

Climate Adaptation Georgia – Cost Benefit Analysis for Selected Adaptation Measures

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List of abbreviations

AVB	General Terms and Conditions of Contract for supplying services and work.
BMUV	German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
CBA	Cost-Benefit Assessment
CRED	Climate Resilient Economic Development
E3	Economy, Energy, Environment
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
IWH	Leibniz-Institut für Wirtschaftsforschung Halle
LTS	Long-term low greenhouse gas emission development strategy in accordance with the Paris Agreement
NAP	National Adaptation Plan
NDC	Nationally Determined Contributions
SSP	Shared Socioeconomic Pathways
ToRs	Terms of Reference

1. General information

1. Brief information on the project

The programme “Policy Advice for Climate-Resilient Economic Development (CRED)” is commissioned by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and is implemented by the Deutsche Gesellschaft fuer internationale Zusammenarbeit (GIZ) GmbH from 01/2019 until 06/2025. Climate change is one of the greatest threats facing humanity, with far-reaching and devastating impacts on people, the environment, and the economy. Accelerating climate change adaptation is a human, environmental, and economic imperative. Planning and investing in systematic adaptation actions, and in the innovations that come with it, can unlock new opportunities, and provide a triple dividend: they avoid economic losses, support economic growth, and deliver additional social and environmental benefits.

The CRED programme activities in Georgia are conducted in coordination with its partner institution, the Ministry of Economy and Sustainable Development of Georgia (MoESD). They are directed towards the following application areas focusing on climate adaptation:

- Developing methods and tools for modelling the economic impacts of climate change;
- Supporting the lead executing agencies and implementing partners to become independent users of macroeconomic models (capacity building through training and coaching);
- Supporting the lead executing agencies and relevant stakeholders in integrating the results in policy-making processes and adaptation planning.

2. Context of the assignment

The CRED programme helps building country-specific models based primarily on the needs of the national ministries of economy and the subordinate authorities. Sectoral effects on productivity, the profitability of adaptation measures and inter-sectoral interactions within the national economies are to be modeled and prepared for political decision-making processes. For economic modeling and capacity development, the CRED project is supported with technical expertise from Gesellschaft für Wirtschaftliche Strukturforschung (GWS).

Under the current programmatic activities in Georgia, a macroeconomic dynamic Input-Output model named e3.ge (e3.ge stands for Economy, Environment, and Energy - Georgia) has been developed. The e3.ge model estimates economic values of the impacts of climate change and climate change adaptation measures at different macroeconomic sectoral levels in Georgia. The central role of the e3.ge model application is the macroeconomic and sectoral analysis of climate change and adaptation options. The model is run for different adaptation scenarios and measures identified for a specific sector, and the results can be used to compare each adaptation measure in terms of their macroeconomic impacts. Results from the scenario analysis can help determine which measures are likely to have a positive or negative macroeconomic impact in the long term and the least or the highest macroeconomic impacts (in terms of GDP, employment, and economy-wide effects). More information on e3.ge model and the modelling results for Georgia can be found [here](#).

At the present stage, CRED is focusing on developing new and translating already set climate-informed macroeconomic modelling results into relevant development strategies and adaptation policies in Georgia. Therefore, for respective economic modeling, suitable data sets are required on the expected changes in meteorological hazards that can cause economic damages (impacts), depending on the exposure and sensitivity of economic assets and processes (according to AR5 framework/ GIZ Vulnerability Sourcebook).

Some studies evaluating the effectiveness of adaptation measures for respective sectors were considered based on the Nationally Determined Contributions (NDC) and analysed taking into

account upcoming National Adaptation Plan (NAP) preparation and development processes and are mostly applied at the national level. The proposed activity of Cost-Benefit Assessment (CBA) accompanies and augments ongoing efforts to develop a country-specific macroeconomic model with integrated climate considerations and possible adaptation measures in Georgia. The macroeconomic model supports national stakeholders in evidence-based policy making, by economically analysing and prioritizing selected adaptation measures under policy scenarios defined within a parallel stakeholder process. Additionally, CRED supports sustainable water resource management which can be economically analysed through CBAs. The CBA process will be carried out in a participatory process, allowing for active stakeholder engagement, government institutions, including academia, and civil society. Upon completion and linkage with the climate economy model, the tool shall assist in science-based policymaking in the country in the long term.

