



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



Empowered lives.
Resilient nations.

PROJECT DOCUMENT

Georgia

Project Title: Strengthening Climate Adaptation Capacities in Georgia
Project Number: 00094354 (output 00113003)
Implementing Partner: Ministry of Environment Protection and Agriculture of Georgia
Start Date: 1 December 2018 **End Date:** 14 November 2023 **PAC Meeting date:** 8Nov2018

Brief Description

To deal with the hydro-meteorological hazards that are intensifying due to climate change, Georgia needs to move towards a more proactive integrated risk-informed approach. A multi-hazard early warning system and effective hazard emergency response rely on effective forecasting and warning, that also includes knowledge of where and when the hazards will occur (high risk areas identified by hazard mapping) as well as there is a need to have critical climate risk information that would enable the Government of Georgia to implement a number of nation-wide trans-formative policies for reducing exposure and vulnerability of the population and economic sectors to climate induced hazards.

The overall objective of the project is development of well-established system for multi-hazard risk knowledge to ensure effective climate risk management of all hydro-meteorological hazards in Georgia geographical coverage of the project interventions is a nation-wide, particularly 11 major river basins in Georgia: Enguri, Rioni, Chorokhi-Adjaristskali, Supsa, Natanebi, Khobi, Kintrishi, Khrami-Ktsia, Alazani, Iori, Mtkvari (same as Kura) focusing on the following hazards: floods, landslides, mudflows, avalanches, hailstorms and droughts.

The proposed project is designed to be complimentary to the overall initiative funded by Green Climate Fund (GCF) /Government of Georgia/Swiss Agency for Development And Cooperation (SDC) aimed to reduce the exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action which will serve 1.7 Million ordinary Georgians currently at risk from climate-induced hazards.

The impact hypothesis of the project is as follows: i. standardized and harmonized national multi-hazard mapping and risk assessment methodology enables development of unified risk information on national level, ii. adequate Institutional and legal frameworks for multi-hazard mapping and risk assessment is in place and implemented to provide clear structure for development of risk information; iii. Enhanced long-term technical and human capacities of relevant agencies and institutions responsible for multi-hazard mapping and risk assessment provide adequate and sufficient risk information iv. Multi-hazard maps and risk profiles for 11 river basins in Georgia, which provides valuable information on existing multi-hazard risk both on national and local levels for further risk-informed development planning; v. Local (municipal) preparedness to multi-hazard risks is improved through enhanced capacities for risk-informed preparedness planning and existence of the risk-informed preparedness plans.

The project contributes to:
UNPSD 2016-2020: Outcome 8: By 2020 communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction;
CPD 2016-2020: OUTCOME 4: Communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction/**Output 4.2.** By 2020, environmental knowledge and information systems enhanced, including capacities for regular reporting to international treaties.
UNDP Strategic Plan 2018-2021: Outcome 2. Accelerate structural transformations for sustainable development/ **Output 2.3.1** Data and risk-informed development policies, plans, systems and financing incorporate integrated and gender-responsive solutions to reduce disaster risks, enable climate change adaptation and mitigation, and prevent risk of conflict
 Indicative Output with gender marker:
 Output 00113003: GEN2(Gender equality as a significant objective)

Total resources required:	USD 5,000,000	
Total resources allocated:	USD 5,000,000	
	Donor (SDC):	USD 5,000,000
Unfunded:	0	

Implementing Partner:	UNDP
 Levan Davitashvili Minister of Environment Protection and Agriculture of Georgia Date: 7.12.2018	 Louisa Vinton Resident Representative Date: 5/12/2018

I. DEVELOPMENT CHALLENGE

Georgia is a country with a transitional economy which has undergone notable transformation since 2003 from “failed state” to the middle-income country. It has an HDI of 0.769 and ranks 70th out of 193 countries. Georgia’s economy is reliant on trade and services (17%), industry (11%), transport and communications (11%), real estate, renting and business activities (10%) and agriculture (9%). Despite the notable economic growth since 2003 poverty levels, particularly in rural areas, and income inequality, remains high. 43% of the population lives in rural areas, and 56% of people are engaged in mainly subsistence agriculture.

Georgia is a transcontinental country located along dividing lines of Asia and Europe in the South Caucasus region, between the Black sea to the west, the Greater Caucasus mountains to the north, and the Lesser Caucasus mountains to the south. Due to the diverse and complex terrain of the Caucasus mountains, its significant influence and the influence of the Black Sea and Caspian Sea on the climate and weather of the region, Georgia faces a number of climate-induced hazards including floods and flash floods, climate-induced geological hazards (including landslides, mudflow, debris flows), droughts, soil erosion, severe winds, hailstorms and avalanches.

Georgia is ranked the 84th out of 191 countries on the Index for Risk Management (INFORM – 20179) scale which covers all types of risks (political, natural, disaster risk) and coping capacity. It ranks the 88th for Hazard Exposure and the 139th for lack of coping capacity. With an overall index of 3.9 out of 10 (10 being the highest/worst), it is at the global average overall. However, with hazard and exposure index (natural hazards) of 4.5 (floods and droughts have indices of 5.7 and 5.4 respectively), vulnerability index of 4.6 (vulnerable groups index of 5.9), and institutional coping capacity of 4.6 (DRR index is 4.7 and Governance 4.4) the disaster risk profile of Georgia is much worse than the overall figures suggest.

Furthermore, according to Georgia’s the 2nd and the 3rd National Communications, under climate change the frequency, intensity and geographical spread of extreme hydro meteorological hazards will increase and may result in significant impacts on key sectors including agriculture, critical infrastructure (transportation networks, buildings, roads, water supply, energy installations), natural resources and eco-systems, glaciers and forests. Georgia’s INDC (Intended Nationally Determined Contribution) to the UNFCCC underlines the problem of intensifying climate-induced extreme events and states that the “establishment of Early Warning Systems for climate related extreme events is considered as a priority measure by the Government”. It also states that without international support the country is unable to deal with negative impacts of the climate change. It estimates economic losses without adaptation measures during 2021-2030 at about \$US 10-12 Billion USD, while adaptation measures will cost \$1.5-2 Billion USD. Georgia needs international support for the development and transfer of technologies to increase its adaptive capacity. The implementation of adaptation actions for the period 2021 – 2030 requires the continuous development and strengthening of capacity of communities to reduce their vulnerability to adverse impacts of future climate hazards”.

Economic assessment of the impact of hydro meteorological hazards under climate change conditions conducted for the feasibility study under GCF approved proposal on “Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia”¹, shows that 1.7 Million people (40% of the population) including the most vulnerable communities in remote rural and densely populated urban areas are at risk from the main hazards. Annual average damages (AAD) to properties from floods are estimated at 116.3 Million GEL (\$51.2 Million USD) without climate change and at 282.7 Million GEL (\$124.4 Million USD) with climate change. The risk to agricultural land from all hazards is between 251,225 ha and 325,020 ha under baseline and climate change conditions respectively. Annual damages to agriculture from flooding alone would be 126.3 Million GEL (\$55.6 Million USD) and 154.2 Million GEL (\$67.8 Million USD) under baseline and climate change conditions respectively.

Disaster risk reduction governance in terms of prevention, mitigation, preparedness, response/recovery is very poor both on national and local government levels in Georgia. One of the reasons is the limited capacity of relevant authorities to address intensifying climate risks due to lack of accurate climate risk information and lack of capacity of relevant institutions to generate such information based on a standardized and harmonized national hazard, risk and vulnerability modelling and mapping framework. There is no definitive hazard, risk or vulnerability mapping for Georgia for any of the hydro meteorological hazards that it faces and the technical and financial capacity to undertake such mapping is lacking. In addition, there is no single regulation defining requirements and methodologies for hazard mapping, including procedures, criteria, data needs, formats, assessment methods. Practices applied are based on old Soviet guidelines used by National Environmental Agency (e.g. field observations and statistical analysis method for series of hydro-meteorological data) combined with some new technologies (e.g. hydraulic (1 D, 2 D, MIKE and hydrological modelling) and knowledge acquired under various donor funded projects but, at a lesser extent. Meanwhile the EUAA requires

¹ The proposal was approved by GCF with total budget of USD 27.054mln to be implemented by UNDP, aimed at developing nation-wide multi-hazard EWS

the country to adopt such regulations in line with EU flood directive. Thus, there is a need for adopting regulation on climate-induced hazard mapping, based on EU flood directive as well as on the best practices and statutory requirements of EU countries.

In addition, at present, planning platforms for multi-hazard risk management, including disaster preparedness and response plans do not exist at regional (river basin), municipal and community levels, neither do the relevant methodological and knowledge base for carrying out planning exercises. Absence of the comprehensive risk information and legislative and policy frameworks resulted in weak land use, spatial planning and climate risk management, and poor or in most cases no-climate risk informed mitigation measures, leading to increased exposure of communities to damages, losses and loss of lives. Feasibility Study under GCF funded proposal identified that the large proportions of the population at risk from hydro meteorological hazards (1.7 Million, 47% of the population) currently lack the coping capacities and adaptation strategies at community and individual level to adapt to climate change and to manage and minimize their exposure and resilience to hydro-meteorological hazards. And one of the major causes for the situation is lack and/or insufficient risk knowledge in the country.

Barriers for changing the existing situation were identified through feasibility study conducted under the GCF funded proposal as well as the assessment reports on hazard mapping capacity, DRR/CCA norms and architecture, and analysis of IRM/CCA practices in municipalities of Georgia on the example of the Adjara AR, implemented under the SDC funded Inception Phase of the project, and are listed below:

1. Lack of definitive and technically appropriate climate-induced hazard maps on which to base risk-informed decisions and undertake risk-informed activities such as spatial planning, floodplain management policy and emergency response;
2. Limited technical capacity and experience of responsible agency to produce hazard and risk maps for all hydro meteorological hazards; Limited knowledge and implementation of modern hazard modelling tools; limited knowledge and capacity to produced hazard maps;
3. Lack of key data sets for development of flood hazard models, due to cost (e.g. Digital Elevation Models of the floodplain; and due to lack of systematic data collection capabilities within relevant government agencies;
4. Lack of clear definition of responsibilities for risk information, i.e. NEA is responsible for hazard risk information meanwhile there is no clear definition of mandate for risk and vulnerability knowledge and limited cooperation between risk information related government agencies and scientific sector;
5. Institutional responsibilities not properly defined within Georgian law;
6. Current institutional arrangements do not allow for efficient or effective cooperation on hazard management.
7. Absence of multi-hazard planning platforms at municipal, sector and river basin levels

This project has been designed to contribute to overcoming these main barriers, identified within the SDC funded Inception Phase of the project: Strengthening the Climate Adaptation Capacities in Georgia and GCF project.

II. POLICY CONTEXT

The key national programmes and plans that the proposed project will build upon and contribute to are the National Plan of Action for Capacity Development in DRR (2015-2019) and National DRR Strategy and Action Plan (2016-2020).

In 2015 the Government of Georgia developed the **National Plan of Action for Capacity Development for Disaster Risk Reduction** based on the Disaster Risk Reduction Capacity Assessment supported by UNDP in 2014. The Plan clearly reflects climate vulnerability and climate change as underlying risk factors and the need for climate change adaptation actions. The project directly supports prioritizing national actions under two of the five result areas of the national plan targeting improved information and knowledge on climate related disaster risks, enhanced early warning and innovation. As envisaged in the National Plan, capacity development activities under the monitoring and early warning pillar target development of:

1. Unified methodology and tools for multi-hazard risk assessment, mapping and monitoring;
2. Local-level detailed hazard mapping and risk assessment;

Furthermore, the project will ensure compliance with relevant EU directives under the **EU Georgia Association Agreement**. Particularly, EU-Georgia Association Agreement (Article 302) requires Georgia to develop accessible, unified special environmental information management systems; Furthermore, Annex XXVI to the EUAA obliges the country to transpose Article 4, 5, 6 and 7 of EU Directive 2007/60/EC of the

European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks into national legislation and systems and, implement them including preliminary flood assessment, flood hazard and risk mapping and preparation of flood hazard maps.

EU directive on Flood Assessment and Management does not give a detailed methodology and/or criterion for flood hazard assessment. Instead it sets general criteria for hazard mapping. Member States have the flexibility to assign specific flood probabilities to these scenarios. For each scenario, Member States must prepare information on flood extents and water depth or levels. Where appropriate, Member States could also prepare information on flow velocities or the relevant water flow. The maps may show other information which the Member States considers useful such as the indication of areas where floods with a high content of transported sediments and debris floods can occur and information on other significant sources of pollution. For coastal flooding where there is an adequate level of protection in place, and for groundwater flooding, Member States can decide to limit the preparation of flood hazard maps to low probability or extreme events.

Each Member State should also report through WISE system the following:

1. Summary (< 10.000 characters) on methods used to identify, assess or calculate: flooding extent (including resolution of digital terrain models); flooding probabilities (including information as to why particular probabilities have been selected) or return periods; depths or water levels; velocities or flows (where appropriate); models used, datasets, uncertainties, if and if so how, climate change has been considered in the mapping;
2. Where particular flood scenarios have been omitted, a summary (< 5000 characters) information on the exclusion of particular groundwater or coastal flooding scenarios, and a justification for these decisions, including information on the justification that adequate level of protection is in place in coastal areas and where Articles 6.6 and 6.7 have been applied.

INSPIRE Directive is the European Directive 2007/2/EC establishing an Infrastructure for Spatial Information in the European Community (INSPIRE). It entered into force on the 15th May 2007 and will be implemented in various stages, with full implementation required by 2019.

The INSPIRE aims to create a European Union (EU) Spatial Data Infrastructure (SDI), enabling the better sharing of environmental spatial information and public access to spatial information across Europe.

INSPIRE is based on a number of common principles:

- Data should be collected only once and kept where it can be maintained most effectively.
- Seamlessly combine spatial information from different sources across Europe and share it with many users and applications.
- Information collected at one level/scale to be shared with all levels/scales.
- Geospatial data for good governance at all levels should be readily & transparently available.
- Easy to find what geospatial information is available, with conditions of acquisition and use.

Although Georgia does not have an obligation for transposing INSPIRE into Georgia, the GoG has already started this process. With a view to implementation of the Association Agreement Decree #59 of the Government of Georgia was adopted on January 26, 2015 On Approval of the National Action Plan of 2015 for the Implementation of the Association Agreement between the European Union and the European Atomic Energy Community and their Member States of the one part, and Georgia, of the other part and Association Agenda between Georgia and the European Union, which Decree serves the purposes of fulfilment of international commitments. Article 3843 of this Plan provides for the following commitment: development of consistent method of collection of environmental data for various ministries, within the framework of Shared Environmental Information System (SEIS) and accessibility of environmental information for the society at large (Association Agenda: 2.6 Other Cooperation Policies; Environment and Climate Change) - authorized body - Ministry of Environmental Protection and Agriculture).

Regarding the international commitments of the country, the project objectives follow priority 1. Understanding disaster risk under **Sendai Framework for Disaster Risk Reduction (2015-2030)**. Particularly the priority 1. entails that policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

To achieve this, the Sendai Framework identifies following activities among others:

- a. Promote the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, considering the needs of different categories of users, as appropriate;

- b. Encourage the use of and strengthening of baselines and periodically assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and their possible sequential effects at the relevant social and spatial scale on ecosystems, in line with national circumstances;
- c. Develop, periodically update and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, geospatial information technology;

The project will contribute to the achievement of **SDG 13**. Climate action, particularly the following goals:

- Strengthen the resilience and adaptive capacity to climate-related hazards and natural disasters in all countries;
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning;
- Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

III. INCEPTION PHASE ACHIEVEMENTS AND LESSONS LEARNED

Inception Phase of the project provided valuable information required to identify intervention strategy on climate change adaptation focusing on hazard mapping and related capacity development. In addition, the analytical papers developed during the Inception Phase provided the country with additional baseline information required for the creation of the enabling environment for enhancing disaster risk management capacities through improved hazard mapping capabilities.

More specifically, the Inception Phase resulted in the availability of 1) required data and information to inform the elaboration of specific programmatic interventions for strengthened hazard mapping capacities in Georgia, related to identification of existing capacity gaps and recommendations both on national and sub-national, local levels 2) identified hazard mapping data gaps and needs analysis that enable the project to plan accordingly the activities related to ensuring availability of the data required for multi-hazard mapping.

The outputs were achieved through active cooperation and consultations with relevant stakeholders.

Summary of the output findings under the Inception Phase project, the project interventions were based on is given below:

1. Comparative analysis of the climate change adaptation (CCA)/Disaster Risk Reduction Architecture and Norms in Georgia

The study examined existing state and prospects of climate change adaptation and disaster risk reduction systems in Georgia and compared with the status of the progress achieved in approximation with EU standards as outlined in Georgia and EU Association Agreement.

Summarising the findings of this baseline study, following conclusions and recommendations were drawn:

CCA/DRR Governance

- Reporting requirements under international conventions
 - Reporting requirements under UNFCCC are met though, it is advisable to set up QA/QC system for climate change predictions and vulnerability assessments
 - Georgia is obliged to submit on-line Sendai Framework monitoring report as of March 2018 against the Programme's targets and indicators. Data readiness report submitted in 2017 indicates on absence/shortage of data on major indicators to be reported. Thus, there is a need for developing DRR statistics and setting monitoring and reporting system
- CCA/DRR Legal-regulatory framework: Regardless of presence of framework CCA/DRR laws, e.g. Law on Public Safety, law on Emergency Situations, they need significant update to set effective emergency management system, and address legal gaps, e.g. setting clear criteria for classification of disasters; specific regulations (in particular, methodologies) on multi-hazard vulnerability and risk assessments and mapping, flood assessment and mapping, communication protocols for early warning systems, SOPs of individual entities engaged in unified emergency management system, etc. are missing. Furthermore, CCA/DRR is not integrated in land use zoning and planning as well as in building codes. Thus, there is a need for improvement of legal-regulatory basis for effective CCA/DRR
- CCA/DRR policy framework and planning platforms:

- There is no national adaptation policy framework (NAP) and related inter-agency coordination mechanism in the country though, the work towards this direction is ongoing within MoEPA
- Existing INDC is not detailed enough in terms of intended CCA commitments.
- Integration of adaptation considerations into development and sectoral strategies is low and there is a need for making efforts towards developing adaptation strategies for priority sectors, e.g. hydropower, water resources management, drinking water supply, hydropower, irrigation and drainage, infrastructure development, etc.
- Regardless of presence of national Public Safety and DRR policies, these documents need update and/or detalization in terms of reflecting new institutional setting (relevant to Public Safety Strategy) and inclusion of hazard, vulnerability and risk assessments together with relevant hazard and risk maps (relevant to DRR Strategy). In order to ensure engagement of various stakeholders for their experts' opinion, an advisory strategic planning panel/commission should be created for DRR strategic planning purposes as prescribed by the Law on Public Safety
- Concerning emergency and emergency risk management planning platforms, necessary for individual entities of unified emergency management system (e.g. individual Ministries, municipal governments, etc.), there are no such documents present in the country. Thus, there is a need for developing such planning frameworks, including threat assessment documents at the municipal level.
- Institutional setting:
 - Interagency, government-donor and state and local governments' coordination mechanisms either do not exist or are inactive. Thus, they should be strengthened through establishing clear communication lines between all key actors and creating multi-stakeholder coordination/advisory bodies for both CCA and DRR;
 - There is a need for significant DRR capacity building at central level - EMS, recently established through the merger of SSCMC and EMA, needs institutional and staff level capacity building in terms of optimum organization structure, job descriptions, skills and qualifications of staff, procedures, etc.
 - There is a need for significant capacity building of local governments in: i) identification of climate-induced hazards, vulnerabilities and risks; ii) development of detailed instructions/methodologies at local level for CCA/DRR planning; iii) development of CCA/DRR and preparedness and response plans; iv) setting local units for CCA/DRR and/or designating resilience officers from the staff of local municipalities; v) accessing various international technical assistance funding mechanisms, e.g. Covenant of Mayors – Adapt, etc., GCF, GEF
 - At municipal and community levels, a volunteers' system should be established and strengthened, including creation of volunteers' registry, training centres and programs and local volunteers' groups
 - Emergency reserves should be developed at all national, regional and local levels

Risk knowledge – hazard and risk monitoring, forecasting, hazard, vulnerability and risk assessment, database management, use of climate information

- Monitoring: Hydrometric, agrometeorological and ground water monitoring is lax in terms of density, geographic distribution, number and type of parameters measured and continuity of measurements (continuous versus manual); comprehensive geological and topographic surveys in order to depict landslide inventory (isopleth) maps are not carried out frequently enough. The use of aerial photography is also of limited scale. Thus, there is a need for expansion and upgrade of existing hydrometric, agrometeorological and ground water monitoring networks
- Forecasting: Existing synoptic and hydrological forecasts are not precise enough in terms of spatial and temporal dimensions due to lack of necessary real-time hydrometeorological data and equipment. The most advance almost real-time forecasting system exists only for floods within Rioni River Basin. Moreover, there are no modern, almost real-time fully-integrated forecasting platforms for other climate-induced hazards. Thus, there is a need for developing effective and reliable forecasting platforms for all climate-induced natural hazards
- Hazard assessment, mapping and database: NEA major responsible body for hydrometeorological and geological monitoring, climate-induced hazard assessment and mapping does not keep user-friendly standardized open source database on hydrometeorological and geological parameters and climate-induced natural hazards. Bulk of the information stored/archived at NEA is in paper or in user-unfriendly electronic format. Much of the information, which NGOs, academic and research institutions

and development projects require for research, education and development purposes is unavailable on-line and for free.

