**ANNEX 1**

**List of Main Requirements and Technical Specifications**

1. **Introduction and objectives**

Climate-induced disasters occur more frequently and repeatedly in Moldova, provoking economic damages of about 4 million USD annually. Such a risk exposure is explained by agriculture dependence on the volume of precipitations at the country level, being the most vulnerable sector of the national economy. The main cause is water deficit for agricultural needs, but also the limited resources and capacities to plan and to use the infrastructure for water storage for irrigation purposes in Moldovan rural communities.

In this context, the “Disaster and Climate Risk Reduction in Moldova” Project aims to increase resilience and adaptive capacities of rural communities to climate change and disasters trough improved water storage infrastructures and disaster risk reduction measures. The main goal of the project is to facilitate the implementation of climate-smart water management solutions for agriculture, flood management, fire prevention and expansion of community-based rescue/firefighting teams in selected rural communities of the Republic of Moldova. The project implementation period is 2019-2021, and the geographical areas of activity and intervention are limited to 5 districts - Cantemir, Criuleni, Hîncești, Leova and Ungheni. The project is financed by Austrian Development Agency and implemented by United National Development Programme.

One of the activities of the project is to build rainwater storage reservoirs to help the famers to cope with effects of climate-induced disasters. It is envisaged for the potential beneficiaries of the rainwater storage reservoirs to be the famers needing infrastructure for collecting and storing water to cover the irrigation needs for about 5 ha of agricultural land. As well, the farmers-beneficiaries of this project, will co-finance the investment for a value of at least 20% of the total cost of the project. The total volume of the financial support provided by the Project per one beneficiary will not exceed the amount of 30.000 USD, even when the beneficiary’s contribution value exceeds 20%.

1. **Content of works and beneficiaries**

2.1 Commonly, the works’ content will envisage the following types of works: earthworks and construction work; territory planning and enhancing works, construction of access ways to the reservoir for irrigation, and launch into operation works. All these types of works and activities will contribute to improving the conditions for farmers’ sustainable agricultural activity from Ungheni, Hîncești, Cantemir, Leova and Criuleni – beneficiaries of the *ADA/UNDP Moldova “CCDRR” Project.*

2.2 The earthworks and construction work for which the respective Call for Proposals is launched, refer to one single lot, as follows in the below table:

|  |  |
| --- | --- |
| **Locality** | **Site name** |
| Boscana v., Criuleni r. | *Building the water reservoir for irrigation of the agricultural enterprise ”Concom RTCA” SRL* |
| Sofia v., Hîncești r. | *Building the water reservoir for irrigation of the agricultural enterprise*  *”Concom RTCA” SRL* |
| Boghenii Noi v., Ungheni r. | *Building the water reservoir for irrigation of the agricultural enterprise*  *”Cand Vas” SRL* |

2.3 The project envisages building (excavating) a reservoir for collecting and storing rainwater, building a dam, cleaning, and reinforcing the banks and the embankments of the reservoir, as well as of the rainwater intake ways.

The projects envisaged for these construction sites shall include the following types of earthworks and construction works:

* Preparing the temporary board-based access ways to the reservoir for construction technical means on the crawler; levelling and organizing the platform for temporary collecting and drying of silt/ marshy soil excavated from the reservoir bed.
* Mechanized digging with an excavator on the crawler of the claying soil from the reservoir bed for a volume of 10000 m3, pushing and spreading the soil with the bulldozer on the crawler for about 50m up to the storage place.
* Excavating the soil from the reservoir bed with the bulldozer for building the dam, for a volume of about 4000 m3, leveling the embankments and mechanized compacting of the soil up to sc=1,65t/m3, with a compactor weighting 16t.
* Manual mechanized works for profiling and levelling the reservoir bed and embankments after cleaning; transporting and laying the new fertile soil (as needed), etc.

2.4 The Contractor shall ensure all the necessary things for successful implementation of the contract: labor force, engineering, materials, equipment, support materials, transport, machinery, devices, and necessary trips for performing all the works under this contract.

*Commonly, the Contract will include the following activities:*

* ***procurement and delivery*** of materials and equipment, which is necessary for successful carrying out of works;
* ***preparing the site*** for storing materials, equipment and executing the works;
* ***construction works –*** listed above;
* ***launch into operation*** of construction works and materials.