For the implementation of this project, GIZ shall hire a consultant with knowledge regarding data collection for the development of CBA on climate adaptation measures, capacity development, and in supporting the transfer and communication relevant results.

3. GIZ shall hire the contractor for the anticipated contract term, from 22.10.2024 to 28.02.2025.
4. The contractor shall provide the following service:

Collect data and relevant information and prepare reports for conducting Climate Adaptation Cost Benefit Assessments.

Scope of the assignment

The assignment aims to provide data and additional information that allow a comprehensive analysis of effectiveness through cost-benefits assessments of selected adaptation measures that are part of policy scenarios that the CRED projects supports in Georgia.

The assignment shall be carried out in a participatory approach that will be described throughout the work packages. Key activities include:

- Collection and consolidation of data and additional information related to selected climate change adaptation measures including integrated solutions, policies across sectors and geographical areas
- Provision of reports and specific information that can be used for related deliverables of the overall CBA activities
- Identify impacts of selected climate change adaptation measures for future climate change scenarios (e.g., SSP1, SSP2, SSP5)¹ and provide quantified information.

The following aspects can be included in the CBAs after consultation with GIZ:

- Effective management of climate related hazards (Droughts / Floods) e.g., infrastructure prone to flood damages, water availability and distribution
- Climate related changes to agricultural productivity, e.g., irrigation systems, resilient crops
- Nature-based adaptation to climate change, e.g., through peatland protection, pasture management
- Adoption of climate smart / efficient technologies
- Design or climate-friendly infrastructure projects
- Investing in climate resilient sectors / closing of or transiting from climate vulnerable sectors
- Economic Cost-Benefit Analysis (CBA)
- Calculation of Net Present Value (NPV)

¹ [IPCC AR6 SYR LongerReport.pdf](#)

- Determination of the Cost-Benefit ratio
- Determination of the alternative costs of the adaptation measures

The contractor shall make recommendations to GIZ and project relevant stakeholders for structuring and collecting relevant data and additional information and capacity development. This includes advising on the advantages of an open science/ open data approach and propose appropriate tools for making the data available online to the broader scientific community or to selected research institutions. A full description should be made publicly available, sensitive national data should be removed in the public version upon request from the national partners.

Work package 1: Collect data and additional information

1. Analyse adaptation measures selected by national partners and GIZ for technical feasibility (e.g., data sufficiency) and consult with other consultants hired by GIZ. If necessary, propose an appropriate quantification method to tackle data challenges and clarify underlying assumptions.
2. Use the provided Excel templates for gathering data required for selected CBAs, including costs and economic benefits. Ensure costs cover investment and recurrent components, measured as a percentage of Georgian GDP or in constant monetary units. Clearly state data sources and assumptions in the CBA.
3. Collect information and data on other national analyses including quantifications of policy measures of pre-existing climate adaptation CBAs in Georgia and identify possibilities of up-scaling these CBA.

Suggested adaptation measures	Source
1. Enhanced Flood Protection	UNDP/GIZ
2. Adaptation to support Sustainable Forest Management	GIZ
TBD –Agricultural Sector.	
TBD – Resilient infrastructure	

GIZ will provide the materials for the suggested adaptation measures above.

Work package 2: Conduct CBA and generate outputs

4. Provide studies and relevant data that allow for an aggregation of the selected adaptive measures at the national level. Through a comprehensive analysis of studies and available data, appropriate assumptions can be made to make conclusions for nationwide effects.
5. Generate the CBA outputs in line with climate change scenarios. The results shall indicate the effectiveness of each adaptation measure to reduce the impacts of climate change (use and refer to selected climate hazards that are provided by GIZ) on the selected sectors. The CBA outputs are the inputs for the macroeconomic model developed by GIZ and therefore, need to be structured accordingly.
6. Two scenarios (Enhanced Flood Protection and Adaptation to Sustainable Forest Management) shall be thoroughly analysed. The depth and detailisation of the analysis of the other two scenarios shall depend on data availability.

Work package 3: Consult with stakeholders and enable capacity building

7. Consult with key experts in the field in terms of data provision, methodologies proposed and information presented in the reports.

