**Terms of reference**

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| **Position:** | Local consultant on bathymetric surveying for predictive modeling of filling and breakthrough of moraine lakes  (hereinafter referred to as the Contractor) |
| **Project Name:** | "Further strengthening Kazakhstan's programming capacity, institutional support for expanding direct access to the Green Climate Fund and development of green finance system." |
| **Contract type:** | Individual Contract |
| **Place of service provision:** | Home-based, with possible business trips to Almaty |

**Introduction:**

The International Center for Green Technologies and Investment Projects (hereinafter referred to as the Center), in 2022, was designated by the Ministry of Ecology, Geology, and Natural Resources of the Republic of Kazakhstan as the National Implementing Organization of the Readiness project "Further strengthening of Kazakhstan's programming capacity, institutional support for expanding direct access to the Green Climate Fund (hereinafter – GCF) and development of the green Finance system". The Readiness project is implemented jointly with the United Nations Office for Project Services (UNOPS).

The Readiness project is aimed at further strengthening the country's potential and creating favorable conditions for more active participation in the GCF and attracting climate investment. The first Readiness grant created an initial enabling environment for the institutionalization of the National Designated Authority (hereinafter referred to as theNDA) and interaction with the GCF. The project will strengthen the NDA's ability to effectively and efficiently perform its functions, facilitate the successful completion of the GCF accreditation process by direct access applicants, and thus open up access to GCF funds to address climate change challenges in Kazakhstan, and allow for the development of an updated country program with a clear framework for priority climate change investments and portfolio. strengthen the practice of sustainable finance in the financial sector of Kazakhstan by creating an enabling institutional environment and building the capacity of local experts.

The Readiness project provides for five tasks:

Task 1: Update the Country Programme in accordance with GCF procedures and establish a coordination mechanism

Task 2. Institutional and potential support for direct access applicants in the GCF accreditation process

Task 3: Building the capacity of the private sector to facilitate the planning and implementation of GCF-funded activities

Task 4: Support Hydrometeorological diagnostics and identify future investment needs

Task 5. Preparation of a concept for integrating green finance issues into existing operations of the banking sector and financial institutions.

**Goal:**

The goal is to improve the system of forecasting natural disasters, which will provide information about the possibility and strength of impending threats, by predictive modeling of filling and breaking of moraine lakes.

These models will be used to predict the amount of water entering the lake from various sources, such as rain, snowmelt, or glaciers, taking into account the geography of the region, climatic conditions and other factors to predict the probability of a moraine breakout creating the lake.

Modeling will be carried out in a pilot version at the key site-Big Almaty Lake (hereinafter - BAO).

**Scope of services:**

1. Collection, systematization of initial data and in-house processing of data from field survey, cartographic, bathymetric works and surveys of the BAO.

2. Adaptation of the digital relief model (hereinafter - DEM) of the bottom of the moraine lake BAO based on bathymetric survey.

3. Calculation of the volume of Lake BAO according to bathymetric survey data.

4. Drawing up diagrams, maps, models of the moraine lake BAO based on the results of bathymetric survey for reproduction in printed (polygraphic or computer) form and vector format.

**RESULTS AND DEADLINES**

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| **№**  **n** | **Expected Results** | **Deadline** |
|  | A report on the work performed under item 1, 2, 3, 4 has been prepared containing supporting materials (collection, systematization of initial data and in-house processing of data from field survey, cartographic, bathymetric works and surveys of the BAO; adaptation of the DEM of the bottom of the moraine lake BAO based on bathymetric surveys; calculation of the volume of Lake BAO according to bathymetric surveys) | 14 weeks from the date of signing the contract |

**Business trip**

Business trips are not provided.

**Note:**

* The contractor is responsible for thequality of the prepared materials within the scope of its duties;
* The contractor works under the supervision of the team leader and the overall guidance руководителяof the project manager.
* The contractor prepares reports in Russian.
* The report must be submitted electronically in MS Word format for Windows files.

**Basic conditions**

* When performing the entire scope of services, the Contractor must ensure the complete safety of materials and finished products, excluding the creation of counterfeit products.
* It is necessary to ensure compliance with the legislation and regulations of the Republic of Kazakhstan on copyright (and related rights).
* All rights to manufactured products, including original documents and copies thereof, may be transferred to any third party by the Customer's decision, and such transfer may be made directly to a third party and immediately after completion and acceptance. All work performed in accordance with this Technical Specification (hereinafter referred to as the TOR).

**Payment schedule**

The contractor must include all expenses, including fees for professional services, travel, accommodation and other expenses, in its financial proposal for performing the tasks of the TOR. Transportation costs are indicated only if the trip is provided for by the ToR.

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| **Payment stage** | **% of the contract amount** | **Results** |
| 1 | 100 | Result 1 |

**Required skills and abilities:**

**Education:**

higher education, technical or natural sciences in one of the specialties: search and exploration of groundwater and engineering-geological surveys, hydrogeology, hydrology, geographical information systems, geodesy, cartography, geography.

**Technical and functional experience:**

 at least 10 years of professional experience;

 at least 3 years of experience in working with field survey, cartographic, and bathymetric data.

 At least 3 years of experience in drawing up diagrams, maps, models of bathymetric surveys

**Language skills:** fluency in spoken and written Russian is required.