**Terms of reference**

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| **Position:** | International Consultant for Predictive Modeling of Moraine Lake Filling and Outburst |
| **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:** | Contract for the provision of services |
| **Place of work:** | Home-based |

**Introduction:**

In 2022, the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan designated the International Center for Green Technologies and Investment Projects as the National Executing Agency for the Readiness project "Further Strengthening Kazakhstan's Capacity in Programming, Institutional Support for Expansion of Direct Access to the Green Climate Fund (GCF) and Development of a Green Finance System."

The Readiness project is implemented in partnership with the United Nations Office for Project Services (UNOPS). The project aims to further enhance the country's capacity and create favorable conditions for more active participation in the GCF and attracting climate investments. The first Readiness grant established an initial favorable environment for the institutionalization of the NDA 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 access to GCF funds to address climate change issues in Kazakhstan. It will enable the development of an updated country program with clear frameworks for priority climate change investments and a project portfolio, as well as strengthen sustainable finance practices in Kazakhstan's financial sector by creating a favorable institutional environment and building the capacity of local experts.

The Readiness project has five tasks:

1. Update the Country Program in accordance with GCF procedures and create a coordination mechanism.
2. Provide institutional and capacity support to direct access applicants for the GCF accreditation process.
3. Build the capacity of the private sector to support planning and implementation of GCF-funded activities.
4. Design a system for monitoring and forecasting natural disasters related to climate change.
5. Develop a concept for integrating green finance into the existing operations of the banking sector and financial institutions.

**Objective:**

The goal is to improve the disaster forecasting system to provide information on the likelihood and severity of imminent threats, specifically through predictive modeling of moraine lake filling and outburst. These models will be used to predict the amount of water entering the lake from various sources, such as rain, snowmelt, or glaciers, considering the region's geography, climate conditions, and other factors to forecast the likelihood of moraine dam breaches creating lakes.

Modeling will be conducted on a pilot basis at the key site - Big Almaty Lake (BAL).

**Scope of Work:**

1. Analyze and assess advanced international practices in moraine lake outburst modeling and provide recommendations for adapting international practices to Kazakhstan, including but not limited to:
	* International experience in moraine lake outburst modeling
	* Selection of advanced models adaptable to Kazakhstan's landscapes
	* Integration of remote sensing data
	* Development of a risk management concept, including monitoring, warning, and mitigation measures
2. Provide consulting support to national consultants and assistance with sector-specific tasks. This support includes field research, consultations on hydrological calculations, and modeling and data processing using Geographic Information Systems (GIS) and remote sensing data.

**RESULTS, TIMELINES**

| **No.** | **Results** | **Delivery Time** |
| --- | --- | --- |
| 1. | Report on services provided under point 1 of the scope of work, including supporting materials (Analysis and assessment of advanced international practices in moraine lake outburst modeling and recommendations for adapting international practices to Kazakhstan) | 3 weeks from contract signing |
| 2. | Report on services provided under point 2 of the scope of work, including supporting materials (Consulting support to national consultants and assistance with sector-specific tasks) | 6 weeks from contract signing |

**Travel:**

No travel is anticipated under this technical specification.

**Note:**

* The contractor is responsible for the quality of prepared materials within their duties.
* The contractor prepares reports in Russian.
* The service report must be submitted electronically in MS Word format for Windows through the electronic document management system. If the report is submitted on paper, the reporting materials must be stitched. The cover page of the report must contain the contractor's name, the name of the services provided, contract details, signature, and contact information.

**Main Conditions:**

* In providing all types of services, the contractor must ensure the complete preservation of materials and finished products, preventing the creation of counterfeit products.
* Compliance with the legislation and regulatory acts of the Republic of Kazakhstan on copyright (and related rights) is required.
* All rights to the produced products, including original documents and their copies, may be transferred to any third party at the discretion of the client. Such a transfer can be made directly to the third party immediately after the completion and acceptance of the services.

**Payment Schedule:**

The contractor's financial proposal must include all expenses, including fees for professional services, travel, accommodation, and other expenses, in their financial proposal for the tasks of the technical assignment. Travel expenses are specified only if trips are provided for in the Technical Assignment.

| **Payment Stage** | **% of Contract Amount** | **Results** |
| --- | --- | --- |
| 1 | 50% | Result 1 |
| 2 | 50% | Result 2 |