- Vulnerability and risk assessment, mapping and, database: There is no technical knowledge, capacity and readily available social-economic data to conduct vulnerability and risk assessments. National database on vulnerability/exposure and risks; geoinformation portal Geonode-2.4-b22 kept at Operation Control/Management Centre of EMA under EMS, which should further work on integration of digital hazard maps, developed by NEA, GIS land inventory data contained at Web Map Service (WMS) of the National Agency of Public Registry and other spatial data stored with various national agencies and institutions at "Geonode2.4-b22". Within next several years UNDP/SDC/GCF MHEWS project will assist EMS in setting fully-integrated DRR database
- Use of climate information: There no common-wide practice in the country for applying climate information by various sectors and end-users, including irrigation-drainage, hydropower, roads/traffic management, insurance and agriculture sectors. Currently, these types of activities are limited with providing advice to farmers only on the use of pesticides, based on climate conditions. This is done by NFA under the MoEPA. Thus, there is a need for developing climate information and advisory products and diversifying end-users for them

CCA/DRR financing

- State budget for DRR/resilience measures: The total amount spent on recovery and rehabilitation works annually is significant, but still is very small compared to annual average losses. Financing of resilience actions is mostly focused on response, recovery and rehabilitation. Therefore, there is a need for increase state budgetary allocations for such activities as afforestation-reforestation, natural regeneration of forests, restoration of floodplain forests, terraces, river banks by using bioengineering methods, etc.
- Local budgets for DRR/resilience measures: Local municipalities have very limited budgets for DRR. Most widely DRR/resilience measures are funded through state budget, including MDF and Fund for the Implementation of Regional Projects and only on structural DRR measures and rehabilitation of damaged infrastructure. Thus, there is a need for increasing local budgets for DRR and refocusing local financing to such activities, as afforestation-reforestation, natural regeneration of forests, restoration of floodplain forests, terraces, river banks by using bioengineering methods, watershed and wetlands restoration, etc.
- Financing of hydrometeorological and geological monitoring and forecasting services: Dire situation exists in terms of financing hydrometeorological and geological monitoring and forecasting services. NEA's budget's dynamics, related to hydrometeorological and geological monitoring, forecasting shows alarming decreasing trend for 2017-2018 and 2019 forecast that is related to removal of one largest source of financing from NEA (royalties from natural and mineral resources use licences). Thus, NEA's budget needs significant revision, in terms of increased obligations under international agreements and as well the work should be carried out to diversify and improve NEA's climate, hydrometeorological services for additional revenue generation. Insurance business can also be engaged for climate-induced natural hazards. Upcoming multi-dollar GCF project will partially address funding gap identified through providing 28 million USD worth services and goods for establishing multi-hazard early warning systems in the country. In the meantime, it will work with NEA to ensure its financial sustainability through developing financial sustainability plan and improving and diversifying its services
- Private investments: Private investments in DRR is only limited with financing some minor hydromet and geological services through information user fees, defined by NEA. Thus, there is a need for diversifying climate advisory services and revenues received from them, including setting flood and other natural hazard insurance systems
- International Development Assistance: Donor assistance in CCA and in particular, in DRR is insufficient to compensate annual average losses from climate-induced natural disasters. Therefore, efforts should be intensified for attraction of donor assistance in the area of DRR/CCA and as well, international funding mechanisms available more effectively, e.g. GCF funds. Upcoming multi-dollar GCF project will partially address funding gap identified through providing 28 million USD worth services and goods for establishing multi-hazard early warning systems in the country

Preparedness

- MHEWS: There is no multi-hazard early warning system at national, regional and community levels, while existing hydrometeorological and geological monitoring system does not support establishment and operations of such systems in terms on density of network, continuity of measurements and

parameters measured. Only its elements exist for some hazards and at a limited scale. Thus, forecast, warning and communication, including last-mile communications are not precise and operative enough in terms of spatial and temporal dimensions. There are no community-based early warning systems in the country that ideally, should be part of a nation-wide early warning system. Thus, there is a need for establishing fully-integrated almost real-time Multi-Hazard Early Warning System, including effective warning and communications at all national, municipal and community levels

- Implementation of CCA/DRR measures: operational capacities, including knowledge and skills to implement CCA/DRR measures are weak all levels. The work towards research, development and diffusion of adaptation technologies is very limited. The focus is more on response and rehabilitation measures, rather than on preventive measures, e.g. integration of climate/disaster risks in land use zoning and planning, building codes, application of climate-smart technologies and practices, e.g. drip and sprinkle irrigation, drought resistant local landraces and endemic crops, bioengineering, including agroforestry methods for river bank and slope stabilization, etc. Thus, there is a need for knowledge and skills development towards application of preventive measures, as well as for implementation of demo disaster prevention projects
- Community-based Multi-Hazard Risk Management process: Communities in Georgia have very limited/no knowledge on climate-induced natural hazards, vulnerabilities and risks and are not prepared for proper response capacities. More specifically, they do not have community preparedness and response plans, mapped evacuation routes, evacuation centres, local warning systems and response team. Moreover, there is no common practice of implementing community-based multi-hazard risk management/reduction processes, where local communities plan and implement DRR/CRR initiatives, e.g. watershed, floodplain and wetland restoration and slope stabilization measures using bioengineering (e.g. agroforestry) methods, etc. Thus, there is a need of introducing and implementing participatory community-based Multi-Hazard Risk Management processes in vulnerable communities affected by climate-induced natural hazards
- Public awareness: Public awareness on DRR is crucial for better preparedness for response and communities' resilience. In general, DRR awareness at both national and local levels is very low and there is a need for comprehensive education, awareness/public information campaigns and programs targeting all-level education institutions, media, rural communities, vulnerable groups, including people living under poverty line, internally displaced persons, people with disabilities, elderly, single mothers, etc., decision-makers and general public.

2. Assessment of the local level CCA/IRM practices on the example of Adjara Autonomous Republic municipalities - The activity covered analysis of climate change adaptation and disaster risk reduction practices that included climate change adaptation planning and implementation, multi-hazard risk management planning, municipal-level multi-hazard response and preparedness planning in six municipalities as well as government of Adjara Autonomous Republic.

The assessment revealed that currently climate change adaptation and its mitigation currently are not regulated through any legal binding document and or normative act mandating either national, sub-national and/or local governments in Georgia to implement the activities.

Climate Change Adaptation Strategy was developed for Adjara AR however it is not mandatory, and the adaptation measures indicated in the strategy are not fully implemented. Furthermore, climate adaptation concepts were developed for Adjara AR municipalities, and in case of Khelvachauri municipality a climate change adaptation action plan and sustainable energy action plan for Batumi were developed. However, implementation of climate adaptation measures is not exclusive responsibility of the local municipalities, thus law on local-self-governance (main regulatory framework defining mandates of the local government/municipalities) does not provide any provisions mandating the local municipalities in implement the activities. They are rather conducted on voluntary bases and in most cases, are not even accounted as climate change adaptation measures, but rather infrastructural.

In regard to Integrated Risk Management on sub-national and local levels, the assessment revealed that multi-hazard data collection and archiving into one database is not done in Adjara AR but it is rather scattered across various agencies. As a result, there is no multi-hazard risk information that is regularly updated and accessible either on AR or local, municipality levels. Hazard mappings are conducted by the National Environmental Agency for specific areas and the scale is not sufficient for integration into land use planning on local and/or AR level. Adjara AR agencies and local municipalities lack relevant methodology/approach to conduct multi-hazard mapping and risk modelling on local level and have no relevant human resources. Vulnerability assessments are conducted by various NGOs for project specific areas, using different methodologies which are not compatible with each other and prevents municipalities to consider in further planning, as a result majority of the assessments lack sustainability and are no longer used after the project completion.

The assessment also identified that the major legal document regulating the disaster risk management system in the country the Law on Civil Safety, included provisions on the responsibilities of Emergency Management Service, the lead agency in the field and local municipalities in developing the emergency preparedness and response plans. However due to current reorganization within the EMS and pending changes to the law the process was delayed and currently the municipalities lack risk-informed preparedness and response plans.

3. Assessment of institutional capacities and legal set-up for hazard mapping in Georgia - the activity included assessment of institutional and legal set up for hazard mapping in Georgia, existing practices and gaps; assessment of technical and human capacities for hazard mapping;

Based on the review and analysis of existing climate-induced hazard mapping architecture, gaps and capacity needs following conclusions can be drawn and relevant recommendations suggested:

- Climate-induced hazard mapping methodologies. There is on no single regulation on commonly-agreed international standard-based methodology on multi-hazard assessment and mapping in Georgia. Moreover, there is no EU compliant flood assessment and mapping methodology as mandated by EUAA. Thus, stemming from above gaps, there is a need for:
 - i. development and adoption of a regulation on EU-compliant flood assessment and mapping methodology,
 - ii. development and adoption of a regulation on international standard-based multi-hazard assessment and mapping methodology,
 - iii. building knowledge and capacities of public authorities primarily, NEA and local governments as well as non-public sector (e.g. research and academic, NGO and private consultancy) representatives in application of international standard-based flood and multi-hazard assessment and mapping methodologies.
- Hazard data, maps, databases, data accessibility. There is shortage of data and information on climate, geological and geographic parameters necessary for climate-induced natural hazards in Georgia.

A big portion of climate and geological data and information necessary for hazard mapping, is archived in NEA mostly in paper formats and is not available for free to non-public sector representatives. NEA has plans to allow for free information to users for research and education purposes.

Existing hazard, climate and geological databases and GIS maps are not fully compatible with requirements and standards of INSPIRE directive and are not linked with Geospatial Portal, created within the National Agency for Public Registry.

- Flood assessment and mapping. NEA lacks large-scale maps on high probability floods, flash floods, flood depth, flow velocity or direction are lacking due to: i) the shortage of hydrometeorological, geodetic and geological data on river channel and floodplains and rainfalls as a result of limited hydrometeorological and geological monitoring and field surveys; ii) limited weather modelling capacities; iii) limited hydrological modelling capacities - absent models for major river basins, except for Rioni River basin and left tributaries of Alazani river basin, as a result of the lack of hydrographs for smaller watersheds attributed to the lack of data on watershed physical features/parameters and absent high-resolution limited hydrodynamic (same as hydraulic) modelling capacities – absent 1D-2D/MIKE Basin-based hydraulic models for river basins other than Rioni River Basins and catchments of left tributaries of the Alazani River basin attributed to the shortage of data on channel-floodplain hydrodynamic and topographic data and absent high resolution DEM; v) limited use of ground radar and satellite imagery data and their integration into forecasting and modelling platforms.

Stemming from above gaps, there are following capacity needs to be met:

- i. expanding and upgrading existing hydrometeorological and geological monitoring to cover all river basins and produce real-time data, including data on rainfall
- ii. filling the data gaps on watershed physical parameters, including land cover, channel-floodplain topography, geodesy, geology, hydrodynamics, soil moisture, slope, drainage, etc. through intensifying hydrological and geological field surveys and procuring/developing high-resolution DEM and, acquiring and processing data from aerial photos and satellite imagery
- iii. developing hydrological models for all major river basins
- iv. developing hydraulic models based on 1D-2D/MIKE Basin for all river basins

- v. setting almost real-time flood forecast platforms for all river basins and integrating various-scale weather forecasting models and all available data into them, including monitoring, radar and satellite data
 - vi. training NEA's staff in hydrological and hydraulic modelling
 - vii. developing flood and flash flood maps, including maps for all major basins
- Landslide hazard assessment and mapping. NEA lacks up-to-date large-scale maps on landslide hazards due to: i) shortage of data on meteorology, geology, topography, hydrology, vegetation cover attributed to limited hydrometeorological and geological monitoring and field surveys and use of aerial photography and satellite imagery in order to develop landslide inventory map; ii) absent modelling software and knowledge on numerical models.

Stemming from above gaps, there are following capacity needs to be met:

- i. expanding and upgrading existing hydrometeorological and geological monitoring to cover all river basins and produce real-time data, including data on rainfall
 - ii. filling data gaps on watershed geology, topography, hydrology, vegetation cover through conducting inventory and processing existing data, intensifying geological and geodetic surveys, procuring/developing high-resolution DEM and, acquiring and processing aerial photos and satellite imageries
 - iii. setting landslide forecasting platforms for all river basins and integrating weather forecasting platforms and all available data into them, including radar data
 - iv. developing landslide modelling capacities of NEA through purchasing, calibrating and applying such models for all river basins
 - v. training NEA's staff in landslide hazard assessment, modelling and mapping
 - vi. developing smaller-scale landslide hazard maps for all river basins
- Mudflow and debris flow hazard assessment and mapping. NEA lacks larger-scale (at least river basin level) mud-flow hazard maps, due to: i) shortage/lack of data on runoff coefficient, design rainfall, peak discharges and amount of sediment available for transpiration attributed to limited hydrometeorological and geological monitoring, geological and geodetic surveys and use of aerial photography and satellite imagery, ii) absent modelling tools, knowledge and capacities in application of numerical models.

Stemming from above, following are the needs to be met:

- i. expanding and upgrading existing hydrometeorological and geological monitoring to cover all river basins and produce real-time data, including data on rainfall
 - ii. filling data gaps on rainfall runoff coefficient, peak discharges and amount of sediment available for transpiration through conducting inventory and processing existing data, intensifying field surveys, procuring/developing high-resolution DEM, acquiring and processing aerial photos and satellite imageries
 - iii. setting mudflow forecasting platforms for all river basins and integrating weather forecasting models and all available data into them, including radar data
 - iv. developing mudflow modelling capacities of NEA through purchasing, calibrating and applying such models for all river basins
 - v. training NEA's staff in mudflow hazard assessment, modelling and mapping
 - vi. developing smaller-scale mudflow hazard maps for all river basins
- Avalanche hazard assessment and mapping. NEA has limited experience in developing avalanche maps, due to: i) the lack of data on complexity of terrain, weather variables, on-site weather and snowpack (snow depth) attributed to diminished hydrometeorological monitoring and forecasting, including snowfall and snowpack monitoring, limited topographic and snow cover surveys/inventories and use of aerial photography and satellite imagery, ii) absent numerical computer models and capacities to run such models.

Stemming from above gaps, following are capacity needs to be addressed:

- i. expanding and upgrading existing hydrometeorological monitoring, including snowfall and snowpack/depth monitoring network to all river basins and produce real-time data, including data on snowfall and snow depth

- ii. filling data gaps on snowpack, terrain, vegetation cover, etc. through conducting inventory of and processing historical data, intensifying topographic and snow cover surveys, acquiring and processing aerial photos and satellite imageries
 - iii. setting avalanche forecasting platforms for all river basins and integrating weather forecasting models and all available data into them, including radar data into them
 - iv. developing avalanche modelling capacities of NEA through purchasing, calibrating and applying such models for all river basins
 - v. training NEA's staff in avalanche hazard assessment, modelling and mapping
 - vi. developing smaller-scale avalanche hazard maps for all river basins
- Drought hazard assessment and mapping. In Georgia, only large-scale drought maps are available on Hazard Web-Atlas though, they are outdated. Up to date maps, both large and small-scale ones are not currently produced due to: i) the lack of data on meteorological and hydrological parameters attributed to limited hydrometeorological monitoring, ii) the lack of agrometeorological data attributed to extremely limited agrometeorological monitoring; ii) lack of knowledge and capacities for deriving various drought indices.

Thus, stemming from above gaps, following are the capacity needs to be addressed:

- i. expanding and upgrading existing hydrometeorological monitoring to all river basins and produce real-time data, including data on rainfall
 - ii. expanding agrometeorological monitoring to cover all river basins and to produce in a real-time regime such data.
 - iii. filling data gaps though conducting inventory of and processing historical data and acquiring and processing aerial photos and satellite imageries
 - iv. setting drought forecasting platforms for all river basins and integrating weather forecasting platforms and all available data into them, including radar data
 - v. training of NEA and NFA staff in drought assessment, hazard mapping, modelling, forecasting and calculating various drought indices (e.g. SPI, PDSI, etc.)
 - vi. developing drought hazard maps for all river basins
- Strong wind hazard assessment and mapping. In Georgia, up-to-date strong wind hazard maps are not available, due to: i) the shortage of real-time meteorological data attributed to limited hydrometeorological monitoring; ii) limited weather forecasting/modelling capacities; iv) limited use and integration of ground radar and satellite imagery data into existing forecasting/modelling platforms.

Stemming from above gaps, there are following capacity needs to be met:

- i. expanding and upgrading existing hydrometeorological monitoring to cover all river basins and produce real-time data
 - ii. setting almost real-time weather forecasting and integrating all available data into it including monitoring, radar and satellite data into them
 - iii. training NEA's staff in strong wind forecasting and mapping
 - iv. developing strong wind hazard maps for all river basins
- Hail hazard assessment and mapping. In Georgia, up-to-date hail hazard maps are not available, due to: i) the shortage of real-time meteorological data attributed to limited hydrometeorological monitoring; ii) limited weather forecasting/modelling capacities; iv) limited use and integration of ground radar and satellite imagery data into existing forecasting/modelling platforms.

Stemming from above gaps, there are following capacity needs to be met:

- i. expanding and upgrading existing hydrometeorological monitoring to cover all river basins and produce real-time data
- ii. setting almost real-time weather forecasting platform and integrating all available data into it including monitoring, radar and satellite data into them
- iii. raining NEA's staff hail forecasting/ modelling and mapping
- iv. developing hail hazard maps for all river basins

- Multi-hazard mapping. NEA does not practice in multi-hazard mapping while there is some such experience in NGO sector.

Stemming from above, there is a need for building NEA's capacities in multi-hazard assessment based on commonly agreed international standard-based methodology.

- Knowledge gaps and needs of local academic and research institutions, NGOs and private consultancies in hazard mapping, including multi-hazard mapping add info on human and financial capacities and gaps. There is very limited experience of climate-induced hazard mapping in NGO, academic and local private sectors though, many of these institutions in particular, those dealing with spatial information, GIS/RS, modelling and database management have solid technical background and geospatial technologies to carry out hazard mapping. There are couple of exceptions with past and current experience within NGO and academic sector in hazard mapping. The absolute majority of university courses on DRR provided by some of the leading academic institutions do not include climate-induced hazard assessment and mapping, including multi-hazard risk mapping.
4. **Review of available data and data needs, for hazard mapping and risk modelling** - overall objective of the given assignment was to generate data that would enhance hazard mapping and risk modelling capacities through review of available data and data needs for hazard and risk modelling and mapping, based on indicative approaches provided in the GCF Feasibility Study, as well as Report on Assessment of Hazard Mapping Capacities being developed under the inception phase, and conduct data quality and gap analysis with detailed recommendations for addressing data gaps during project implementation.

