Terms of reference (ToRs) for the procurement of services below the EU threshold

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Analysis of Soil Characteristics	**Project number/ cost centre:** **20.2275.4-002.00**

0. List of abbreviations

AG	Commissioning party
AN	Contractor
AVB	General Terms and Conditions of Contract for supplying services and work
BMZ	German Federal Ministry for Economic Cooperation and Development
DES	Department of Environmental Supervision
EIEC	Environmental Information and Education Center
FIMS	Forest Information and Monitoring System
FK	Expert
FKT	Expert days
KZE	Short-term expert
GCF	Green Climate Fund
MRV	Monitoring, Reporting and Verification
MEPA	Ministry of Environmental Protection and Agriculture of Georgia
NFA	National Forestry Agency
NFI	National Forest Inventory
RDA	Rural Development Agency
SDC	Swiss Development Cooperation
SFM	Sustainable Forest Management
ToR	Terms of reference
WRB	World Reference Base for Soil Resources

1. Context

Brief information on the project

Climate change impacts and the demand for fuelwood from rural population put significant pressure on Georgia's forests: up to 90% of rural households (1.43 million people) rely on fuelwood for their energy needs. The problem is exacerbated by the fact that households use obsolete technologies, such as traditional stoves with a lifetime of two years and an efficiency of 35% or less. Fuelwood demand exceeds sustainable harvesting levels, considering reduced productivity of many forests in the country because of extensive forest degradation. This forest degradation leads to a loss of carbon absorption capacity which is projected to decrease by five times between 1990 and 2030.

In order to address this negative development, the project "Enabling the Implementation of Georgia's Forest Sector Reform - ECO.Georgia" supports the Government of Georgia to implement its transformational forest sector reform agenda to put the entire nation's forests under the framework for sustainable forest management (SFM). It will do so by supporting the establishment of a nation-wide SFM system (Component 1) and in parallel promoting market development for energy efficient appliances and alternative fuels (Component 2) to address the main driver of forest degradation. The project will safeguard the reform implementation by diversifying livelihood opportunities and strengthening local self-governance in forest adjoining rural communities (Component 3).

The project is funded by the Green Climate Fund (GCF), the German Federal Ministry for Economic Cooperation and Development (BMZ), and the Swiss Development Cooperation (SDC) with GIZ being the project's accredited entity. The German contribution is part of the wider German support in the priority area "Environmental policy, conservation and sustainable use of natural resources in the South Caucasus", which aims at the sustainable use of natural resources, biodiversity conservation and climate protection, particularly for the benefit of the rural population. Similarly, both the share of renewables in the energy composition as well as the energy efficiency levels will increase.

Especially rural households using firewood as their source of heating energy will benefit from improved air quality and reduced fuelwood demand through eased access to energy efficient stoves. Forest-related small and medium-sized enterprises and their employees will receive support to improve economic efficiency and environmental sustainability of their business activities. Additionally, staff members of relevant public institutions (National Forestry Agency NFA, Department of Environmental Supervision DES, Environmental Information and Education Center EIEC, Rural Development Agency RDA, municipalities) will receive direct support through human capacity development measures and grant finance.

ECO.Georgia primarily contributes to achieving the SDG 15 (Protect, restore and promote sustainable use of terrestrial ecosystems) of the 2030 Agenda of the UN, but also to achieving SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all), SDG 13 (Take urgent action to combat climate change and its impacts), SDG 1 (End poverty in all its forms everywhere), and SDG 5 (Achieve gender equality and empower all women and girls).

The duration of ECO.Georgia is from April 2021 until March 2029. Due to the direct relationship to the forest MRV system, this service package belongs to Component 1, Activity 5, Sub-Activity 1 (Improvement of monitoring, and measurement, reporting and verification systems for the forest sector).