2.5 The Contractor shall ensure for all the constructions-related materials and activities under the contract, before being executed, to be coordinated with the representatives of the Beneficiary and CCDRR/UNDP Moldova Project, accountable for the daily supervision and periodical monitoring of the works on the site.

***Note for bidders:***

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| --- |
| ***Whenever the technical specifications request a specific product, specific brand, name/model, the bidders may come up with suggestions to coordinate any other product, which would have equal characteristics with the specified product, meeting all origin requirements, physical, functional, and performance parameters.*** |

1. **Construction site**

The works under the respective tender shall be carried out according to the above-mentioned lot.

# **Organizational arrangements**

The implementation of the project and the fulfilment of on-site works shall be monitored by the Engineer – Consultant, appointed by UNDP Moldova, who will systematically visit the construction site for monitoring. Additionally, the Engineer- Technical Responsible, authorized by the project Beneficiary, shall ensure the daily supervision of construction works envisaged in the contract.

1. **Expected results**

The Contractor is expected to deliver the proposed works given the following implementation period:

Result 1: Completion of all the construction works within a period of not more than 90 calendar days from the date of signing the Contract.

Result 2: Final commissioning of the object: up to 3 months from the date of acceptance of the object at the completion of works.

1. **Main technical requirements and specifications**

The project for building the reservoirs provide, particularly, for: preparing the land plots, excavating the storage reservoirs, building the dams, building the ways for water intake and water discharge, reinforcing the banks and embankments up to the parameters calculated in the project documentation;

The technical solutions and construction works shall be carried out for:

1. LLC ”Concom RTCA”,according to design documentation no. 11 N - 2020 LH, din 15.12.2020;
2. LLC ”Concom RTCA”,according to design documentation no. 12 N - 2020 LH, din 15.12.2020;
3. LLC ”Cand Vas”, according to design documentation no. 13 N - 2020 LH, din 15.12.2020;

Technical designs were developed by „Nova Proiect” LLC, license AMMII Nr. 050676 from 02.02.2011; based on Urbanism Certificates; the technical specifications announced for this tender, as well as the local standards: SNiP-2.06.01-86 “Hydro-technical constructions”; SNiP-2.06.03-85 “Irrigation systems and constructions”; SNiP III-4-80 “Security Measures”; Standardized design for dams no. 820-4-023.86.

*Reservoir:* the construction sites meant for the reservoirs shall be excavated, and the fertile layer of soil shall be collected to be used for farming, especially the clayish ground, category II, increased humidity. Due to these considerations, it is necessary to use the crawler excavating technical means.

In case of rainy conditions, it may be necessary to install temporary plywood access roads for crawler excavators. The banks and slopes will have inclinations m = 1.0, m = -1.5, m = 2.0, as the case may be. The backfill will be compacted until obtaining Y = 1.6g / cm3.

*Emptying tubes:* will be constructed of HDPE polyethylene pipes, of sections welded, having a diameter of Ø 160 x 9.5 mm, PN 10 butt welded joint fittings made of polyethylene with a diameter of 250 mm. The pipes will be laid / mounted by the method of horizontal directed drilling (FOD), with diam. 250 mm. The emptying chimney will be built of prefabricated elements from reinforced concrete type, in set: КЦД-15, КЦ 15-9a, КЦ 5-6, КЦП1-15, КЦО-1, КЦ 7-3; For the execution of the works of consolidation of the slopes in the places of water evacuation, as the case may be, cycloptic concrete B15 will be used.

*Dams:* The dams will be built using clay ground, II category, excavated locally from the reservoir bed. The dams’ embankments shall be compacted until obtaining Y=1,6g/cm3. The finally reinforced banks and dams shall have compacted slopes of m=1.0-1.5, as needed. The width of the crown at the top of the dam shall be not less than 4.50m.

1. **Reception by the end of works**

After finishing the construction works, installing and testing appropriately the equipment envisaged in the contract, training the personnel, and transferring the execution documents, the procedure for launching into operation the site shall be organized. All the costs related to organizing the tests for installed systems and training the personnel shall be incurred by the Contractor.

1. **Warrantee period**

The warrantee period for the performed works shall start on the date of site reception upon finishing the works and shall last for 36 months.