IV. STRATEGY

a. Programmatic Approach

Climate change impacts natural and human systems globally. These risks will ultimately impact people's livelihoods, particularly marginalized groups such as women, children, and the elderly, as resources, food and water become scarcer. Those effects impact the other SDGs and often make it more difficult to achieve them. To achieve the UNFCCC goal of limiting global temperature rise to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, the world must transform its energy, industry, transport, food, agriculture and forestry systems to ensure that cumulative net emissions do not exceed one trillion tonnes of cumulative carbon, which implies global net zero emissions by the second half of the century.

Simultaneously the world needs to anticipate, adapt and become resilient to the current and expected future impacts of climate change to ensure reduction of exposure and vulnerability of the communities, livelihoods and infrastructure to climate-induced natural hazards.

Consequently, to address the existing development challenges, UNDP designed a programmatic response aimed at reducing exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards reduced through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action.

The programmatic response encompasses two interrelated projects funded by SDC and GCF. While the first project (SDC) will aim at developing financial, technical and human capacities to establish a nation-wide multi-hazard risk, monitoring, modelling and forecasting and reducing exposure and vulnerability risk of communities in Georgia, through development of multi-hazard risk information and relevant capacities; another project (GCF) will target at expanding hydro-meteorological network & modelling capacities and improving community resilience through implementation of EWS & risk reduction measures. Issues to be addressed by the projects and its goals and objectives are in line with **SDG (Sustainable Development Goal) 13: Take urgent action to combat climate change and its impacts** and in particular, with its *targets 13.1 through 13.3*, calling for strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries (*target 13.1*), Integrating climate change measures into national policies, strategies and planning (*target 13.2*) and improving education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning (*target 13.3*). The project will contribute to the achievement of **Outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded** (*output 1.3 and 1.4*) and **Outcome 5: Countries are able to reduce the likelihood of conflict and lower the risk of natural disasters, including from climate change** (*Outputs 5.1- 5.4*) of UNDP Strategic Plan as well as to the achievement of **Outcome 8: Communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and**

disaster risk reduction of UN Partnership Sustainable Development (UNPSD) for 2016-2020 and associated 4.1 and 4.2 outputs of UNDP Country Project Document (CPD) requiring improved policy, legal and institutional frameworks and knowledge base and information systems for environmental governance including CCA/DRR.

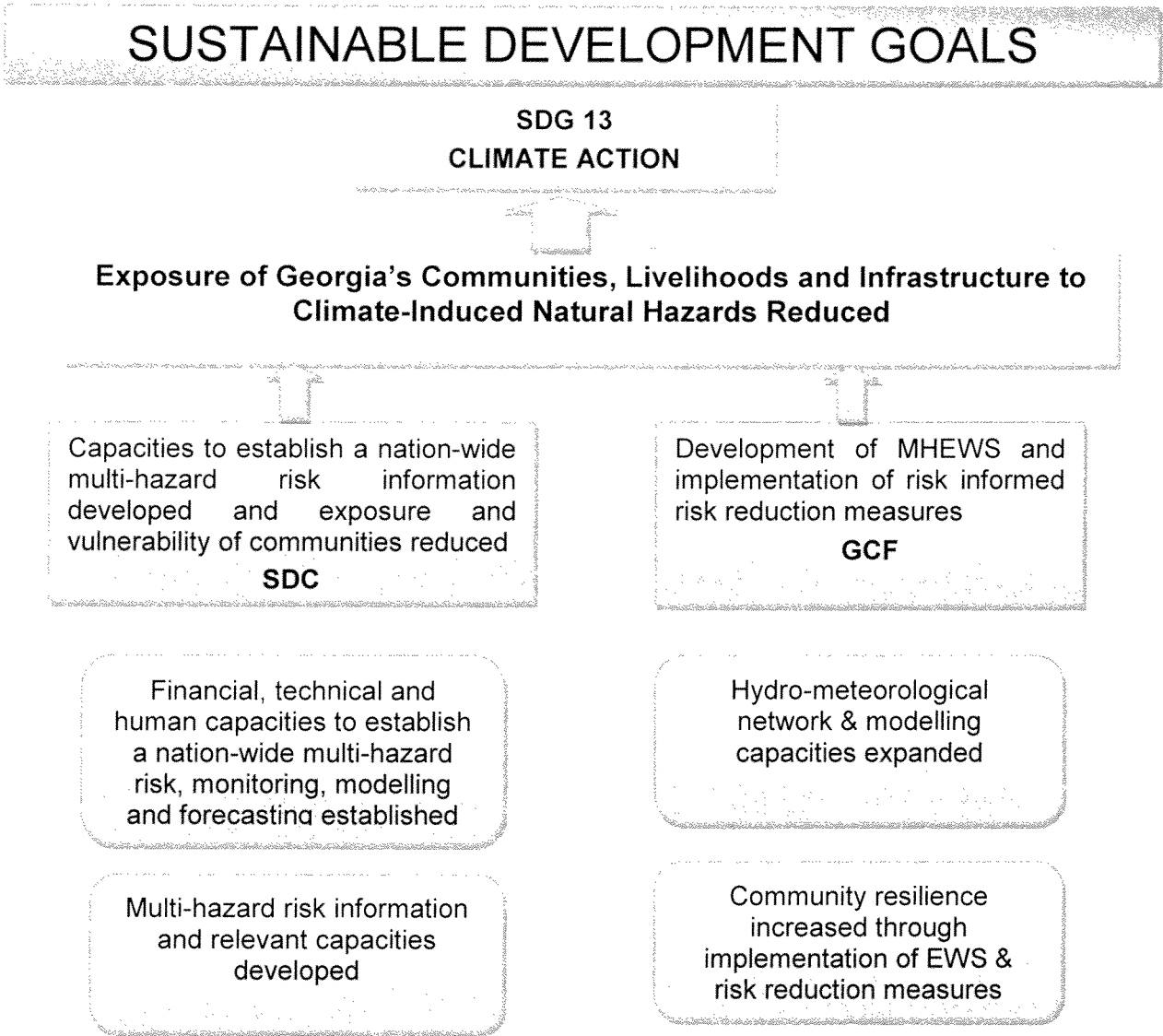


Diagram 1. Programmatic Response

For the extended organizational chart of this proposed programmatic approach see **Annex 1** and **Annex 2** of the project chart

b. Project Theory of Change

Under the current baseline scenario, the absence of comprehensive and definitive climate risk information and legislative and policy framework will continue to result in an exacerbate weak land use, spatial planning and climate risk management, leading to increased exposure of communities to damages, losses and loss of lives. In addition, lack of institutional and financial capacities and lack of modern methodologies and technologies will prevent the design of climate risk informed mitigation measures. The large proportions of the population at risk from hydro meteorological hazards (1.7 Million, 47% of the population) currently lack the coping capacities and adaptation strategies at community and individual level to adapt to climate change and to

manage and minimise their exposure and resilience to hydro meteorological hazards. Many of the victims from climate-induced natural hazards and eco-migrants in Georgia come from economically disadvantaged highland areas, where people are mostly self-employed running small scale subsistence agriculture, they are disadvantaged in terms of access to roads, critical infrastructure, telecommunications systems and basic social services, coping capacities of remote (mountainous) rural communities are limited. Meanwhile, most of economic losses are attributed to densely populated urban areas regardless of higher socio-economic opportunities.

Since the project overall objective is development of well-established system for multi-hazard risk knowledge to ensure effective climate risk management of all hydro-meteorological hazards in Georgia geographical coverage of the project interventions is a nation-wide, particularly 11 major river basins in Georgia: Enguri, Rioni, Chorokhi-Adjaristskali, Supsa, Natanebi, Khobi, Kintrishi, Khrami-Ktsia, Alazani, Iori, Mtkvari (same as Kura) focusing on the following hazards: floods, landslides, mudflows, avalanches, hailstorms and droughts.

The project will build upon lessons learned and success of the past and on-going interventions, existing data/information, institutional and management frameworks and capacities and, communications and coordination mechanisms operational currently in Georgia in CCA and DRR areas. Moreover, it will scale-up the outcomes of the prototype Rioni Flood project, SDC Prevention and Preparedness Project (2013-2016) as well as other baseline projects. Therefore, expanding the scope of already attested and verified interventions with close participation of national-wide and local stakeholders is more cost-effective than the implementation of a completely new initiative.

To deal with the hydro-meteorological hazards that are intensifying due to climate change, Georgia needs to move towards a more proactive integrated risk-informed approach. A multi-hazard early warning system and effective hazard emergency response rely on effective forecasting and warning, that also includes knowledge of where and when the hazards will occur (high risk areas identified by hazard mapping) as well as there is a need to have critical climate risk information that would enable the Government of Georgia to implement a number of nation-wide transformative policies for reducing exposure and vulnerability of the population and economic sectors to climate induced hazards.

The proposed project is designed to be complimentary to the efforts under GCF funded project aimed to reduce the exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action which will serve 1.7 Million ordinary Georgians currently at risk from climate-induced hazards.

The impact hypothesis of the project is as follows: i. standardized and harmonized national multi-hazard mapping and risk assessment methodology enables development of unified risk information on national level, ii. adequate Institutional and legal frameworks for multi-hazard mapping and risk assessment is in place and implemented to provide clear structure for development of risk information; iii. Enhanced long-term technical and human capacities of relevant agencies and institutions responsible for multi-hazard mapping and risk assessment provide adequate and sufficient risk information iv. Multi-hazard maps and risk profiles for 11 river basins in Georgia, which provides valuable information on existing multi-hazard risk both on national and local levels for further risk-informed development planning; v. Local (municipal) preparedness to multi-hazard risks is improved through enhanced capacities for risk-informed preparedness planning and existence of the risk-informed preparedness plans.

The project interventions are expected to have the following benefits to key sectors:

- *Critical Infrastructure.* Multi-hazard risk information, will enable sector resilience planning for all critical infrastructure impacted by climate hazards. With climate risk information embedded into the planning, design, construction and management framework for critical infrastructure, there will be reduced impacts of hazards. Systematic and comprehensive assessment of the risk to infrastructure and development of sector-specific resilience and response planning, will reduce the disruption of essential services resulting from hazards thus increasing efficiency of most sectors of critical infrastructure.
- *Energy.* Currently, the hydropower sector only uses (limited) hydrometeorological data in the design and construction phase of their projects. With more data being made available by the project (through expansion of the hydrometric network by GCF project) and new climate risk products (multi-hazard maps and risk profiles), hydropower companies would have enhanced information base to inform design management and operations of their installations. This could provide improvements in climate resilient design, and efficiencies in management and operations.

- *Insurance.* A weather index-based flood insurance scheme has been developed for the Rioni project. The risk and insurance model are developed but for national coverage and inclusion of other hazard it needs the multi-hazard and risk modelling that the project will provide. Once this is completed, the insurance sector with the GoG can take this forward. Based on the Rioni project, there is currently a lack of enabling environment for this scheme to be implemented within the lifetime of the project.
- *Natural resources and ecosystems.* Climate risk information and multi-hazard risk management plans at the river basin level for all 11 major river basins will allow for better protection of land, forest and water resources of the country.

More specifically, the project will contribute to transformative change in disaster risk reduction and risk management in Georgia, in as follows:

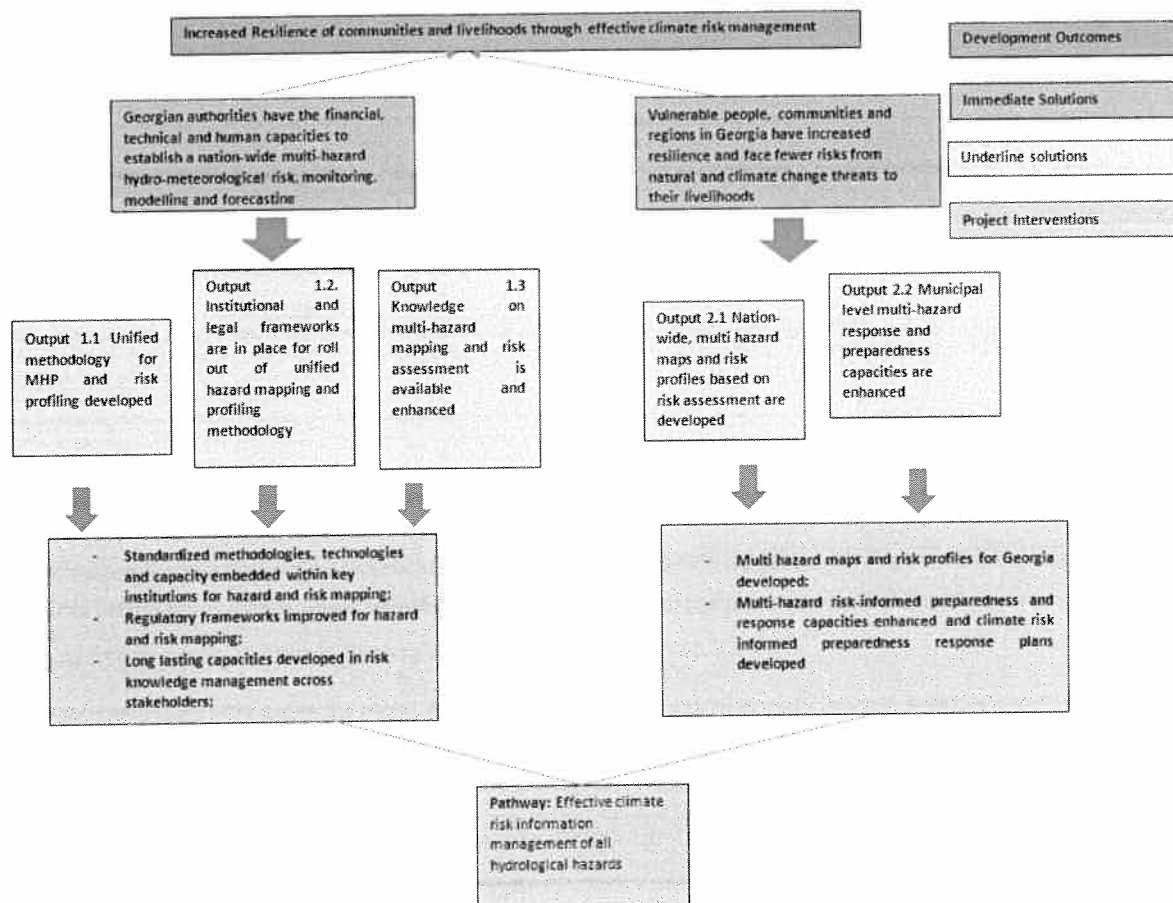
Learning potential. The project will create a comprehensive knowledge basis and the state-of-the-art learning, hazard mapping, risk profiling and risk-informed preparedness/response planning tools for climate-induced hydrometeorological hazards. The project is expected to contribute to development of university courses on the multi-hazard mapping and risk assessment to ensure sustainability of the intervention.

Contribution to the creation of an enabling environment. The project will create an enabling environment at central, municipal and community level through improving legal-regulatory and policy frameworks, for CCA/DRR including hazard and risk mapping, MHEWS, improving access to climate information and through and enhancing systems and institutional capacity at all levels to use the climate information, tools and technology by practitioners and key government institutions.

Environmental benefits. Reduction in soil erosion and land degradation through the zoning of activities away from high risk areas as well as improved management and in the long-run the project will bring about significant environmental benefits by increasing the country's resilience to climate-induced natural disasters and thus, enabling its population to better protect national assets, including environmental assets (land, forest and land resources).

Country's Ownership. The project's long-term goal, immediate objectives and expected outcomes as well as planned activities are in line with CCA/DRR priorities of Economic Development Policy, BDD, NEAP-3, INDC, National DRR Strategy and Action Plan.

Following diagram 2 represents an illustration of the ToC for this proposed project interventions:



V. RESULTS AND PARTNERSHIPS

Expected Results

Overall impact of the project will be reduction of exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action.

The achievement of the project overall objective will equip both national and local governments in Georgia with relevant capacities and knowledge for increasing resilience of the communities and their livelihoods through i. Standardization and harmonization of national hazard mapping and risk assessment framework; ii. Improvement of hazard and risk knowledge.

The project will contribute of achievements for SDG 13 specifically Georgia adjusted target:

13.2 Integrate climate change measures into national policies, strategies and planning

Outcome 1. The Georgian authorities have the financial, technical and human capacities to establish a nation-wide multi-hazard hydro-meteorological risk monitoring, modelling and forecasting

The project will assist national government in developing capacities and regulatory/legal frameworks for multi-hazard mapping and risk assessment and contribute to establishment of effective multi-hazard early warning.

The outcome will be implemented through the following outputs/activities:

Output 1.1 Multi-hazard mapping and risk assessment methodology is developed and institutionalized on the national level

Activity 1.1.1 Standardisation of the hazard mapping and risk assessment methodologies with clear mandates and approaches to be proposed to the government for validation and final adoption. The activity will consider the vulnerability assessment methodology to be developed through GCF-funded interventions. The

methodology will be in line with the EU requirements and commitments of Georgia in that regard and implemented by team of experts (international and national) that will include review of existing practices, stakeholder consultations and drafting of the unified methodology. The activity will be implemented in close cooperation with the Scientific Network for the Caucasus Mountain Region, working on development of hazard mapping and DRR University Courses under the SDC funded project "Strengthening CCA Capacities in the South Caucasus: Enhancing regional cooperative action for the benefit of the Caucasus mountain region". The approach will ensure considerations from academia as well as practitioners during the elaboration of the unified methodology on one hand and support development of the relevant courses for the under-graduate students on the other (to be implemented by the Scientific Network) to ensure sustainability of the intervention. Based on this, MHRA mandates and methodology will be finalized; relevant staff of MoEPA, NEA and EMS will be supported in its application and integration in everyday operations through development of MHRA technical regulation and facilitation of its adoption and relevant trainings.

Activity 1.1.2 Acquisition and collection of the required data for hazard mapping - existing capacities and need for data were identified prior to project implementation through assessment reports for hazard mapping capacities under the inception phase project.

Collection of the data will be provided through hydrologic, meteorological and geological data collection in the field, implemented in partnership with NEA and acquisition of required tools for field data collection and other topographic data as identified by the team of experts.

Specifically, the field survey equipment will be used as a tool for collection of required hydrological data in the field by the representatives of NEA to develop a multi-hazard, hydro-meteorological maps planned under the project. While GCF provides funding for procurement of large scale equipment, (hydrometric equipment, radars, hydrometeorological stations, agrometeorological stations) the SDC funds will be directed to enhance both technical and human capacities of NEA in multi-hazard mapping through creating enabling environment for required data collection both in the field as well as providing needed high resolution topographic data DEM (Digital Elevation Model – a high resolution aerial topographic photographs that is the basis for hydrological/hydraulic models). Based on the detailed hydrological field data and DEM data, NEA will be able to provide accurate multi-hazard mapping for 11 river basins in Georgia. As a result, NEA staff will have both technical capacities and trained staff to conduct field assessment on regular bases after project completion. Since the given geomorphologically active nature of the river, the field surveys will become out of date in time and -in some areas, it would be important to ensure that a programme of regular channel surveys is implemented particularly at gauging stations, critical infrastructure and along active reaches.

Through providing financial resources for acquisition of field survey equipment and other topographic data, the project will ensure a successful implementation of Output 2.1 Development of Nation-wide, multi hazard maps and risk profiles based on risk assessments on one hand and develop long-lasting technical capacities of NEA on the other and contribute to the Output 1.3. related to enhancing knowledge on multi-hazard mapping and risk assessment.