Objectives of the service to be tendered

As activities under Component 1 of ECO.Georgia, the partner institutions shall be supported with the further development of a national Forest Information and Monitoring System (FIMS) as well as the development of a forest-related system for Monitoring, Reporting and Verification (MRV) and capacities shall be created and improved to sustainably embed these systems technically, institutionally, and legally. Besides the forest-MRV becoming the one centralised system for Georgia's national and international reporting obligations in the forest sector, it shall also serve for assessing and reporting on the impacts of the ECO.Georgia-project.

For FIMS and the forest MRV, carbon stocks as well as their developments over time via sequestration and emissions are crucial. Data related to the above-ground biomass and carbon stocks will be available from the National Forest Inventory (NFI) and other sources. So far, however, there is no data available with regards to below-ground biomass and carbon stocks in Georgia's forests. To close this gap, a nation-wide forest soil inventory has been initiated under the ECOserve-programme, with the aim to assess soil characteristics of the countries' forests. Due to various reasons – most importantly the pandemic – this undertaking could not be completed before the Georgian component of ECOserve ended in November 2021 and shall therefore be followed-up under ECO.Georgia.

The continuation of the field works (including the collection of soil samples) as well as international backstopping for the continued soil inventory have been tendered successfully and service providers ar contracted for these two work packages, respectively. In addition, scientific analyses of the collected samples and provision of the analysis results via a unified database is needed. The tendered service package shall cover this part of the overall process and ensure the provision of robust data on Georgian forest soils. The contracted field teams describe up to 18 sites based on the creation and examination of 9 soil profiles per site (please see Concept Note: Soil properties and carbon estimation of forest ecosystems in Georgia, South Caucasus provided as Annex 2 to the tender announcement). Per profile, samples of each soil horizon (ca. 5 per profile) will be taken by the field teams to be analysed by the contractor. Up to 802 samples of earlier field activities need to be analysed for Ctot and Nitrogen to account for implausible results of previous analysis works.

2. Tasks to be performed by the contractor

The contractor is responsible for providing the following services:

a. Adequate storage and preparation of received soil samples for their analyses and until GIZ's acceptance of the services carried out under this contract
b. Organisation and conduction of physical and chemical soil analyses as described in the present terms of reference for up to 18 sites
c. Provision of analysis results via table format (MS Excel) or a data base (MS Access) provided by the contracting party
d. Provision of samples upon request for the purpose of quality control via an independent laboratory in Germany (logistics, analysis and comparison covered by another contract on international backstopping)
e. General regular exchange with the field teams and international backstoppers for harmonisation of the procedures, anticipation of number of samples to be expected from the field works, and feedback on samples' quantity and quality, their packaging, labelling, and potential other relevant aspects

g. Specific exchange on demand in case of significant differences between the analysis results of the two laboratories. For identifying significant differences, the following procedure shall be applied:
    1. The contractor will be given samples of sites from earlier field activities (up to 802 samples) – to be analysed for Ctot and N only – and an indication regarding sites/samples to be prioritised. For ca. 30 of those samples, independent analyses have already been carried out in Germany and will serve as a reference for assessing the quality of the works carried out by the contractor. For all of the 802 samples, detailed site descriptions exist and will be taken into account for plausibility checks by the international backstopping consultants.
    2. In addition, four soil profiles of the 2023 field works will be chosen by the international backstopping consultants based on the descriptive data provided by the field team
    3. Immediately after receiving the samples of the four chosen profiles, the contractor shall sieve them at 2 mm and provide an aliquot of 500 g of the sieved samples to GIZ
    4. The contractor shall not proceed with the analyses of soil samples other than the samples related to the chosen profiles
    5. GIZ and the international backstoppers will organize shipping of the provided samples to a laboratory in Germany for independent analyses
    6. For the shipped samples, the following characteristics shall be analysed again in Germany and the results compared with the data provided by the contractor:
        i. for all samples: Carbon content, Nitrogen content, pH-value (water and KCl),
        ii. for samples of mineral soil only: Carbonate content (if pHwater > 6.5), Particle size classes, Phosphorus content (Mehlich-3), exchangeable Ca, Mg and K, exchangeable Al (if pHwater ≤ 5,0)
    7. Only after receiving approval from GIZ, the contractor shall continue with the analysis procedures for the remaining samples; Approval for individual characteristics' analysis may be provided separately (e.g., C and N may be accepted and continuation of works approved before results of analysing the exchangeable cations are available)
    8. In case of rejecting the acceptance of analysis results, GIZ will provide a sound technical justification to the contractor.