8. Collaborate with the experts that are hired by GIZ. Consult with relevant national stakeholders and GIZ for the research proposal and content of the draft report before finalising the final report.

Work package 4: Prepare & submit deliverables

9. Report for data provision that highlights the approach and methodology by preparing a PowerPoint presentation outlining the methodology, the scope of work and the sample CBA results from adaptive measures.
10. Provision of a draft report (in English) based on comments from GIZ on the PowerPoint presentation.
11. Prepare (i) the excel-based summary of impacts of climate change on selected adaptation measures and (ii) the excel-based CBA calculations based on comments from GIZ and related stakeholders.
12. Support the synthesise all comments of related parties to complete the final assessment report with about 10 pages of written text.

Reporting

The contractor reports regularly to GIZ in accordance with the current AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

GIZ has the goal to tackle and address current challenges in fostering equality of opportunity and rights for all individuals, regardless of their gender or sexual orientation. The gender strategy of GIZ is available online here: <https://www.giz.de/en/downloads/giz-2019-en-gender-strategy.pdf>. Gender aspects must be considered in all studies commissioned by GIZ. Please follow the given instructions:

1. The reports must be written in gender sensitive language. Please find more information on gender sensitive language [here](#).
2. The final report must include gender aspects in its analysis, e.g.: female employment, effects of climate risks on women.
3. If experts are consulted for the modelling process, female experts should be taken into account.
4. The final report should also include a gender sensitive impact assessment and gender sensitive recommendations.

Certain country-specific milestones, as laid out in the table below, are to be achieved during the contract term by the contractor.

Milestones/process steps/partial services	Deadline/place/responsibility
Analysis of selected adaptation measures for technical feasibility	Before end of October 2024
Report on data, challenges, and options with available data gaps	Before the end of October 2024
Data collection (e.g., consolidation, quantification)	October 2024
PowerPoint presentation outlining the methodology, the scope of work and the sample CBA results from adaptation measures	October 2024
Draft version of first 2 excel based CBA results	Beginning of November 2024
Draft report	Beginning of December 2024
Final version of first 2 excel based CBA results	End-of November 2024
Draft version of other 2 excel based CBA results	Beginning of December 2024

Draft report	Beginning of January 2025
Final version of other 2 excel based CBA results	Mid-January 2025
PowerPoint presentations	Beginning of February 2025
Final report	End of-February 2025

Period of assignment from 22.10.2024 to 28.02.2025.

Concept

In the tender, the tenderer is required to show *how* the objectives defined in Chapter 3 (Tasks to be performed) are to be achieved, if applicable under consideration of further method-related requirements (technical-methodological concept). In addition, the tenderer must describe the project management system for service provision.

Note: The numbers in parentheses correspond to the lines of the technical assessment grid.

- **Technical-methodological concept**

Strategy (1.1): The tenderer is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 2, Context) (1.1.1). Following this, the tenderer presents and justifies the explicit strategy with which it intends to provide the services for which it is responsible (see Chapter 3, 3.1.1, 3.1.2. Tasks to be performed) (1.1.2).

The tenderer is required to describe the key **processes** for the services for which it is responsible and create an **operational plan** or schedule (1.4.1) (chapter 4) that describes how the services according to Chapter 3 (Tasks to be performed by the contractor) are to be provided. In particular, the tenderer is required to describe the necessary work steps and, if applicable, take account of the milestones and **contributions** of other actors (partner contributions) in accordance with Chapter 3 (Tasks to be performed) (1.4.2).

The tenderer is required to describe its contribution to knowledge management for the partner (1.5.1) and GIZ and to promote scaling-up effects (1.5.2) under learning and innovation.

- **Project management of the contractor**

The tenderer is required to explain its approach for coordination with the GIZ project. In particular, the project management requirements specified in Chapter 3 (Tasks to be performed by the contractor) must be explained in detail.

The tenderer is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the tender; the plan includes information on assignment dates (duration and expert months) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

Tender requirements

1. *Qualifications of proposed staff*

1.1. *Teamleader:*

Tasks of the team leader

- Develop and manage a detailed project timeline and workflow.
- Coordinate interactions between the key expert, short-term experts, and stakeholders.
- Review and approve drafts and final reports.
- Act as the primary point of contact for stakeholders, providing project updates.
- Organize and lead meetings to discuss project progress and integrate feedback.
- Quality assurance of data collected and submissions.