Furthermore, the hydrological and hydraulic models developed for multi-hazard mapping, based on the high resolution topographic data, will be adjusted for flood forecasting as well and eventually will contribute to development of forecasting platforms to be implemented under GCF funded interventions.

Below is the brief description of the required field equipment and other topographic data:

- GPS - Global Positioning Systems is a tool used for creation a topographic map. Based on GPS, it is possible to define slope morphometry and riverbed geometry (cross-sections). The mentioned parameters are used for the flood modelling, where the main input in the model are river cross-sections. In order to assess natural hazards and to create maps, GPS is the main tool for this.
- Drone - the modern and simplified equipment for hazard mapping. Drones are used for capturing high resolution images, from which Digital Elevation Models (DEM) are created. DEM is one of the main bases of hazard mapping. Drones are also used for recording the occurred disastrous events, which gives possibility to calibrate flood modelling outputs with the real data. At National Environmental Agency (NEA) Drone is also used for snow avalanche mapping. After processing drone data, NEA specialists will be able to define slope morphometric parameters and create relevant hazard maps. The drones will be used in the field by the NEA specialists to capture high resolution images at the flood plains and avalanche prone areas, specifically for the remote and inaccessible areas.
- ADCP (Acoustic Doppler Current Profiler) - is a mobile discharge meter which is a hydrometric tool used for measuring river water discharge for creation of riverbed morphometric parameters. Water discharge is the basic parameter for hydrological and hydraulic modelling. All modelling software requires CN parameters (Curve number). The periodical water discharge measurements give possibility to study the river flow regime (Runoff). Nowadays NEA is operating 55 hydrological station. All of them are measuring water level but lack discharge data. After collecting discharge data in the

field using the tool, a hydrologist will be able to create relationship curves between water level and discharge and based on the latter develop hydrological and hydraulic models.

- DEM – Digital Elevation Model is a 3D CG representation of a terrain's surface. DEM is a valuable tool for the topographic parametrization of hydrological and hydraulic models which are the basis for hazard mapping process.

Output 1.2 Institutional and legal frameworks are in place to roll-out the standardized hazard mapping and risk assessment methodology

Activity 1.2.1 Review and proposed amendments to legal framework and institutional set up to ensure roll out of hazard mapping and risk modelling methodology. The activity will address the re-strainers for risk-informed decision-making and will be in line with EU standards and relevant directives. The work will be implemented in cooperation with two EU projects (EUWI+4 EaP and PPRD East 2) working on flood and water regulatory basis. The activity will serve the purpose through recruitment of team of experts: 3 international experts to assist the government in development and adoption of legal-regulatory frameworks, 1 expert in DRR framework and EWS, 1 expert in hazard mapping, 1 expert in floodplain zoning policy along with national experts to provide required inputs.

The project will create a legal-regulatory basis for multi-hazard risk assessment (MHRA) and vulnerability assessment and multi-hazard EWSs, including protocols and SOPs for data collection, processing, analysis, more specifically:

1. Flood risk management regulatory framework will be strengthened by supporting integrating climate induced flood and drought risks management into water legislation by adaptation of #24 EU Water Framework Directive CIS guidance document on River Basin Management under Changing Climate
2. Translation, adaptation and adoption of the Guidance for Reporting under the Floods Directive (2007/60/EC)
3. MHRA mandates and methodology will be finalized; MHRA technical regulation will developed and its adoption facilitated;
4. Nation-wide floodplain zoning policy based on risk and hazard maps will be operationalized through relevant national regulations and guidance documents;

Output 1.3 Knowledge on multi-hazard mapping and risk assessment is available and enhanced

Activity 1.3.1 Strengthening capacities for multi-hazard mapping and risk assessment. The activity covers development of technical capacities related to risk identification and assessment, prevention, risk reduction, risk transfer, preparedness, climate risk management and climate change adaptation are rather weak across institutions and governance levels.

Based on the findings of the capacity assessment reports conducted under the SDC funded Inception Project (Comparative Analysis of DRR/CCA norms and architecture in Georgia with relevant action plan, Hazard Mapping Capacity Assessment in Georgia with roadmap and Assessment of IRM/CCA practices in Adjara AR and its municipalities) and the Capacity Assessment for Flood Hazard and Risk Management in Georgia, a capacity development plan for DRR will be elaborated and implemented in close cooperation with GCF funded project, to address gaps in resourcing (human, technical and financial). The recruitment and training need to fill capacity gaps will be addressed. The project will develop training plans for each technical area of expertise related to multi-hazard mapping and risk assessment and consolidate into an overall capacity development plan. The activity will actively cooperate with Scientific Network for the Caucasus Mountain Region through the SDC funded project to contribute to the development of university courses on gender sensitive vulnerability and risk assessment and modelling along with training of relevant staff from the stakeholders.

To address issues of skills shortage, skills retention and succession planning, the project will develop approaches which will include examining the role of the private sector (consultants, contractors, research institutes) in filling these gaps, the use of Continuous Professional Development (CPD) methods involving cross-fertilizing of staff with skills across all organisations (e.g. through training in all technical areas before specialising), development of standardised and nationally accepted guidance documents, codes and standards which will enable, consistency and uniformity of technical approaches.

To address capacity needs identified under Rioni AF project and to apply it to other climate induced hazards the project will focus on the following set of actions, addressing critical capacity gaps:

- Support with workshops for junior NEA employees and university graduates
- Introduce university courses in hazard mapping and analysis (NEA and Scientific Network for the Caucasus Mountain Region)
- Undertake refresher training in hydrology, hydraulic modelling and GIS
- Conduct training of NEA's staff in remote sensing
- Conduct training of EMS's staff and other stakeholders in multi-hazard risk assessment and mapping

Outcome 2. Vulnerable people, communities and regions in Georgia have increased resilience and face fewer risks from natural and climate change threats to their livelihoods

The objective of the outcome is to equip the national and local governments with sufficient multi hazard risk information and to enable further risk-informed development planning. Since the knowledge of existing risks will substantially reduce exposure of communities, sectors of economy and infrastructure, especially if the risk information will be further considered while developing spatial, urban development plans, construction, agriculture, conservation of biodiversity, protection of cultural heritage and etc.

For this reason, the project will support the government through NEA and EMS in development of multi-hazard maps and risk profiles for Georgia and ensure achievement of the following outputs/activities:

Output 2.1 Nation-wide, multi hazard maps and risk profiles based on risk assessment are developed

Activity 2.1.1 Development of multi-hazard maps and risk profiles for the following hazards: floods, landslides, mudflows, avalanches, hailstorms and droughts for 11 major river basins in Georgia (Enguri, Rioni, Chorokhi-Adjaristskali, Supsa, Natanebi, Khobi, Kintrishi, Khrami-Ktsia, Alazani, Iori, Mtkvari (same as Kura) river basins) using the most appropriate modern technologies and methods and aligned with international and regional standards. The intervention will address the barriers regarding lack of relevant risk-information for decision-making reducing risk exposure of the communities and livelihoods in Georgia. The activity will be implemented in partnership with National Environmental Agency through a Letter of Agreement. That will include technical support and guidance from relevant international experts and on-job trainings for NEA staff. The risk zoning of the river basins will be conducted using the hazard maps and the socio-economic vulnerability assessments to be developed under GCF-funded interventions, in accordance with the overall methodology developed under activity 1.1.1

Hazard maps are essential for the assessment of current and future hazard scenarios and the design of hazard management solutions that fully accounts for climate change considerations. There is currently no definitive or accurate hazard mapping for Georgia. The strategic assessment of risk to population, to economic activity and to future development under conditions of climate change is a government priority to support and guide local municipalities to wisely and rationally manage risk exposure to acceptable levels. The hazard maps and risk profiles will be used to make risk-informed decisions for all aspects of development and risk management in the future. This will include zoning of development activity away from high hazard areas to avoid damages to people, property and economic activity. In addition, the hazard maps will be used as the basis of the multi-hazard early warning system to be developed within the framework of overall programmatic approach through GCF funding and will be used by national and local authorities and communities in the development of emergency preparedness and response plans, in the establishment of different financial risk transfer mechanisms, for raising public awareness and for improving community preparedness. The visual maps will benefit decision makers, and all involved in natural hazard risk management, at national and local level. They will also enable government and donor agencies to better focus their efforts in dealing with hazards in the basin in the future. Importantly the hazard maps will provide the basis for the management of climate-induced hydro-meteorological hazards in Georgia now and in the future. Methods to be applied will be based on international best practise and will cooperate with other projects.

Output 2.2. Municipal level multi-hazard response and preparedness capacities are enhanced

Activity 2.2.1 Development of capacities of EMS and local municipalities in risk-informed preparedness and response planning, through support in developing methodology and SoPs. The project will work with the most vulnerable municipalities, those municipalities where structural measures will be implemented, through GCF funded interventions to develop municipal climate-induced multi hazard response and preparedness plans. The activity will include development of relevant capacities of the newly established Emergency Management Service, through support in developing required standardized methodology and developing the capacities through ToT.

Activity 2.2.2. Development of municipal level multi-hazard response and preparedness plans. The activity will be implemented in partnership with the EMS and target local municipalities with technical international expertise from the project. Followed by development of 10 climate risk-informed multi-hazard response and preparedness plans for the highly vulnerable municipalities (1. Enguri river basin in the Abasha Municipality

(Samegrelo - Zemo-Svaneti Region); 2-4. Rioni river basins in the Senaki Municipality (Samegrelo - Zemo-Svaneti Region) and in the Municipalities of Samtredia and Khobi (Imereti Region); 5. Mtkvari river basin in the Gori city (Shida Kartli Region); 6-9. Alazani river basins in the Lagodekhi city, and in the Municipalities of Akhmeta, Signaghi and Telavi (Kakheti Region); 10. Chorokhi-Ajaristskali river basin in the Kobuleti municipality (Adjara Autonomous Republic)), where the structural measures will be implemented by GCF funded project. Thus, the intervention will support in developing capacities for response and preparedness to climate-induced risks, on local, municipal level in Georgia.

Climate-induced multi-hazard response and preparedness plans will be prepared for the Tbilisi Municipality as well. This work will be integrated into the resilience planning initiated in Tbilisi in the end of 2016 under the 100 Resilient Cities initiative and will be implemented in partnership with co-financing from the initiative. Tbilisi is the capital city where more than one third (around 1.3 Million people) of total population is concentrated. Also, the city has a high concentration of critical infrastructure, while the capacities of local municipality as well as the preparedness and knowledge of local population is very low. There is no emergency unit within the Tbilisi mayor's office. The activity will be implemented through Long Term Agreement with the Emergency Management Agency with technical support from international and national experts.

Activities described above under the outputs will provide significant contribution for the successful implementation of the following outputs of the GCF funded project: Output 1: Expanded hydro-meteorological observation network and modelling capacities secure reliable information on climate-induced hazards, vulnerability and risk. Under this output, the project will apply a unified methodology and tools for multi-hazard risk and vulnerability assessment, mapping and monitoring and will upgrade and expand the hydro-meteorological and agrometeorological monitoring network, and support establishment of a centralized multi-hazard risk information and knowledge system, consisting of national e-Library, databases, information systems and knowledge portal; and output 2. Multi-hazard early warning system and new climate information products supported with effective national regulations, coordination mechanism and institutional capacities. Under this output the project will address gaps in national coordination and institutional set up for effective EWS resulting in a functioning coordination mechanism and communication protocols for early warning. Capacities of decision-makers and national institutions involved in generating, processing, communicating and using the warnings and other climate information will be enhanced. National and local integrated Early Warning Systems by hazard and sectors will be developed and implemented.

Resources Required to Achieve the Expected Results

The major inputs required for project implementation are related to technical expertise from different international and national experts to ensure development of methodology for multi-hazard mapping and risk assessment as well as hazard maps and risk profiles developed under the project are based on the international best practices and relevant to national context on the other hand. Inputs related to international/national expertise for capacity development planning and implementation of the plan is crucial for the project effectiveness as well.

Besides recruitment of international/national experts, the project will actively partner with the National Environmental Agency and EMS through LOA to ensure development long-term capacities related to multi-hazard mapping/risk assessment and risk informed preparedness/response planning.

Major purchases required for the project is related to acquisition of the data needed for multi-hazard mapping that the NEA and any other governmental agency lacks and is essential. The procurement will be provided through tendering.

UNDP HQ, regional and CO will provide the quality assurance during the project implementation.

All the input related costs are reflected in the project budget.

Partnerships

Being the part of the overall initiative targeted at the development of early warning capacities in Georgia, major partners within the project will be the same as identified in the GCF funded proposal that include ministries and relevant governmental agencies as well as municipalities.

The project will work with multi-stakeholder **Technical Advisory Working Groups (TAWG)** to be established under overall initiative to provide inputs to and endorsement of the design and quality of the project outputs. The TAWG members will represent the government, private sector, academia and civil society to provide guidance and technical advice on the project.

MoEPA as a major agency in climate adaptation and through its Integrated Management Department would act as a project implementing partner. Meanwhile, various Ministries and specialized agencies will be responsible for individual project activities and/or sub-activities, including:

NEA – responsible party for the activities related multi-hazard mapping that includes development of methodology for hazard mapping and development of regulatory/legal framework for hazard mapping and development of multi-hazard maps for 11 river basins in Georgia with relevant capacity development;

EMS – responsible party for risk assessment, including development of methodology, regulatory/legal framework with development of risk profiles for 11 river basins and based on the information development of capacities for multi-hazard preparedness and response planning with relevant plans being prepared;

Line Ministries - The project will ensure intensive coordination and cooperation among respective line ministries and state agencies involved in implementation of multi-hazard risk profiling. The MoEPA will provide a competent facilitation to ensure the involvement and buy-in of all relevant ministries and state agencies. The representatives from the ministries/agencies will be invited to all relevant events organized in the framework of the activities related to development of multi-hazard risk profiling methodology and the risk profiles of the river basins as well. The representatives of the governmental agencies will be invited to be members of the TAWGs as well.

Local-Self Government - The project will provide an intensive capacity development support to LSGs in 10 target municipalities. In particular, capacity development systems for municipalities will be created and upgraded to facilitate effective implementation of preparedness and response plans. This will include the trainings, as well as other strategies and guidelines for strengthening the capacities of the municipal leadership and local civil servants. In that way, the project will ensure that there are adequate institutional and human capacities on the local level to carry out risk informed preparedness and response actions.

Academia -The project will ensure active cooperation with major academic and research institutions in Georgia, i.e. Tbilisi State University, Ilia State University, Technical University of Georgia, in the activities related to developing long-lasting capacities and knowledge for multi-hazard risk mapping and risk profiling

Furthermore, the project will actively partner with **NGO Scientific Network for the Caucasus Mountain Region** funded by SDC. The partnership will include regular sharing of information and providing required technical support through international and national expertise as required.

Letters of Agreements, binding documents on implementation of concrete activities/sub-activities will be signed with individual responsible parties that will create a legal basis for participation of selected government authorities in project activities. Other key means for stakeholder engagement will be project board meetings, stakeholder workshops, trainings/ToT, various networking events, internet and Facebook communications/forums.

Besides, the project will actively cooperate with relevant ongoing projects as well as consider the lessons learned and knowledge developed from completed projects.

Table 1. Respective Donor Funded Projects

UNDP Projects	Complementarity with the project
AF “Developing Climate Resilient Flood and Flash Flood Management Practices to Protect Vulnerable Communities of Georgia”	The project supported the government and municipalities in the Rioni basin with total population of around 200,000 direct beneficiaries and approximately 500,000 total beneficiaries to assess and address risks from the main climate-induced hazards affecting Rioni basin – floods and flash floods, landslides, river bed and bank erosion. The project included direct interventions in 6 pilot municipalities - four upstream municipalities (Tsageri, Lentekhi, Oni and Ambrolauri) and 2 downstream municipalities (Samtredia and Tskaltubo).
UNDP Project “Strengthening National Disaster Risk Reduction capacities in Georgia”	The project was aimed at increasing national capacities for DRR to enhance the resilience of the population through mainstreaming DRR in development and sectoral policies and plans and

UNDP Projects	Complementarity with the project
	building national preparedness capacities for effective response at all levels.
SIDA "Enhancing Capacities for Development of National Disaster Loss and Recovery System"	Aim of the project is enhancing capacities for reforming the disaster damage and loss assessment and recovery system in Georgia through development of unified disaster loss/damage assessment methodology.
GCF - Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia	The project objective is to reduce exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action. The project will achieve this by nation-wide scaling-up of several projects and initiatives such as of the Rioni Basin flood forecasting and early warning system (FFEWS). The scaling up will be attained by developing and implementing a nation-wide Multi-Hazard Early Warning System (MHEWS), developing and delivering climate information services, implementing community-based risk reduction measures which will reduce exposure of the most vulnerable local communities to climate-induced hazards. The project will address existing gaps/barriers towards establishing an effective functioning, fully-integrated Multi-Hazard Early Warning System.
Other Donors and Partners	Complementarity to the Project
EU project Prevention, Preparedness and Response to Natural and Man-made Disasters in the EAP countries	PPRD East 2 started in 2016 and will last until the end of 2018. It has several participant countries. In Georgia, it focuses on the development of the draft by-law on flood risk management including flood risk assessment in line with EUFD.
EUWI+4 EAP project funded through EU Water Initiative and Eastern Partnership Programme	The project will assist EAP countries including Georgia, in aligning national laws and policies with EU WFD, strengthening national capacities in monitoring water quality and quantity (hydro morphological quality elements) and in developing and implementing River Basin Management Plans.
SDC Caucasus Network for Sustainable Development in Mountain Regions (Sustainable Caucasus)	Currently the Scientific Network for the Caucasus Mountain Region (SNC-mt) through its Coordination Unit (Sustainable Caucasus) is implementing the Inception Phase for the project "Strengthening the Climate Adaptation Capacities in the South Caucasus" with financial support from the Swiss Co-operation Office-South Caucasus. The overarching goal of the project is: Reducing the population's vulnerabilities towards climate-induced hazards and fostering regional co-operation on adaptation challenges in the Caucasus.
SDC Prevention and Preparedness project	Development of the initial multi-hazard mapping methodology including cost benefit analysis tools for the prioritization of the preventive actions.
SDC-ADA-UN Women – Women's economic empowerment in the south Caucasus	The project aims at supporting women's economic empowerment in Georgia and across the south Caucasus. The project will coordinate its activities with other ongoing SDC/ADA-funded project on Women's Economic Empowerment to ensure consideration of gender aspects into multi-hazard risk profiling and risk-informed preparedness and response planning with inclusion of social and gender aspects.
USAID Climate Change Adaptation and Disaster Mitigation (CCADM)	Funded by USAID and implemented by CENN in 2009-2013 aimed at developing flexible and resilient societies and economies in rural areas of Georgia capable of coping with the impacts of current climate variability and future climate change. A specific objective of the project was to reduce the susceptibility of local communities in the pilot rural areas of Georgia (Samtskhe-Javakheti, Ajara and Kakheti regions) to negative climate impacts through post-conflict environmental rehabilitation, natural disaster risk reduction (DRR) and climate change adaptation (CCA).
USAID/GLOWS INRMW project (Integrated Natural Resources Management in Watersheds of Georgia)	The project was implemented in 2011-2014 in upper and lower watershed areas of Rioni and Alazani River Basins covering four upstream (Telavi, Akhmeta, Oni and Ambrolauri) and three (Dedoplistskaro, Khobi and Senaki) downstream municipalities. It has introduced an innovative participatory integrated natural resources management approach and practices in a watershed context and worked at the community and municipal level to develop watershed management plans and build local

UNDP Projects	Complementarity with the project
	implementation capacities through the use of small-grants. Climate change and disaster vulnerability and risk assessment and development of adaptation measures were integral parts of the watershed management. Under this component, hazard, vulnerability and risk assessments were carried out at each community level through participatory approach.

Risks and Assumptions

Risk factors associated with the project include institutional, policy, financial, technical and operational aspects to create and run properly risk information both national-wide and at community level; The absolute majority of risks, including environmental and social risks is of low nature. Details on the risk are included in **Annex 3: UNDP Risk Log**.

