded grasslands and along intercropping lines, etc. • The project will promote agreements with the public company in charge of the irrigation schemes, municipalities, producers and water users organizations and individual farmers, to identify the most vulnerable areas to soil erosion and siltation, and to plan suitable landscape restoration measures.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS¹²

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To-date</i>	<i>Amount Committed</i>
1. Selection of pilot irrigation and drainage systems devastated by recent national disaster for rehabilitation through a mix of techniques.	33,500	31,917.38	31,917.38
2. Development and implementation of landscape restoration plans for the rehabilitation of degraded and eroded land in disaster stricken areas.	14,500	19,800	-5,300
3. Review and assessment of the climate adaptation vulnerability in Georgia and promoting disaster risk reduction.	16,650	8,207.33	8,207.33
4. Assessment of awareness and capacity needs of institutional stakeholders, community leaders and rural households on climate change adaptation and risk assessment.	7,450	8,916.60	8,916.60
5. Preparation of project costing and implementation manuals	2,400	2,918.16	2,918.16
6. Stakeholder consultations	3,000	0	0
7. Travel **	12,500	13,429	13,429
8. PPG management	0		
TOTAL			

¹² If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)