1.1.1. General qualifications

Education: University qualification (Diploma/Master) in development, environment, economics, or a related field

Professional experience: 6 years' experience in environmental and economic research with focus on science-based policy advisory/development in the climate change adaptation context

1.1.2. Experience in the region/knowledge of the country

2 years of experience in projects in Georgia

1.1.3. Language skills

Georgian, fluency in English

1.2. *Expert 1:*

Tasks of key expert 1

- Gather and manage necessary data for accurate analysis.
- Collection and consolidation of data and additional information related to selected climate change adaptation measures including integrated solutions, policies across sectors and geographical areas.
- Identify impacts of selected climate change adaptation measures for future climate change scenarios (e.g., SSP1, SSP2, SSP5)² and provide quantified information.
- Assemble the findings into structured reports, drafting sections on methodology, results, and recommendations.
- Provide sector-specific knowledge and expertise on proposed adaptation measures.

1.2.1. General qualifications

Education: University qualification (Diploma/Master) in development, environment, economics, or a related field

² [IPCC AR6 SYR LongerReport.pdf](#)

Professional experience: 4 years' experience in environmental and economic research with focus data collection, systematization and analysis

1.2.2. Experience in the region/knowledge of the country

2 years of experience in projects in Georgia

1.2.3. Language skills

Georgian, fluency in English

1.3. Expert 2:

Tasks of key expert 2

- Gather and manage necessary data for accurate analysis.
- Collection and consolidation of data and additional information related to selected climate change adaptation measures including integrated solutions, policies across sectors and geographical areas.
- Identify impacts of selected climate change adaptation measures for future climate change scenarios (e.g., SSP1, SSP2, SSP5)³ and provide quantified information.
- Assemble the findings into structured reports, drafting sections on methodology, results, and recommendations.
- Provide sector-specific knowledge and expertise on proposed adaptation measures.

1.3.1. General qualifications

Education: University qualification (Diploma/Master) in development, environment, economics, or a related field

Professional experience: 3 years' experience in environmental and economic research with focus data collection, systematization and analysis

1.3.2. Experience in the region/knowledge of the country

2 years of experience in projects in Georgia

1.3.3. Language skills

Georgian, fluency in English

2. Quantitative requirements

Per-diem and overnight accommodation allowances are reimbursed as a lump sum up to the maximum amounts permissible under tax law for each country as set out in the country table in the circular from the German Federal Ministry of Finance on travel expense remuneration (download at <https://www.bundesfinanzministerium.de>).

All travel activities must be agreed in advance with the staff member responsible for the project.

Sustainability aspects for travel

³ [IPCC AR6 SYR LongerReport.pdf](https://www.ipcc.ch/report/ar6/syr/longerreport/)

GIZ would like to reduce greenhouse gas emissions (CO₂ emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, such as selecting the lowest-emission booking class (economy) and using means of transport, airlines and flight routes with a higher CO₂ efficiency. For short distances, travel by train (second class) or e-mobility should be the preferred option.

If they cannot be avoided, CO₂ emissions caused by air travel should be offset. GIZ specifies a budget for this, through which the carbon offsets can be settled against evidence.

The market for carbon credits is made up of a large number of providers, each with different claims as to their climate impact. The [Development and Climate Alliance](#) has published a [list of standards](#). GIZ recommends using the standards specified there.

Fee days	Number of experts	Number of days per expert	Comments
• Preparation/debriefing	3	5	
• Implementation	3	80	
Other costs	Number of experts	Amount per experts	Comments
• Flexible remuneration			A budget of 900 GEL is foreseen for flexible remuneration. Please take this budget into account in your price schedule. Use of the flexible remuneration item requires prior written approval from GIZ.

Calculate your financial bid exactly in line with the quantitative requirements of the specification of inputs above. There is no contractual right to use up the full days/travel or workshops or budgets. The number of days/travel/workshops and the budgets will be contractually agreed as **maximum amounts**. The regulations on pricing are contained in the price schedule.

Requirements on the format of the tender

The CV can have a maximum of four pages. If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment. External content (e.g. links to websites) will also not be considered.

Annexes

1. Factsheet CRED
2. CBA Guidelines
3. E3.ge Model Handbook