The project will ensure that all the equipment purchased meets international environmental, safety and technical standards. Efforts will be also made to minimize environmental footprint of project activities, by introducing internal paper-reduction, re-use, water and energy conservation/saving policies.

Stakeholder Engagement

The project beneficiaries are general population in Georgia but specifically the most vulnerable, with considerations of women, children, elderly, PwD, minorities and any other disaster vulnerable groups.

Hydro-meteorological hazards are intensifying over time and increasing in spatial distribution. These spatial-temporal changes in hazards will together negatively impact communities in Georgia including socio-economic impacts. The increase in numbers and severity of observed hazards as recorded in the hazards database, and the increase in spatial distribution of each hazard, demonstrates the intensification of hydro-meteorological hazards in time and space. The predicted higher precipitation in Western Georgia will impact on soil erosion leading to aggravation of mudflows and landslides, with a deleterious effect on farming and the abandonment of settlements and infrastructure and increased economic losses due to flooding. Whilst in Eastern Georgia increased temperatures and stronger winds will lead to an increase in droughts, severe hail storms and soil degradation which in turn will significantly affect the yields of the important crops.

Many of the victims from climate-induced natural hazards and eco-migrants in Georgia come from economically disadvantaged highland areas, where people are mostly self-employed running small scale subsistence agriculture, they are disadvantaged in terms of access to roads, critical infrastructure, telecommunications systems and basic social services, coping capacities of remote (mountainous) rural communities are limited. Meanwhile, most of economic losses are attributed to densely populated urban areas regardless of higher socio-economic opportunities.

Economic assessment of the impact of hydro meteorological hazards under climate change conditions conducted through feasibility study for the GCF funded proposal "Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia", shows that 1.7 Million people (40% of the population) including the most vulnerable communities in remote rural and densely populated urban areas are at risk from the main hazards. Annual average damages (AAD) to properties from floods are estimated at 116.3 Million GEL (\$51.2 Million USD) without climate change and at 282.7 Million GEL (\$124.4 Million USD) with climate change.

Assessment of the socio-economic impact of all hazards under current and climate change conditions, conducted for the feasibility study, based on the existing indicative hazard mapping, socio-economics dataset available for all of Georgia, and by scaling up the GIS-based socio-economic risk model, developed for the Rioni basin to the rest of Georgia, provided with enumeration and, in some cases, the quantification of the impact of 7 hydro-meteorological hazards. The regions at greatest exposure to each hazard both now and potentially into the future are highlighted in the table below.

- Currently Racha-Lechkhumi-Kvemo-Svaneti is the region with the greatest population at high flood risk but Samegrelo-Zemo Svaneti will overtake under climate change with over 10% of the region's population in high risk flood zones;
- Kvemo Kartli is overwhelmingly the region most exposed to drought both now and into the future with 58% of properties potentially exposed;

- Kvemo Kartli has over 6% of its population exposed to risk from extreme hail events at present. Though this is expected to increase into the future some 51% of properties in Samtskhe-Javakheti may become exposed to extreme hail risk;
- Racha-Lechkhumi-Kvemo-Svaneti has the highest exposure of property to strong winds and the number of properties exposed may treble in the future;
- More properties in Mtskheta-Mtianeti are exposed to avalanches than any other region;
- The highest number of landslides are in Imereti;
- Northern Kakheti and Mtskheta-Mtianeti are most sensitive to mudflows.

Consequently, the project interventions will be the most beneficial for the identified population directly exposed to the hazard risks, that includes the most vulnerable groups (currently no gen-der disaggregated data is available for the demographics, however will be identified during the project implementation). Since the critical climate risk information and relevant capacities developed under the project would enable the Government of Georgia to implement a number of nation-wide transformative policies for reducing exposure and vulnerability of the population and economic sectors to climate induced hazards.

Detailed list of stakeholders is provided Table 2 Stakeholder analysis, that is represented by national and local governmental agencies. The stakeholders and project direct beneficiaries – the community members have a key role in the implementation and monitoring of the project. They will be engaged during the mid-term evaluations, impact analysis to assess the progress of the project and enable adaptive project management in response to the needs and priorities of the communities.

Table 2. Stakeholder Analysis

Stakeholder	Role in the selected project	Actions of the project to strengthen capacities of a particular stakeholder
Ministry of Environmental Protection and Agriculture (MoEPA)	The Ministry of Environmental Protection and Agriculture (MoEPA), established after a recent merger of the previous two ministries of Environment and Natural Resources Protection and Agriculture, through its Department of Environment and Climate Change (DoECC) is a responsible body for developing and implementing national CCA policies and meeting the commitments taken under UN Framework Convention on Climate Change (UNFCCC) and Paris Agreement in the country. MoEPA representative will serve as a National Project Director (NPD) for the project.	The stakeholder will serve as a driver of the project being Implementing Partner following UNDP's National Implementation Modality (NIM). Thus, the MoEPA will be responsible for overall implementation of the project, through National Project Director (NPD) as well as contribute to the project output delivery. The project will provide capacity development support to strengthen MoEPA's policy formulation and implementation capacities that will enable it to more effectively meet the international and national commitments for climate change adaptation and disaster risk reduction. Namely, through improvement of regulatory/legal frameworks for multi-hazard mapping and risk assessment its capacities in harmonizing national legislation with requirements of international commitments, including EU Georgia Association Agreement will be enhanced. Nation-wide multi-hazard mapping and risk assessment developed under the project will support with assessing current and future vulnerabilities of ecosystems to CC; In addition, the risk information (multi-hazard maps and risk profiles) will enable MoEPA to better plan and coordinate national actions against impacts of climate change ecosystems including biodiversity, land degradation, desertification, water resources; i.e. drought hazard maps developed under the project will assist MoEPA in planning effective mitigation measures for land degradation caused by droughts.
Legal Entity of Public Law - National Environmental	NEA is the major project beneficiary and stakeholder responsible for hydrometeorological and	NEA will be major partner for the project that fully recognizes importance of its role in development of the methodology for multi-hazard mapping and designing of the multi-hazard maps for 11 river basins in Georgia. Limited institutional and human capacities of

Stakeholder	Role in the selected project	Actions of the project to strengthen capacities of a particular stakeholder
Agency under MoEPA	geological monitoring and hazard mapping for Georgia.	NEA may serve as a restrainer of the process though MoEPA as a driver of the project will ensure that NEA is fully engaged in the process and provide political and facilitation support, as needed, to enable NEA carry out its role in the project. This may include approving additional staff units for relevant NEA departments to provide timely inputs or facilitating any legal procedures to support these processes; furthermore, the project will ensure development of long-term capacities within NEA through providing capacity development activities based on the capacity development plan to be prepared by the project.
Emergency Management Service under Prime Minister of Georgia	At present, the highest body for management of all types of emergencies at the national level is the Emergency Management Service (EMS), established in December 2017 as a merger of State Security and Crisis Management Council (SSCMC) under the Prime-Minister's office and the Emergency Management Agency (EMA) under the Ministry of Internal Affairs.	<p>EMS will be another major partner and driver of the project for the activities related to multi-hazard risk assessment and development of risk-informed municipal preparedness and response plans, as a major coordinating body for risk and emergency management in the country under the Prime Minister Office of Georgia</p> <p>Particularly, the project will actively cooperate with EMS in developing the standardized methodology for multi-hazard mapping and risk assessment, since EMS is mandated to collect and analyse emergency risk information on national level, the project will engage and consult with this Service regarding development of relevant legal/institutional frameworks, as well as will partner in development of national (EMS) and local (LSGs) capacities for multi-hazard risk preparedness and response planning along with development of the plans and its regular update and implementation.</p>
Other line Ministries and state institutions	Line ministries (MRDI, Ministry of Economy and Sustainable Development, Ministry of Health and Social Affairs, National Agency for Cultural Heritage Preservation under the Ministry of Education and Culture and Sports, LEPL 112 under Ministry of Internal Affairs, Public Registry under Ministry of Justice) will be engaged in development of regulatory framework and methodology for multi-hazard risk profiling, along with collection of required social-economic data needed for risk profiling	<p>The project will ensure intensive coordination and cooperation among respective line ministries and state agencies involved in implementation of multi-hazard risk assessment. The MoEPA will provide a competent facilitation to ensure the involvement and buy-in of all relevant ministries and state agencies. The representatives from the ministries/agencies will be invited to all relevant events organized in the framework of the activities related to development of multi-hazard risk assessment methodology and the risk profiles of the river basins. The representatives of the governmental agencies will be invited to be members of the TAWGs as well.</p> <p>The project will provide support to respective line ministries and state agencies through developing the risk information for risk informed development planning. Particularly, the risk profiles will provide information on multi-hazard risks to economy, social welfare, cultural and environmental sectors that will enable the relevant ministries dealing with the sector to ensure risk-informed development planning and actions under their sphere of competence. In addition, the project will closely cooperate with 112 on multi-hazard mapping methodology development and relevant trainings, as well as will provide the institution with valuable maps for further development of their spatial information centre. Furthermore, the project will work closely with NAPR, specifically the project related with development of national spatial</p>

Stakeholder	Role in the selected project	Actions of the project to strengthen capacities of a particular stakeholder
		<p>infrastructure, that will substantially benefit from the multi-hazard maps and risk profiles developed under the project as well as the institution will provide substantial inputs for project implementation as well, through providing access to the existing spatial information developed under the institution.</p>
<p>Local Self-Governments (LSGs) of 10 municipalities</p>	<p>Local authorities are the key actors and primary beneficiaries of the project activities related to risk-informed preparedness and response planning on the local level. LSGs are responsible for implementing municipal multi-hazard preparedness and response plans developed together with EMS.</p>	<p>The project will work closely with all 10 municipalities in target regions while developing the risk informed preparedness and response plans, due to limited capacities and awareness of LSGs in risk-informed preparedness and response planning, EMS as a driver of the process for the project component will ensure full engagement of the LSGs in the process and support in their capacity development.</p> <p>Furthermore, the project will provide an intensive capacity development support to LSGs. Capacity development plans for municipalities will be created and upgraded to facilitate effective implementation of preparedness and response plans. Capacity development will include the trainings, as well as envisage mechanisms & tools for strengthening the capacities of the municipal leadership and local civil servants in development/updating of multi-hazard risk preparedness plans and its implementation. In that way, the project will ensure that there are adequate institutional and human capacities on the local level to carry out risk informed preparedness and response actions.</p> <p>Other municipalities will also be engaged through the upscaling schemes and knowledge-sharing platforms to replicate successful initiatives countrywide.</p>
<p>International Donors</p>	<p>Several international donors are implementing different initiatives to promote CCA and DRR in Georgia, however the major partner will be the GCF funded project Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia.</p> <p>Furthermore, the project will closely cooperate with Scientific Network for the Caucasus Mountain Region (SNC-Mt) implementing the Inception Phase for the project "Strengthening the Climate Adaptation Capacities in the South Caucasus" funded by SDC. Another SDC/ADA funded project to be considered during project implementation is on Women's Economic Empowerment implemented by UN Women.</p> <p>Other donor-funded projects including EU project Prevention, Preparedness and Response to Natural and Man-made Disasters in the EAP countries – PPRD East 2; EUWI+4 EAP project funded</p>	<p>Active coordination and exchanges with international donors and relevant projects shall be fostered to ensure harmonized and effective planning and implementation of the project.</p> <p>Cooperation with the Sustainable Caucasus will be focused on contributing to development of university courses for hazard mapping and DRR through close cooperation and information/ results sharing and providing additional technical expertise.</p> <p>The project will coordinate its activities with the SDC/ADA-funded project on Women's Economic Empowerment to ensure consideration of gender aspects into multi-hazard risk profiling and risk-informed preparedness and response planning with inclusion of social and gender aspects.</p> <p>PPRD East 2 in Georgia focuses on the development of the draft by-law on flood risk management including flood risk assessment in line with EUFD. Thus, the project will cooperate with the PPRD East 2, in the activities related to development of methodologies and regulatory/legal frameworks. Same areas of cooperation will be ensured with EUWI+4 EAP project aimed to assist EAP countries including Georgia, in aligning national laws and policies with EU WFD, strengthening national capacities in monitoring water quality and quantity (hydro morphological quality</p>

Stakeholder	Role in the selected project	Actions of the project to strengthen capacities of a particular stakeholder
	through EU Water Initiative and Eastern Partnership Programme (2017-2020) will be considered as well.	elements) and in developing and implementing River Basin Management Plans.

South-South and Triangular Cooperation (SSC/TrC)

There are a number of initiatives in Georgia which envisage regional cooperation of South Caucasus and other developing countries in the areas of hydrometeorology, agrometeorology, water resources management, hazard mapping, disaster risk reduction, development of spatial data infrastructure based on EU standards, etc. These initiatives also include cooperation with various international organizations and development agencies in terms of knowledge sharing and application of their methodologies and standards. For instance, NEA closely cooperates with all WMO member countries and in particular, with countries of Black Sea region as well as with WMO itself for establishing and operating hydrometeorological observation and forecasting systems in line with WMO standards and protocols. The GCF project will support this cooperation and will ensure that MHEWS, including observation networks established under the project fully meet WMO standards. Furthermore, another SDC funded project "Strengthening the Climate Adaptation Capacities in the South Caucasus" implemented by the Scientific Network for the Caucasus Mountain Region (SNC-mt) through its Coordination Unit (Sustainable Caucasus) aims at reducing the population's vulnerabilities towards climate-induced hazards and fostering regional co-operation on adaptation challenges in the Caucasus. Among various activities, the project plans: i) development of a hazard mapping and DRR university courses in leading universities of the South Caucasus based on EU and Swiss hazard assessment methodology; ii) development of spatial data infrastructure and regional knowledge generation - improvement of data geoprocessing capacities; capacity building of key local actors related to countries' involvement in international and regional flagship initiatives through the Group on Earth Observation (GEO); as well as exploring opportunities for establishment of GEO System of Systems (GEOSS) for the Caucasus; iii) Regional training, exchange and capacity building of young scholars - Organization of regional summer schools for young scholars (master and PhD students), modelled after the Abastumani Summer School organized in September 2016 on DRR, ecosystem-based adaptation; establishing a SNC-mt supported Summer School alumni network; and fostering regional and inter-regional co-operation among young scholars; iv) Support to the continued development and maintenance of the online co-operation platform, including its resources section, thematic groups and online discussions. While implementing its capacity building, including training activities for hazard and risk assessment and mapping and establishing multi-hazard risk database. The project will closely cooperate with above SDC-supported project in sharing knowledge, development of unified methodologies for multi-hazard mapping and risk assessment, tools and scholars' and practitioners' networks of South Caucasus as well as in conducting joint trainings/forums if relevant.

Knowledge

A number of knowledge products will be produced by the project. The project will ensure that all materials are developed in a gender sensitive way. The data presented in the publications will be desegregated by sex, age, ethnic origin, IDP status etc. Special attention will be paid to make sure that gender-neutral language is applied to avoid bias toward a particular sex or social gender.

- Methodology for multi-hazard mapping and risk assessment with relevant SoPs;
- Multi-hazard maps and risk profiles for 11 river basins in Georgia;
- Standard Methodology and SoPs for risk-informed preparedness/response planning
- Risk informed preparedness and response plans for 10 municipalities in Georgia

Sustainability and Scaling Up

The system-level sustainability of institutional capacities created will be ensured by the development and adoption of relevant legal-regulatory and policy/planning frameworks for multi-hazard mapping and risk assessment. Through enhancements to the legislative and institutional framework, the project will ensure that the required systems/mechanisms for accountability, transparency, and technical knowledge transfer for DRR, hazard management, CCA and EWS are in place. Importantly, the project will address key institutional arrangement barriers to effective and sustainable multi-hazard EWS.

The project, through SDC co-financed interventions, will address the legal frameworks, policies, governance structures and processes, which currently present barriers to sustainable hazard management, DRR, CCA and EWS in Georgia. Through enhancements to the legislative and institutional framework, the project will

ensure that the required systems/mechanisms for accountability, transparency, and technical knowledge transfer for DRR, hazard management, CCA and EWS are in place. Importantly, the project will address key institutional arrangement barriers to effective and sustainable multi-hazard EWS.

Through the capacity building activities, the technical capacity of institutions will be enhanced, and sustainability assured by embedding capacity across all of the relevant institutions. As part of the exit strategy, the project will prepare an end-of-project capacity report which will include evidence-based mapped capacity development which will feed directly into the long-term cross-section capacity development plan for GoG to take forward.

Overall, the common thread across the project outputs is the integration of enhanced climate risk information and application of best practices in broader planning, thereby ensuring sustainability and introducing a paradigm shift.

VI. PROJECT MANAGEMENT

Cost Efficiency and Effectiveness

The project is a part of the integral approach to reduce exposure of Georgia's communities, livelihoods and infrastructure to climate-induced natural hazards through a well-functioning nation-wide multi-hazard early warning system and risk-informed local action consisting of two mutually reinforcing intervention/projects funded by SDC and GCF.

This project is aimed to support in development of multi-hazard risk information and relevant capacities related to multi-hazard mapping and risk profiling that will enhance strategic management of such hazards including their consideration into further development and preparedness/response planning to the identified hazard and risk profiles as well as contribute to development of effective MHEWS. Meanwhile funds provided by GCF will ensure development of multi-hazard early warning system through expanding the hydro-meteorological observation network, introduction and implementation of methods and tools for the systematic gender-sensitive socio-economic vulnerability assessment, development of centralized multi-hazard disaster risk information and knowledge system, development and implementation of the MHEWS covering all Georgia, enhancing access and the use of weather and climate information and agrometeorological information services by farmers and agricultural enterprises, implementation of community-based early warning schemes and community-based climate risk management, and public awareness and capacity building programme to effectively deliver climate risk information and training to communities and local first-responders.

Thus, the overall SDC/GCF initiative will address all technical, institutional (including legal) and financial barriers to implementing a fully integrated multi-hazard EWS system by combining best available science and local knowledge for vulnerability assessment, hazard and risk mapping, disaster modelling and forecasting. The project will develop and implement MHEWS covering all basins in Georgia, on the rehabilitated hydrometric network and will develop multi-hazard risk management plan for all major river basins in Georgia and municipal multi-hazard response and preparedness plans.

The following table represents the cash and in-kind contributions to the programme provided by the donors and GoG:

Partner	Cash contribution (USD)	In Kind contribution (estimated in USD)	Total
GCF	27,053,598		27,053,598
GoG (MoEPA, MIA, Tbilisi City hall, MRDI)	37,777,424	461,600	38,239,024
SDC	5,000,000		5,000,000
Total	69,831,022	461,600	70,292,622

Project Management

Considering the programmatic approach of SDC and GCF funded interventions, the projects will share the Project Board (PB) composed of the representatives from: MoEPA, NEA, EIEC, EMS, MRDI, UNDP, SDC and representatives of the local governments and civil society organizations. The Project Board is responsible for making, by consensus, management decisions.

The projects will have one National Project Director (NPD), appointed by the National Implementing Partner, i.e. MoEPA. The NPD will be responsible for project execution on a day-to-day basis on behalf of MoEPA within the parameters laid down by the Project Board. NPD will be accountable to PB and will end his/her authority when the final project terminal evaluation report, and other documentation required by the GCF, SDC and UNDP, has been completed and submitted to UNDP.

Considering the inter-linkages of the interventions from SDC and GCF funded initiatives, one International Chief Technical Advisor will provide regular technical guidance to the projects management and technical teams in managerial and technical issues.

Project support (part-time Finance Administrative Assistant) will be hired through UNDP and shared with GCF funded project; The GCF project will also have other support staff - finance officer/accountant, administrative assistant, logistics/procurement assistant, driver, project technical assistant and other relevant backstopping staff, which will provide support to the implementation of the SDC supported activities, as needed. Furthermore, the project will have shared office located in Tbilisi, considering the national-wide scale of the interventions.