List of Analyses to be conducted and expected maximum sample sizes

	Analyses	**Sample size**
1	pH-value Water (pH water)	675
2	pH-value Potassium chloride (pH KCl)	675
3	Total Carbon content (Ctot), Analysis via Auto-Analyzer preferred*	1480
4	Total carbonate content (CaCO3, Ccarb)	270
5	*Results from 3-4 =>* Total organic carbon content (Corg = Ctot-Ccarb)	n/a
6	Nitrogen content (Nt); Analysis via Auto-Analyzer preferred*	1480
7	Mass after drying (Dry mass)	135

	Analyses	Sample size
8	Available Phosphorus content according to the Mehlich-3-Method (P Mehlich 3)	540
9	Calcium exchange capacity (Ca exch) in ammonium acetate	540
10	Magnesium exchange capacity (Mg exch) in ammonium acetate	540
11	Potassium exchange capacity (K exch) in ammonium acetate	540
12	Extractable Aluminium (Al exch) in potassium chloride	270
13	Bulk density (samples provided from volumetric sampling with cylinders)	540
14	Texture according to particle size classes (to be pre-treated with H_2O_2)	540
	- Coarse sand (630 - 2000 µm)	
	- Medium sand (200 to < 630 µm)	
	- Fine sand (63 to < 200 µm)	
	- Silt (2 to < 63 µm)	
	- Clay (<2 µm)	
	*For analyses of carbon and nitrogen, the use of an auto-analyser is given preference over alternative methods such as Walkley-Black and Kjeldahl.	

Certain milestones, as laid out in the table below, are to be achieved during the contract term:

Milestones/process steps	Deadline/place/person responsible
A kick-off meeting	no later than two weeks after the contract signing
Samples from previous activities (up to 802 samples; only Ctot and N) and first four chosen profiles of 2023's field work are analysed and compared with the results from Germany. *GIZ has the right to dissolve the contract at the stage; please see details under 2g.*	30 August 2023
Submitted analysis results of soil samples from 10 sites of 2023's field work	30 November 2023
Submitted analysis results of soil samples from the remaining sites	29 February 204
Clarification of deviating datasets, the cause of deviation and implications on the data robustness	30 June 2024

3. Concept

In the tender, the tenderer is required to submit a **technical-methodological concept** showing how the objectives defined in Chapter 2 (Tasks to be performed) are to be achieved, if applicable under consideration of further method-related requirements (technical-methodological concept).

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

The technical evaluation will take place in accordance with the assessment grid. As indicated in the grid indicated, technical concept/proposal should consist of followings (Assessment Grid: 2.1):

- interpretation of the objectives/assignment
- strategy and methods for the implementation of analyses, reflecting existing alternatives
- cooperation during the implementation (stakeholders in the implementation, reference projects etc.)
- a work plan in a visual form

4. Company's profile

Company - Required competences and experience (Assessment Grid: 1.1)

- Years of operation - 3 Years
- Proof of execution of related laboratory analysis within the last two years

5. Costing requirements

The financial proposal shall be made as per analysis and as per sample (unit price per sample and per analysis) in application of the template provided as annex 3 to the tender announcement. The unit price shall cover all cost including the administrative cost related to coordination and consultation with GIZ and its contractors.

6. Inputs of GIZ or other actors

GIZ and/or other actors are expected to make the following available:

- Data base or Excel File prepared for entering the analysis results
- Logistics of soil samples from the forest to the laboratory

7. Requirements on the format of the tender

The structure of the tender must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) should be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). The tender must be legible (font size 11 or larger) and clearly formulated. It must be drawn up in English.

Please calculate your financial tender based exactly on the parameters specified in Chapter 5 Costing requirements.