The project will also benefit from Technical Advisory Working Groups (TAWG) to be established under GCF funded interventions. The TAWG will support the CTA and PC. They provide inputs to and endorsement of the design and quality of the project outputs. The TAWGs members will be drawn from government, private sector, academia and civil society to provide guidance and technical advice on the project. A balanced representation of women and men in the TAWGs will be ensured. GCF project Gender Advisor will be a member of all TAWGs to ensure that gender is adequately mainstreamed in all technical discussions thus the project will benefit from the expertise as well.

VII. RESULT FRAMEWORK

Intended Outcome as stated in: UN Partnership Strategic Document (UNPSD) 2016-2020: Outcome 8: By 2020 communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction;
Country Programme Document (CPD) 2016-2020 OUTCOME 4 Communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction/ Output 4.2. By 2020, environmental knowledge and information systems enhanced, including capacities for regular reporting to international treaties.
Outcome indicators/baseline/targets as stated in the UN Partnership Strategic Document (UNPSD) 2016-2020 Programme Results and Resource Framework:
8.2: Availability of unified methodology, tools and database for multi-hazard (natural, technological and environmental) risk assessment, mapping and monitoring. Baseline (2014): Not in place
Target (2020): Developed and applied, including WASH and DRR standards for EPE and schools
Country Programme Document (CPD) 2016-2020 output indicators/baseline/targets:
Indicator 4.2.1. Existence of standardized environmental and disaster risk data/information management system. Baseline: inconsistent, non-unified system; data not easily accessible
Target: A unified system for data collection, analysis and sharing established and functional; Sectoral environmental data accessible to end users. Means verification: Environment performance review -3
Indicator 4.2.2. By 2020, unified multi-hazard risk assessment methodology and staff training programme adopted; Baseline: Methodology and training plan not in place; Target: Methodology adopted, at least 70 government staff trained/equipped relevant knowledge / skills for disaster risk assessment and DRR; Source: Environment performance reviews -3, national DRR strategy/action plan
Applicable Output(s) from the UNDP Strategic Plan 2018-2021: Outcome 2. Accelerate structural transformations for sustainable development/ Output 2.3.1 Data and risk-informed development policies, plans, systems and financing incorporate integrated and gender-responsive solutions to reduce disaster risks, enable climate change adaptation and mitigation, and prevent risk of conflict
Project title and Atlas Project Number: Strengthening Climate Adaptation Capacities in Georgia Project: 00094354; Output: 00113003

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS	
			Value	Year	2019	2020	2021	2022	2023		FINAL
Project Impact Population's vulnerabilities towards climate-induced hazards are reduced and regional cooperation on adaptation challenges is fostered in the South Caucasus	# of people benefiting from reduced exposure to climate-induced hazards through Georgia's national and local governments' risk-informed decision-making, disaggregated by direct and indirect beneficiaries and gender % of the Government's spending on climate change adaptation (CCA) measures in Georgia	UNDP's Feasibility Study for GCF UNDP's Impact Assessment Reports for GCF Georgia's Government's Progress Reports on implementation of the Sendai Framework Georgia's Action Plan to the National DRR Strategy Project Donor Progress Reports Media reports Success stories	0	2018							1.7 million (i.e. 47% of Georgia's population, among them 0.89 mln women and 0.82 mln men)
Project Outcome 1. The Georgian authorities have the financial, technical and human	Indicator 1.1: # of norms, policies and political processes developed in multi-hazard hydro-meteorological risk	Mid-term GCF impact assessments	1.1/0	2018	3					3	Data collection method: Document review Risks:

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)						DATA COLLECTION METHODS & RISKS
			Value	Year	2019	2020	2021	2022	2023	FINAL	
			capacities to establish a nationwide multi-hazard hydro-meteorological risk monitoring, modelling and forecasting	<p>monitoring, modelling and forecasting fields</p> <p>Indicator 1.2: # of gender considerations reflected in newly developed policy documents and technical guidance</p> <p>Indicator 1.3: # of partner government agencies with staff whose institutional capacities in risk knowledge development increased</p>	<p>UNDP's Annual Project monitoring and evaluation (M&E) reports</p> <p>Project external mid-term and final evaluation reports</p> <p>Project Donor Progress Reports</p> <p>Institutional capacity assessment scorecard for key partner government agencies on the central level</p> <p>Annual reports of the National Environmental Agency (NEA)/ Ministry of Environment Protection and Agriculture (MoEPA) and Emergency Management Service (EMS)</p> <p>Success stories</p>	1.2/0	2018				
Output 1.1 Multi-hazard mapping and risk assessment methodology is developed and institutionalized on the national level	1.1.1 # of unified methodologies for multi-hazard mapping and risk assessment developed and institutionalized	<p>Project Donor Progress Reports</p> <p>Reports by relevant government agencies</p> <p>Steering Committee Meeting Minutes</p> <p>Multi-hazard mapping and risk assessment methodology</p> <p>Stakeholder meetings' summary notes</p> <p>Success stories</p>	0	2018	1					1	<p>Data Collection method: Document review of the methodology, project progress reports</p> <p>Risks: Government stakeholders are not always fully and timely engaged in development of the unified methodology due to governmental reshuffles and/or structural changes in their mandates</p>
Output 1.2	1.2.1 # of legal documents developed regulating multi-hazard mapping and risk	Project Donor Progress Reports	1	2018	1	2				3	Data Collection Method:

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)						DATA COLLECTION METHODS & RISKS
			Value	Year	2019	2020	2021	2022	2023	FINAL	
<p><i>Institutional and legal frameworks are in place to roll-out the standardized multi-hazard mapping and risk assessment methodology</i></p>	<p><i>assessment methodology with consideration of gender/vulnerable groups</i></p>	<p>Revised charters of relevant government institutions/agencies</p> <p>Reports by relevant government agencies</p>									<p>Document review of the legal documents, progress reports</p> <p>Risks: Political will and commitment to adopt legal and institutional frameworks for the hazard risk mapping is in place on the central level</p>
	<p>1.2.2 # of gender sensitive Standard Operating Procedures (Sops) and guidance documents for multi-hazard risk assessment and Early Warning Systems (EWS)</p>	<p>Project Donor Progress Reports</p> <p>Revised charters of relevant government institutions/agencies</p> <p>Reports by relevant government agencies</p> <p>Reports by relevant government agencies</p> <p>Reports by relevant government agencies</p> <p>Reports by relevant government agencies</p>	0	2018	1	1				2	<p>Data Collection Method: Document review of the SoPs, Progress reports</p> <p>Risks: No governmental reshuffles and/or structural changes in the mandates of relevant governmental stakeholders impede the adoption process</p>
<p>Output 1.3 <i>Knowledge on multi-hazard mapping and risk assessment is available and enhanced</i></p>	<p>1.3.1 # of gender sensitive, capacity development plans put in place to enhance the knowledge on nation-wide multi-hazard mapping and risk assessment among the target stakeholders</p>	<p>Feedback from the governmental agencies (NEA, EMS)</p> <p>Project Donor Progress Reports</p> <p>Capacity Development Plan</p> <p>Training reports/training assessment sheets</p>	0	2018	1					1	<p>Data Collection Method: Document review of the capacity development plan, progress reports</p> <p>Risks: NEA/EMS and line ministries cooperate on development of hazard and risk assessment Relevant data required for risk modelling is fully available and regularly updated by relevant governmental agencies The hazard maps and risk profiles are regularly updated by relevant government agencies</p>
	<p>1.3.2 # of NEA/EMS specialists and undergraduate students trained in hazard mapping</p>	<p>Feedback from the governmental agencies (NEA, EMS)</p> <p>Project Donor Progress Reports</p> <p>Capacity Development Plan</p>	0	2018		10(at least 3 women)		15(at least 4 women)		15(at least 4 women)	50 At least 15 women (30%)

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)						DATA COLLECTION METHODS & RISKS	
			Value	Year	2019	2020	2021	2022	2023	FINAL		
<p>Project Outcome 2. Vulnerable people, communities and regions in Georgia have increased resilience and face fewer risks from natural and climate change threats to their livelihoods</p>	and risk profiling methodology	Training reports/training assessment sheets										<p>Capacities built across relevant agencies through the project are maintained and periodically upgraded</p> <p>Data Collection method: Documents review</p> <p>Risks: Relevant government agencies cooperate on the development of the risk-informed planning</p> <p>Openness of the local governments to consider multi-hazard risk information into development planning using the multi-hazard risk management plans is evident, although relevant human capacities are not always available</p> <p>Target local governments encourage and practice participation of local communities, Civil Society Organizations (CSOs) and Community-based Organizations (CBOs), with equal representation of women and men and the socially excluded, in risk-informed development planning</p> <p>Data Collection method: Document review of multi-hazard maps and risk profiles, progress report</p> <p>Risks Political will and engagement from municipalities in development of the plans is in place</p> <p>Multi-hazard maps and risk profiles are regularly updated by relevant governmental agencies</p>
	2.1 # of integrated risk management (IRM) actions implemented by local authorities for major river basins in Georgia	Mid-term GCF impact assessments UNDP Annual Project M&E reports	2.1/0	2018						10		
	2.2 # of municipalities with specific measures related to climate change adaptation (CCA)/IRM incorporated in their development plans and budgets benefiting # of persons	Project external mid-term and final evaluation reports Project Donor Progress Reports Various municipal-level development plans, such as urban development/city master plans, spatial plans, etc.	2.2/0	2018						10		
<p>Output 2.1 Nation-wide, multi hazard maps and risk profiles based on risk assessments are developed</p>	2.3: Participatory and inclusive processes put in place by 10 municipalities to involve local socially excluded groups and women in consultations	Statistics on community groups' compositions Success stories	2.3/0%	2018		30%		30%		30%		
	2.1.1 # of river basin multi-hazard maps and risk profiles	Project Donor Progress reports Institutional capacity assessment scorecard for relevant stakeholders developed before, midway and by the end of the project River basin multi-hazard maps Risk profiles List of target regions Reports from EMS	0	2018		2		3	3	3	11	

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)						DATA COLLECTION METHODS & RISKS		
			Value	Year	2019	2020	2021	2022	2023	FINAL			
Output 2.2 Municipal level response and preparedness capacities are enhanced	2.2.1 # of standardized methodologies and SoPs for multi-hazard risk-informed, preparedness and response plans developed considering gender and vulnerable groups	Project Donor Progress reports Institutional capacity assessment scorecard for relevant stakeholders developed before, midway and by the end of the project	0	2018		1						1	Data Collection Method: Document review of the methodology with SoP, progress report/ Risks Political will and engagement from the target municipalities in development of the plans is in place
	2.2.2 # of gender sensitive municipal multi-hazard preparedness and response plans for major river basins in Georgia	Municipal multi-hazard preparedness and response plans Reports from EMS	0			1	3	3	3			10	
	2.2.3 # of municipal employees with enhanced capacities in multi-hazard response and preparedness				5	5	5	5	5		20 (at least 6 women)		

VIII. MONITORING AND EVALUATION

In accordance with UNDP's programming policies and procedures, the project will be monitored through the following monitoring and evaluation plans: *[Note: monitoring and evaluation plans should be adapted to project context, as needed]*

Monitoring Plan

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Track results progress	Progress data against the results indicators in the RRF will be collected and analysed to assess the progress of the project in achieving the agreed outputs.	Quarterly, or in the frequency required for each indicator.	Slower than expected progress will be addressed by project management.		
Monitor and Manage Risk	Identify specific risks that may threaten achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.		
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project.	At least annually	Relevant lessons are captured by the project team and used to inform management decisions.		
Annual Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project.	Annually	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.		
Review and Make Course Corrections	Internal review of data and evidence from all monitoring actions to inform decision making.	At least annually	Performance data, risks, lessons and quality will be discussed by the project board and used to make course corrections.		
Project Report	A progress report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk log with mitigation measures.	Annually, and at the end of the project (final report)			

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
	and any evaluation or review reports prepared over the period.				
Project Review (Project Board)	The project's governance mechanism (i.e., project board) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.	Specify frequency (i.e., at least annually)	Any quality concerns or slower than expected progress should be discussed by the project board and management actions agreed to address the issues identified.		

Evaluation Plan

Evaluation Title	Partners (if joint)	Related Strategic Plan Output	UNDAF/CPD Outcome	Planned Completion Date	Key Evaluation Stakeholders	Cost and Source of Funding
Mid-Term Evaluation including cost benefit analysis	N/A	UNDP Strategic Plan 2018-2021: Output 2.3.1 Data and risk-informed development policies, plans, systems and financing incorporate integrated and gender-responsive solutions to reduce disaster risks, enable climate change adaptation and mitigation, and prevent risk of conflict	UNPSD 2016-2020: Outcome 8: By 2020 communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction; CPD 2016-2020: OUTCOME 4: Communities enjoy greater resilience through enhanced institutional and legislative systems for environment protection, sustainable management of natural resources and disaster risk reduction	Q3-2021	SDC, MoEPA, NEA	USD 30,000 SDC
Final Evaluation/Impact Assessment	N/A			Q4-2023	SDC, MoEPA, NEA	USD 30,000 SDC

IX. MULTI-YEAR WORK PLAN

See Annex 5 Work Plan and Detailed Budget

X. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

The project will be implemented following UNDP's National Implementation Modality (NIM), whereas, the Ministry of Environment Protection and Agriculture (MoEPA) will serve as the Implementing Partner.

UNDP will also provide oversight through the Country Office in Georgia as well as quality assurance through Energy and Environment Portfolio Team Leader, EE programme associate and the M&E specialist). The quality assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed and reported to the donor. The project assurance role includes following services: (i) Day-to-day oversight supervision, (ii) Oversight of project completion, (iii) Oversight of M&E plan, including reporting.

Considering the programmatic approach of SDC and GCF funded interventions, the projects will share the Project Board (PB) composed of the representatives from: MoEPA, NEA, EIEC, EMS, MRDI, UNDP, SDC and representatives of the local governments and civil society organizations. The Project Board is responsible for making, by consensus, management decisions.

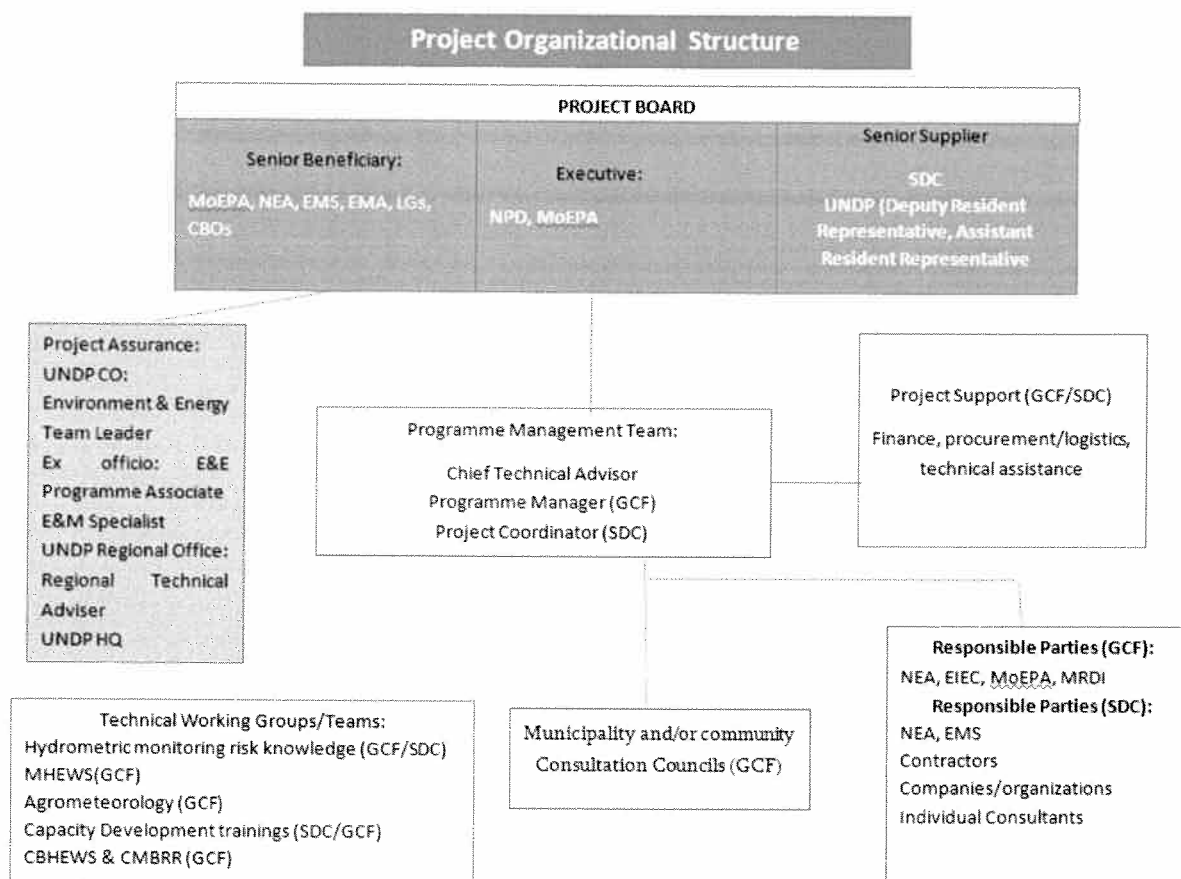
The projects will have one National Project Director (NPD), appointed by the National Implementing Partner, i.e. MoEPA. The NPD will be responsible for project execution on a day-to-day basis on behalf of MoEPA within the parameters laid down by the Project Board. NPD will be accountable to PB and will end his/her authority when the final project terminal evaluation report, and other documentation required by the GCF, SDC and UNDP, has been completed and submitted to UNDP.

Considering the inter-linkages of the interventions from SDC and GCF funded initiatives, one International Chief Technical Advisor will provide regular technical guidance to the projects management and technical teams in managerial and technical issues. He/she will be hired for a long-term during the entire project implementation period by UNDP in line with on UNDP recruitment procedures.

Project Coordinator (PC) will be responsible to managing the project on a day-to-day basis. He/she will be hired by UNDP based on its national project staff recruitment procedures. The Project Coordinator's function will end when the final project terminal evaluation report and other documentation required by the SDC and UNDP has been completed. The Project Coordinator will provide daily support to the NPD to ensure the project produces and results specified in the project document, meet required standard of quality, timeliness and cost criteria. The annual work plan will be prepared by the PC, will be reviewed and cleared by the UNDP Country Office as part of the quality assurance and reviewed and approved by PB. The PC will also be responsible for managing and monitoring the project risks initially identified and will submit new risks to the project board for consideration and decision on possible actions if required and update the status of these risks by maintaining the project risks log according to the NIM Guidelines.

Project support (part-time Finance Administrative Assistant) will be hired through UNDP and shared with GCF funded project; The GCF project will also have other support staff - finance officer/accountant, administrative assistant, logistics/procurement assistant, driver, project technical assistant and other relevant backstopping staff, which will provide support to the implementation of the SDC supported activities, as needed.

The project will also benefit from Technical Advisory Working Groups (TAWG) to be established under GCF funded interventions. The TAWG will support the CTA and PC. They provide inputs to and endorsement of the design and quality of the project outputs. The TAWGs members will be drawn from government, private sector, academia and civil society to provide guidance and technical advice on the project. A balanced representation of women and men in the TAWGs will be ensured. GCF project Gender Advisor will be a member of all TAWGs to ensure that gender is adequately main-streamed in all technical discussions. Local stakeholders and community members have a key role in the implementation and monitoring of the project. The stakeholders will also be engaged during the mid-term and final evaluations to assess the progress of the project and enable adaptive project management in response to the needs and priorities of the communities.



XI. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the government of Georgia and UNDP, signed on 1-Jul-1994. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

The project will be implemented by the Ministry of Environmental Protection and Agriculture ("Implementing partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

XII. RISK MANAGEMENT

1. Consistent with the Article III of the SBAA, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
 - a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.
2. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.
3. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the

list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aa_sanctions_list.shtml.

4. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
5. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
6. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.
7. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
8. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
9. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.
10. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

11. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

12. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection

process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

13. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
14. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

XIII. ANNEXES

Annex 1. Extended Organizational Chart

Annex 2. SDC project chart

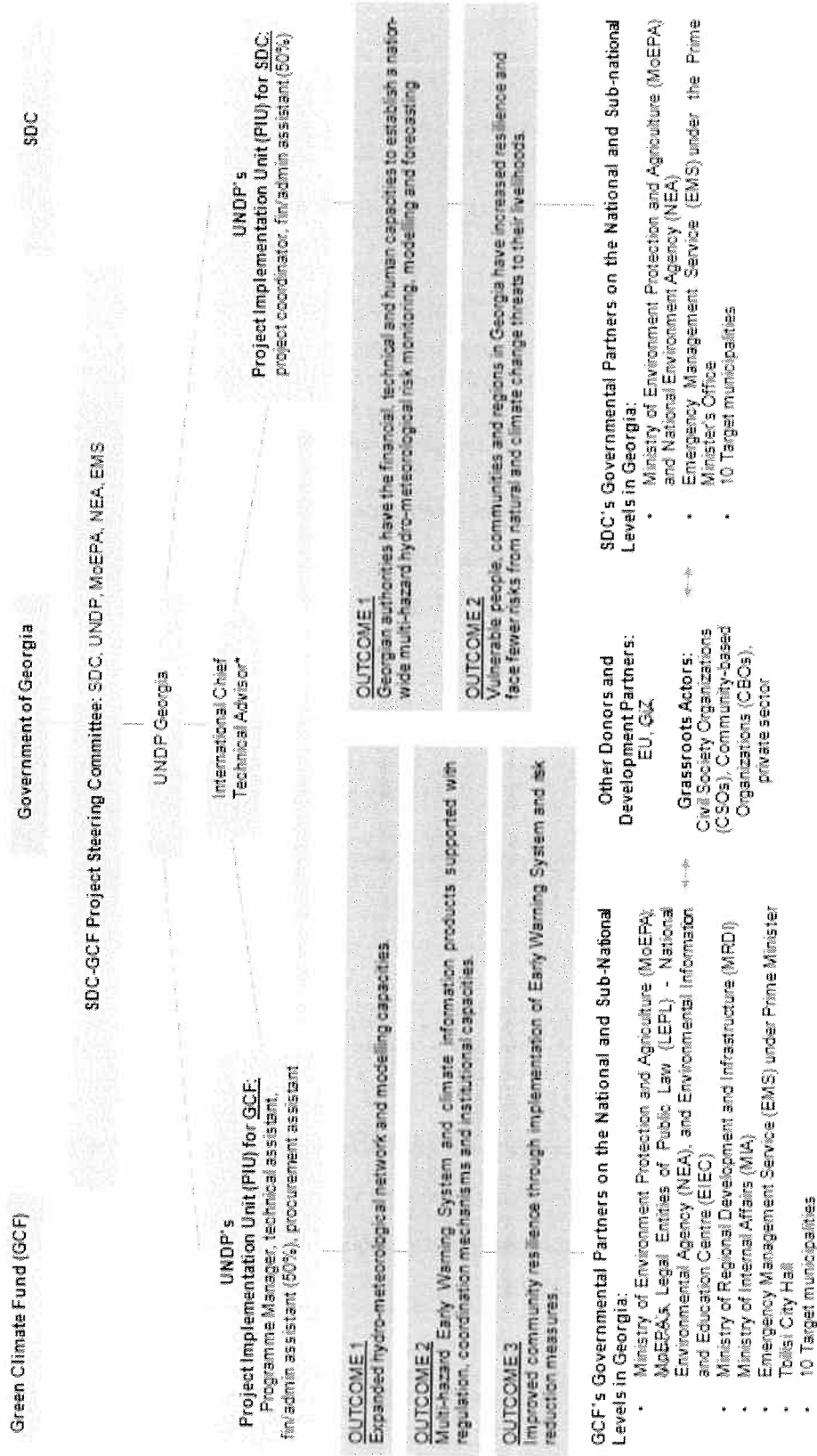
Annex 3. Risk assessment

Annex 4. SDC log frame

Annex 5. Detailed Budget (Annual Work Plan)

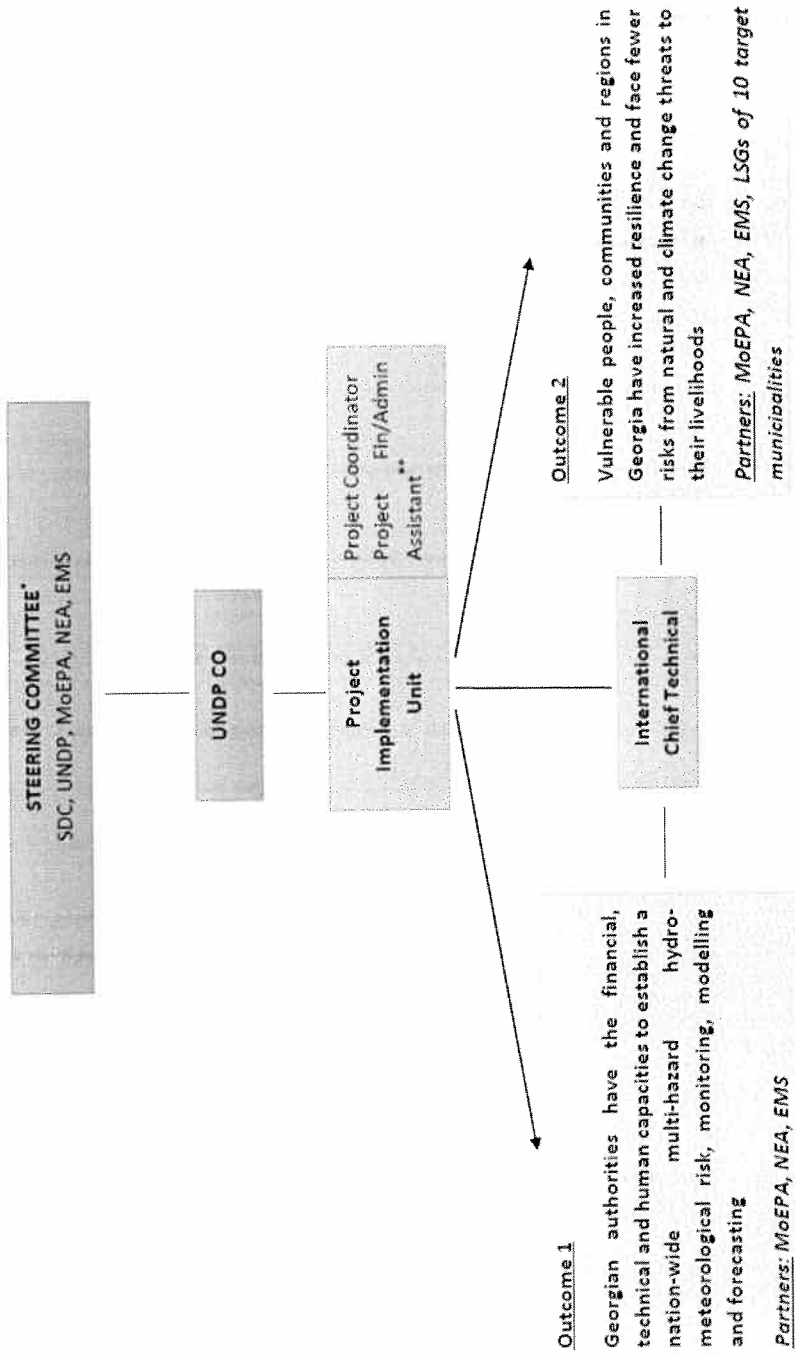
Annex 6. Social and Environmental Screening Plan (SESP)

Annex 1. Extended (GCF+SDC) Organizational Chart



* International Chief Technical Advisor (to be shared between the GCF and SDC) will not be based in Tbilisi but will be visiting the project regularly.

Annex 2. SDC project chart



* Steering Committee will be shared with overall GCF/SDC programme, the chart illustrates the members of the steering committee for SDC funded project under the overall initiative

** Project Fin/Admin Assistant will be shared with overall GCF/SDC project

*** Chief Technical Advisor will be shared with overall GCF/SDC project

Annex 3. Risk Log

Project: Strengthening the Climate Adaptation Capacities in Georgia

#	Main identified risks related to the intervention	Category	Overall Level of Risk	Probability (P) of incidence & Impact (I)1	Planned measures (for mitigation or others)
1	Lack of political “buy-in” from the governments side as some entities seize to recognize the project as an important opportunity for reducing risks and vulnerabilities of Georgian population to climate change impacts	Contextual	Low	The project represents part of an overall initiative that was requested by the government with substantial contributions and commitments for its implementation. However, decreased commitment of the government may hinder timely implementation of legislative and technical recommendations put forward by the project in the field of multi hazard mapping and risk profiling Probability = 1 Impact = 4	UNDP will plan all the project activities jointly and timely with all stakeholders, including the Government, to mitigate this risk. The project will continue consultations and bilateral meetings with the government to ensure that decisions made during the process of project implementation are made jointly with the local stakeholders (including the governmental partners), with the project’s experts providing sound policy and technical advice.
2	Delays in adopting and application of legal/regulatory framework for effective and efficient multi-hazard mapping and risk assessment	Contextual	Medium	Legal and regulatory frameworks will be supportive in establishing a standardized system for risk knowledge development, through providing legal basis for implementation of the methodology for multi-hazard mapping and risk assessment with relevant Standard Operational Procedures, with clear distribution of the mandates. Procedures for adoption of new laws require time that might be insufficient and cause delays in its application. In addition, the frequent shifts, reshuffling of public sector decision-makers and the staff of targeted public institutions carries the risks of delays in adopting and application of related legal/regulatory framework for effective and efficient multi-hazard mapping and risk assessment P = 2 I = 3	The project will mitigate this risk by ensuring intensive dialogue and advocacy with national institutions, line Ministries and the Parliament to support timely revision and adoption of the laws, formalize partnerships at institutional level through relevant agreements as well as to anchor institutional capacity development interventions into existing intra-institutional systems, regulations and policies as much as possible

#	Main identified risks related to the intervention	Category	Overall Level of Risk	Probability (P) of incidence & Impact (I)	Planned measures (for mitigation or others)
3	Delays in finalization of risk informed preparedness and response plans due to insufficient engagement of local municipalities	Programmatic	Low	Local governments lack awareness and capacity for development of risk informed preparedness/response planning that can lead to insufficient motivation on the local level to plan and implement the integrated risk management actions P=1 I=2	To mitigate the risk, the project will provide close cooperation with EMS, that has the overall responsibility for overseeing integrated risk management actions in development of preparedness/response plans in order to ensure full engagement of the municipalities in the process
4	Instability in the structure and composition of the Government of Georgia	Contextual	Medium	Frequent changes of the structure and composition of the Government have been taking place. Changes in the GOG and the Ministry of Environmental Protection and Agriculture, the National Environmental Agency, and Emergency Management Service may influence commitment of the agencies to provide active implementation of the project. P=3 I=2	UNDP will have active cooperation with MoEPA and other agencies and will observe political context to identify any upcoming changes in advance. In case further reorganization takes place, UNDP will intensify communication with the new leadership of the relevant institutions to inform them of the planned intervention and timely enlist the Government's support
5	Delays in implementation of overall GCF/SDC programme due to extended time to start the GCF co-funded activities	Programmatic	Medium	Number of procedural and bureaucratic processes are required for startup of GCF project, i.e. signing of funding agreement between GCF and UNDP, allocation of funds from GCF, signature of Project Document between UNDP and Government after the formal clearance procedure and approval from the government of the GCF and SDC projects. All of these steps might cause delays in GCF project start and in the achievement of outputs that are contributing to the SDC's project. This might entail further delays in an overall implementation of the GCF/SDC consolidated programme. P=2 I=3	UNDP will maintain regular consultation with the GCF to ensure timely start of the GCF project; in close cooperation with MoEPA, it will have regular consultations with senior level government to ensure timely approval of the GCF and SDC projects, and to accordingly coordinate the process with SDC

Annex 4. SDC logical framework

Hierarchy of Objectives Strategy of Intervention Impact (Overall Goal)	Key Indicators Impact Indicators	Data Sources Means of Verification	Outcome-level Assumptions & Risks
<p>Population's vulnerabilities towards climate-induced hazards are reduced and regional cooperation on adaptation challenges is fostered in the South Caucasus</p>	<p>Indicator 1 (UNDP): # of people benefitting from reduced exposure to climate-induced hazards through Georgia's national and local governments' risk-informed decision-making, disaggregated by direct and indirect beneficiaries and gender Baseline: 0 (GE) Target: 1.7 million direct beneficiaries (i.e. 47% of Georgia's population, among them 0.89 million women and 0.82 million men)</p> <p>Indicator 2 (UNDP): % of the Government's spending on climate change adaptation (CCA) measures in Georgia Baseline: 0 (GE) Target: TBD¹ (GE)</p>	<ul style="list-style-type: none"> - UNDP's Feasibility Study for GCF - UNDP's Impact Assessment Reports for GCF - Georgia's Government's Progress Reports on implementation of the Sendai Framework - Georgia's Action Plan to the National DRR Strategy - Project Donor Progress Reports - Media reports - Success stories 	
<p>Outcomes</p> <p>Outcome 1 (UNDP): The Georgian authorities have the financial, technical and human capacities to establish a nation-wide multi-hazard hydro-meteorological risk monitoring, modelling and forecasting</p>	<p>Outcome Indicators</p> <p>Indicator 1.1: # of norms, policies and political processes developed in multi-hazard hydro-meteorological risk monitoring, modelling and forecasting fields² Baseline: 0 (GE) Target: At least 3 policy documents developed (GE)</p> <p>Indicator 1.2: # of gender considerations reflected in newly developed policy documents and technical guidance</p>	<p>Outcome: Sources and Means of Verification</p> <ul style="list-style-type: none"> - Mid-term GCF impact assessments - UNDP's Annual Project monitoring and evaluation (M&E) reports - Project external mid-term and final evaluation reports - Project Donor Progress Reports - Institutional capacity assessment scorecard for key partner government agencies on the central level - Annual reports of the National Environmental Agency (NEA)/ Ministry 	<p>Outcome-level Assumptions & Risks</p> <ul style="list-style-type: none"> - Political will to implement relevant legal and regulatory reform for effective and efficient multi-hazard risk knowledge management is not always timely in place - Capacities created at relevant agencies are maintained, periodically upgraded and catalyzed to further improve

¹ To be defined in the cost-benefit analysis to be conducted by the SDC in 2021.

² Swiss Portfolio Outcome Indicator A2.1.5 (Source: Results Framework for the Swiss Cooperation Strategy 2017-2020).

	<p>Baseline: 0 (GE)</p> <p>Target: at least 3 policy documents reflecting gender considerations (GE)</p> <p>Indicator 1.3: # of partner government agencies with staff whose institutional capacities in risk knowledge development increased</p> <p>Baseline: 0 (GE)</p> <p>Target: At least 10 staff from NEA and EMS³ with increased capacities in hazard mapping methodology and tools (GE)</p>	<p>of Environment Protection and Agriculture (MoEPA) and Emergency Management Service (EMS)</p> <ul style="list-style-type: none"> - Success stories 	<p>natural hazard and risk management</p>
<p>Outcome 2 (UNDP): Vulnerable people, communities and regions in Georgia have increased resilience and face fewer risks from natural and climate change threats to their livelihoods</p>	<p>Indicator 2.1 # of integrated risk management (IRM) actions implemented by local authorities for major river basins in Georgia</p> <p>Baseline: 0 (GE)</p> <p>Target: at least 10 municipal development plans⁴ (GE)</p> <p>Indicator 2.2 # of municipalities with specific measures related to climate change adaptation (CCA)/IRM incorporated in their development plans and budgets benefiting # of persons⁵</p> <p>Baseline: 0 (GE)</p> <p>Target: 10 municipalities with 373 800 inhabitants</p> <p>Indicator 2.3: Participatory and inclusive processes put in place by 10 municipalities</p>	<ul style="list-style-type: none"> - Mid-term GCF impact assessments - UNDP Annual Project M&E reports - Project external mid-term and final evaluation reports - Project Donor Progress Reports - Various municipal-level development plans, such as urban development/city master plans, spatial plans, etc. - Statistics on community groups' compositions - Success stories 	<ul style="list-style-type: none"> - Relevant government agencies cooperate on the development of the risk-informed planning - Openness of the local governments to consider multi-hazard risk information into development planning using the multi-hazard risk management plans is evident, although relevant human capacities are not always available - Target local governments encourage and practice participation of local communities, Civil Society Organizations (CSOs) and Community-based

³ The exact number of staff will be verified by 2020.

⁴ Under municipal development plans, any strategic paper developed by the municipalities to steer their work is implied (e.g. spatial plan, economic development plan, urban planning paper). The project will make sure that these plans become risk-informed.

⁵ Swiss Portfolio Outcome Indicator A2 1.4 (Source: *Results Framework for the Swiss Cooperation Strategy 2017-2020*). This outcome indicator is also ARI HA5.

	to involve local socially excluded groups ⁶ and women in consultations Baseline: 0 (GE) Target: with at least 30% participation by women and other vulnerable groups (GE)	Organizations (CBOs), with equal representation of women and men and the socially excluded, in risk-informed development planning
Outcome 1 (UNDP): The Georgian authorities have the financial, technical and human capacities to establish a nation-wide multi-hazard hydro-meteorological risk monitoring, modelling and forecasting.		
Outputs	Output Indicators	Output: Sources and Means of Verification
Output 1.1: Multi-hazard mapping and risk assessment methodology is developed and institutionalized on the national level	Indicator 1.1.1 # of unified methodologies for multi-hazard mapping and risk assessment developed and institutionalized Baseline: 0 (GE) Target: 1 (GE)	<ul style="list-style-type: none"> - Government stakeholders are not always fully and timely engaged in development of the unified methodology due to governmental reshuffles and/or structural changes in their mandates
Output 1.2: Institutional and legal frameworks are in place to roll-out the standardized multi-hazard mapping and risk assessment methodology	Indicator 1.2.1 # of legal documents developed regulating multi-hazard mapping and risk assessment methodology with consideration of gender/vulnerable groups Baseline: 1 Law on Civil Safety; charters of NEA and EMS (GE) Target: revisions of at least 3 legal documents/bylaws regulating assessment, modelling and mapping (GE) Indicator 1.2.2 # of gender sensitive Standard Operating Procedures (SOPs) and guidance documents for multi-hazard risk assessment and Early Warning Systems (EWS)	<ul style="list-style-type: none"> - Project Donor Progress Reports - Reports by relevant government agencies - Steering Committee Meeting Minutes - Multi-hazard mapping and risk assessment methodology - Stakeholder meetings' summary notes - Success stories - Project Donor Progress Reports - Revised charters of relevant government institutions/agencies - Reports by relevant government agencies - Political will and commitment to adopt legal and institutional frameworks for hazard risk mapping is in place on the central level - No governmental reshuffles and/or structural changes in the mandates of relevant governmental stakeholders impede the adoption process

⁶ Including elderly, people living under the poverty line, ethnic minorities, IDPs.

<p>Output 1.3 Knowledge on multi-hazard mapping and risk assessment is available and enhanced</p>	<p>Baseline: 0 (GE) Target: At least 2 SOPs for multi-hazard risk assessment and EWS (GE)</p> <p>Indicator 1.3.1 # of gender sensitive capacity development plans put in place to enhance the knowledge on nation-wide multi-hazard mapping and risk assessment among the target stakeholders</p> <p>Baseline: 0 (GE) Target: 1 Capacity Development Plan with at least 50% implementation rate of its activities by the end of the project (GE)</p> <p>Indicator 1.3.2 # of NEA/EMS specialists and undergraduate students trained in hazard mapping and risk profiling methodology</p> <p>Baseline: 0 (GE) Target: at least 50 persons (including the specialists (F/M) from the NEA and EMS, and undergraduate students (F/M)) trained in nation-wide multi-hazard mapping and risk profiling (GE)</p>	<ul style="list-style-type: none"> - Feedback from the governmental agencies (NEA, EMS) - Project Donor Progress Reports - Capacity Development Plan - Training reports/training assessment sheets 	<ul style="list-style-type: none"> - NEA/EMS and line ministries cooperate on development of hazard and risk assessment - Relevant data required for risk modelling is fully available and regularly updated by relevant governmental agencies - The hazard maps and risk profiles are regularly updated by relevant government agencies - Capacities built across relevant agencies through the project are maintained and periodically upgraded
<p>Costs of outputs for Outcome 1: 1) Amount of SDC's contribution: 2'248'245 USD; Amount of GoG's contribution: TBD⁸ USD; 2) in %: SDC's contribution: TBD %; GoG's contribution: TBD%; 3) Total cost: USD (total of SDC's and GoG's contributions) TBD</p>			
<p>Outcome 2 (UNDP): Vulnerable people, communities and regions in Georgia have increased resilience and face fewer risks from natural and climate change threats to their livelihoods</p>			
<p>Outputs</p>			
<p>Output 2.1: Nation-wide, multi hazard maps and risk profiles based on risk assessments are developed</p>	<p>Indicator 2.1.1 # of river basin multi-hazard maps and risk profiles</p> <p>Baseline: 0 (GE) Target: 11 multi-hazard maps and risk profiles for the following river basins: Enguri,</p>	<p>Output:</p> <p>Sources and Means of Verification</p> <ul style="list-style-type: none"> - Project Donor Progress reports - Institutional capacity assessment scorecard for relevant stakeholders developed before, midway and by the end of the project - River basin multi-hazard maps 	<ul style="list-style-type: none"> - Political will and engagement from municipalities in development of the plans is in place

⁷ Sex disaggregated data to be given by UNDP.

⁸ To be defined by 2020.

<p>Output 2.2: Municipal level multi-hazard response and preparedness capacities are enhanced</p>	<p>Rioni, Chorokhi-Adjaraistskali, Supsa, Natanebi, Khobi, Kintrishi, Khrami-Ktsia, Alazani, Iori, Mtkvari (GE)</p>	<ul style="list-style-type: none"> - Risk profiles - List of target regions - Reports from EMS 	<ul style="list-style-type: none"> - Multi-hazard maps and risk profiles are regularly updated by relevant governmental agencies
<p>Indicator 2.2.1 # of standardized methodologies and SoRS for multi-hazard risk-informed, preparedness and response plans developed considering gender and vulnerable groups Baseline: 0 (GE) Target: 1 unified methodology with SoRS (GE)</p>	<p>Indicator 2.2.1 # of standardized methodologies and SoRS for multi-hazard risk-informed, preparedness and response plans developed considering gender and vulnerable groups Baseline: 0 (GE) Target: 1 unified methodology with SoRS (GE)</p>	<ul style="list-style-type: none"> - Project Donor Progress reports - Institutional capacity assessment scorecard for relevant stakeholders developed before, midway and by the end of the project - Municipal multi-hazard preparedness and response plans - Reports from EMS 	<ul style="list-style-type: none"> - Political will and engagement from the target municipalities in development of the plans is in place - The response and preparedness plans are regularly updated by relevant governmental agencies in cooperation with local authorities
<p>Indicator 2.2.2 # of gender sensitive municipal multi-hazard preparedness and response plans for major river basins in Georgia Baseline: 0 (GE) Target: 10 target municipalities: 1. Enguri river basin in the Abasha Municipality (Samegrelo - Zemo-Svaneti Region); 2-4. Rioni river basins in the Senaki Municipality (Samegrelo - Zemo-Svaneti Region) and in the Municipalities of Samtredia and Khobi (Imereti Region); 5. Mtkvari river basin in the Gori city (Shida Kartli Region); 6-9. Alazani river basins in the Lagodekhi city, and in the Municipalities of Akhmeta, Sighnaghi and Telavi (Kakheti Region); 10. Chorokhi-Adjaraistskali river basin in the Kobuleti municipality (Adjara Autonomous Republic (AJR))</p>	<p>Indicator 2.2.2 # of gender sensitive municipal multi-hazard preparedness and response plans for major river basins in Georgia Baseline: 0 (GE) Target: 10 target municipalities: 1. Enguri river basin in the Abasha Municipality (Samegrelo - Zemo-Svaneti Region); 2-4. Rioni river basins in the Senaki Municipality (Samegrelo - Zemo-Svaneti Region) and in the Municipalities of Samtredia and Khobi (Imereti Region); 5. Mtkvari river basin in the Gori city (Shida Kartli Region); 6-9. Alazani river basins in the Lagodekhi city, and in the Municipalities of Akhmeta, Sighnaghi and Telavi (Kakheti Region); 10. Chorokhi-Adjaraistskali river basin in the Kobuleti municipality (Adjara Autonomous Republic (AJR))</p>		
<p>Indicator 2.2.3 # of municipal employees with enhanced capacities in multi-hazard response and preparedness Baseline: 0 (GE)</p>	<p>Indicator 2.2.3 # of municipal employees with enhanced capacities in multi-hazard response and preparedness Baseline: 0 (GE)</p>		

	Target: At least 20 municipal employees (F/M ⁹) in 10 municipalities (GE)	
Costs of outputs for Outcome 2: 1) Amount of SDC's contribution: 1'844'470 USD; Amount of GoG's contribution: TBD ¹⁰ USD; 2) in %: SDC's contribution: TBD %; GoG's contribution: TBD %; 3) USD (total of SDC's and GoG's contributions)		
Activities (per output)		
List of activities for Output 1		
List of activities for output 1.1:		
Activity 1.1.1 To develop a unified methodology for multi-hazard mapping and risk assessment. The methodology, in line with Georgia's EU commitments under the EU-Georgia Association Agreement, will be implemented by a team of experts (international and national) and will envisage a review of existing practices, stakeholder consultations and drafting of the unified methodology.		
Activity 1.1.2 To collect the data for multi-hazard mapping and risk assessment under the elaborated methodology through acquisition of the required data identified through the Inception Phase. Collection of the data will be ensured through data collection in the field, implemented in partnership with NEA and acquisition of required topographic data (through tendering), as identified by a team of international and national experts.		
List of activities for output 1.2:		
Activity 1.2.1 To review and develop amendments to the legal documents and SoPs under the existing legal framework and institutional set-up (related to hazard mapping and risk assessments) to ensure the roll-out of hazard mapping and risk assessment methodology. The activity will address the re-trainers for risk-informed decision-making and will be in line with the EU standards and relevant directive. The project will create a legal-regulatory basis for multi-hazard risk assessment (MHRA) and vulnerability assessment, and multi-hazard EWSs, including protocols and SOPs for data collection, processing, analysis.		
List of activities for output 1.3:		
Activity 1.3.1 To strengthen the capacities for multi-hazard mapping and risk assessment. This will include on-job trainings for relevant staff from NEA, EMS, as well as trainings for undergraduate students and supporting SC in development of university courses on hazard mapping and risk assessment. The activity covers development of technical capacities related to risk identification and assessment, prevention, risk reduction, risk transfer, preparedness, climate risk management and climate change adaptation.		
List of activities for output 2		
List of activities for output 2.1		
Activity 2.1.1 To develop the nation-wide multi-hazard maps and risk profiles for 11 river basins in Georgia. The activity will be implemented in partnership with the NEA through a Letter of Agreement. It will include technical support and guidance from relevant international experts and on-job trainings for NEA staff. The risk zoning of the river basins will be conducted using the hazard maps and the socio-economic vulnerability assessments to be developed under the GCF-co-funded intervention, in accordance with a consolidated methodology developed under activity 1.1.1		
List of activities for output 2.2:		
Activity 2.2.1 To develop the capacities of EMS and local municipalities in risk-informed preparedness and response planning, through support in developing the respective methodology and SoPs. The project will work with the most vulnerable municipalities, including those municipalities where structural/mitigation measures will be implemented through GCF-co-funded intervention, to develop municipal climate-induced multi-hazard response and preparedness plans. The activity will		

⁹ Sex disaggregated data to be given by UNDP.

¹⁰ To be defined by 2020

include development of relevant capacities of the newly established EMS by supporting them in development of the required standardized methodology and by enhancing their capacities through IOT.

Activity 2.2.2 To develop the municipal level multi-hazard response and preparedness plans. The activity will be implemented in partnership with the EMS and 10 target local municipalities with technical expertise from international experts.

Annex 5. Detailed budget (USD)

Expected Outcomes	Planned Outputs/activities	Unit rate	Units	Planned Budget per year (in USD)						Responsible Party	Budget Description	Amount	
				2018	2019	2020	2021	2022	2023				
Outcome 1. The Georgian authorities have the financial, technical and human capacities to establish a nationwide multi-hazard hydro-meteorological risk, monitoring, modelling and forecasting (ATLAS Activity 1)	Output 1.1 Multi-hazard mapping and risk assessment methodology is developed and institutionalized on the national level			671,750.68	937,750.08	40,000.00	8,000.00	0.00	0.00	UNDP	SDC	1,657,500.75	
	Activity 1.1.1 Development of expert methodologies for multi-hazard mapping and risk assessment			51,750.08	5,750.08	0.00	0.00	0.00	0.00	UNDP	SDC	57,500.75	
				7,500.00	0.00	0.00	0.00	0.00	0.00	UNDP	SDC	7,500.00	
				5,000.00	0.00	0.00	0.00	0.00	0.00	UNDP	SDC	5,000.00	
				0.00	32,000.00	40,000.00	8,000.00	0.00	0.00	UNDP/NEA	SDC	80,000.00	
				7,500.00	0.00	0.00	0.00	0.00	0.00	UNDP	SDC	7,500.00	
				600,000.00	900,000.00	0.00	0.00	0.00	0.00	UNDP	SDC	1,500,000.00	
				194,710.73	73,733.17	0.00	0.00	0.00	0.00				268,443.90
				136,099.76	15,122.20	0.00	0.00	0.00	0.00	UNDP	SDC	151,221.95	
				53,610.98	53,610.98	0.00	0.00	0.00	0.00	UNDP	SDC	107,221.95	
			5,000.00	5,000.00	0.00	0.00	0.00	0.00	UNDP	SDC	10,000.00		
			0.00	80,575.19	80,575.19	80,575.19	80,575.19	80,575.19				322,300.75	
			0.00	61,825.19	61,825.19	61,825.19	61,825.19	61,825.19	UNDP	SDC	247,300.75		
			0.00	18,750.00	18,750.00	18,750.00	18,750.00	18,750.00	UNDP	SDC	75,000.00		
Subs Total (Outcome 1)			865,461.41	1,032,058.43	1,205,575.19	88,575.19	80,575.19	80,575.19				4,748,245.40	

Expected Outcomes	Planned Outputs/activities	Unit rate	Units	Planned Budget per year (in US\$)						Responsible Party	Planned Budget		
				2018	2019	2020	2021	2022	2023		Funding Source	Budget Description	Amount
Outcome 2. Vulnerable people, communities and regions in Georgia have increased resilience and face fewer risks from natural and climate change threats to their livelihoods (Atlas Activity 2)	Output 2.1.Nation-wide, multi hazard maps and risk profiles based on risk assessments are developed			0.00	285,893.95	428,840.93	428,840.93	285,893.95		UNDP/NEA	SDC	72100 Contractual Services Companies Letter of Agreement (LOA) with NEA on providing service on Multi-hazard mapping and risk assessment and develop risk profiles for 11 river basins. Cost includes remunerations, printing and design of maps; data collection; working group meetings and other service related costs.	1,429,469.75
	Activity 2.1.1 Development of multi-hazard maps and risk profiles for 11 river basins in Georgia			0.00	233,072.00	349,608.00	349,608.00	233,072.00		UNDP	SDC	71300 International Consultants Recruit international consultants (1 hydrologist, 1 meteorologist, 1 geologist, chief technical advisor) to provide technical support to NEA in developing the multi-hazard maps	1,165,360.00
				0.00	43,875.76	65,813.64	65,813.64	43,875.76		UNDP	SDC	71300 International Consultants Recruitment of international consultant to provide technical support to EMS in multi-hazard risk assessment based on hazard maps (1 international expert, chief technical advisor)	219,378.80
	Output 2.2.Municipal level multi-hazard response and preparedness capacities are enhanced			103,000.00	93,000.00	93,000.00	93,000.00	63,000.00		UNDP/EMS	SDC	EMS to develop capacities and SOPs for risk-informed preparedness/response planning on municipality level. This includes international expertise and trainings for EMS and target municipality representatives (10 municipalities)	415,000.00
	Activity 2.2.1 Development of capacities of EMS and local municipalities, in risk terms of preparedness and response planning, technical support in developing methodology and SOPs			3,000.00	3,000.00	3,000.00	3,000.00	3,000.00		UNDP/EMS	SDC	71300 International/Local Consultants Recruit Chief technical advisor to provide overall guidance for output	15,000.00
	Activity 2.2.2 Development of risk preparedness/resilience and recovery plans for 10 target municipalities			0.00	60,000.00	90,000.00	90,000.00	60,000.00		UNDP/EMS	SDC	72100 Contractual Services Companies Letter of Agreement (LOA) with EMS to develop risk-informed preparedness/response plans for 10 target municipalities in cooperation with local government	300,000.00
	Sub-Total (Outcome 2)			103,000.00	348,893.95	521,840.93	521,840.93	348,893.95					1,844,669.25
Management, Monitoring and Evaluation (Atlas activity 3)													
3.1 Project Manager		3,000	60	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00		UNDP	SDC	71400 Individual contracts	180,000.00
3.2 Project Assistant (50%)		900	60	10,800.00	10,800.00	10,800.00	10,800.00	10,800.00		UNDP	SDC	71400 Individual contracts	54,000.00
3.3 E&E Team Leader (37%)		900	60	10,800.00	10,800.00	10,800.00	10,800.00	10,800.00		UNDP	SDC	61100 Salaries NP staff	54,000.00
3.4 E&E Prog. Associate (35%)		532	60	6,384.00	6,384.00	6,384.00	6,384.00	6,384.00		UNDP	SDC	61200 Salaries - GS Staff	31,920.00
3.5 Monitoring and Evaluation Specialist		558	60	6,696.00	6,696.00	6,696.00	6,696.00	6,696.00		UNDP	SDC	61100 Salaries NP staff	33,480.00
3.6 Office rent		600	60	7,200.00	7,200.00	7,200.00	7,200.00	7,200.00		UNDP	SDC	73100 Rent	36,000.00
3.7 Utilities (electricity/gas)		130	60	1,560.00	1,560.00	1,560.00	1,560.00	1,560.00		UNDP	SDC	73100 Utilities	7,800.00
3.8 Mobile tel. charges		100	60	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00		UNDP	SDC	72400 Communications	6,000.00
3.9 Contingency		688.82		688.82	688.82	688.82	688.82	688.82	0.00	UNDP	SDC	74500 Sundry	3,444.12
3.10 Int/Local Travel (DSA, terminal allowance and other travel costs)		310	60	3,720.00	3,720.00	3,720.00	3,720.00	3,720.00		UNDP	SDC	71600 Travel	18,600.00
3.11 Annual Project Audit costs		10,334	5	10,334.06	10,334.06	10,334.06	10,334.06	10,334.06		UNDP	SDC	72100 Contractual services	51,670.31
3.12 Project Mid-term and Final evaluation		30,000	2	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00		UNDP	SDC	72100 Contractual services	60,000.00
Sub-total Project Management, Monitoring and Evaluation				688.82	95,382.88	125,382.95	95,382.88	124,694.06					536,914.48
Total Net				688.82	1,064,844.29	1,566,315.33	737,798.99	554,163.20					4,929,629.63
GMS (8%) = 8% Total Net/108				55.11	85,187.54	125,306.83	59,023.92	44,333.06					370,370.37
GRAND TOTAL				743.93	1,150,031.83	1,691,642.16	796,822.91	762,262.91					5,000,000.00

Annex 6. Social and Environmental Screening Plan (SESP)

Project Information

Project Information	
1. Project Title	Strengthening the Climate Adaptation Capacities in Georgia
2. Project Number	
3. Location (Global/Region/Country)	Georgia

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

The project will be guided by the human rights-based approach. All project activities will be based and will apply Human rights principles such as: Equality and non-discrimination, participation and inclusion, accountability and rule of law. Development of multi-hazard risk information and capacity building with relevant risk-informed preparedness and response planning will be approached as a means for safeguarding the basic rights of rights-holders (women, men, youth and other vulnerable groups) and enabling proper satisfaction of their fundamental rights, needs and interests as well as reducing their vulnerability to climate risks. Whilst, at the same time, it will provide the duty-bearers at central, regional and local level stronger capacities and opportunities to effectively fulfil their obligations and increase accountability.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

Gender considerations will be mainstreamed throughout project activities. The project will pay special attention to ensure that the needs and priorities of women and girls are incorporated into the national policy framework as well as in local policies and initiatives related to multi-hazard risk profiling, vulnerability assessment and risk informed preparedness and response planning. When providing support to EMS and local municipalities in developing risk-informed preparedness and response planning the project will make a special focus on needs of youth, women and other vulnerable population groups.

The project will proactively seek an equal participation of women and men in local policy making. Special interventions will be designed to mobilize and empower women/youth groups and NGOs working on gender equality/youth issues to engage them in developing specific activities under the project related to vulnerability assessment and risk profiling.

Knowledge products produced within the project will go through the gender analysis to ensure gender neutral language is applied. Sex-segregated data collection will be in place for the purpose of monitoring and evaluation.

Briefly describe in the space below how the Project mainstreams environmental sustainability




Environmental sustainability is at the core of climate change adaptation. The proposed support will be implemented with the due consideration of the environmental impact having in mind institutional, policy and operational aspects. The policy institution will be provided with technical assistance on following good practice of implementing environmentally sustainable policy. The proposed support will promote and raise awareness of climate change aspects and importance of hazard risk information in the mitigation strategies. UNDP and implementing partners will ensure compliance of any equipment and other inputs procured with internationally recognized environmental standards.

Part B. Identifying and Managing Social and Environmental Risks

<p>QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>	<p>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</p>	
<p>Risk Description</p>	<p>Impact and Probability (1-5)</p>	<p>Significance (Low, Moderate, High)</p>	<p>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</p>
<p>Risk: No risks identified</p>	<p>I = P =</p>		
<p>[add additional rows as needed]</p>			
<p>QUESTION 4: What is the overall Project risk categorization?</p>			
<p>Select one (see SESP for guidance)</p>			
<p>Low Risk <input checked="" type="checkbox"/></p>			
<p>Moderate Risk <input type="checkbox"/></p>			
<p>High Risk <input type="checkbox"/></p>			
<p>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?</p>			
<p>Check all that apply</p>			
			<p>Comments</p>

	Principle 1: Human Rights	<input type="checkbox"/>
	Principle 2: Gender Equality and Women's Empowerment	<input type="checkbox"/>
	1. Biodiversity Conservation and Natural Resource Management	<input type="checkbox"/>
	2. Climate Change Mitigation and Adaptation	<input type="checkbox"/>
	3. Community Health, Safety and Working Conditions	<input type="checkbox"/>
	4. Cultural Heritage	<input type="checkbox"/>
	5. Displacement and Resettlement	<input type="checkbox"/>
	6. Indigenous Peoples	<input type="checkbox"/>
	7. Pollution Prevention and Resource Efficiency	<input type="checkbox"/>

Final Sign Off

Signature	Date	Description
QA Assessor: Nino Antadze Environment and Energy Team Leader		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted
QA Approver: Louisa Vinton Resident Representative		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC
PAC Chair: Munkhtuya Altangerel Deputy Resident Representative		UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		Answer (Yes/No)
Principles 1: Human Rights		
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ¹	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	No

¹ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	<i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ² greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No

²In regard to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ³	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i>	No

³ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No