

TERMS OF REFERENCE

A. Job Title:	National Consultant for the Agro-meteorological Monitoring
B. Duty Station:	Chisinau, Moldova
C. Project reference:	Enhancing human security in Moldova through agri-food resilience to intensifying external and climate shocks
D. Contract type:	Individual Contract (IC)
E. Contract Duration:	50 working days during August 2024 – March 2025

F. BACKGROUND:

Agriculture, the mainstay of the Moldova economy, constitutes 12% of the GDP, employs 30% of the Moldovan population and provides livelihood opportunities for more than half of the people of the country. It is, however, being affected heavily by the compounded crisis following the war in Ukraine, as well as by the worsening trends in frequency and severity of weather hazards (drought in 2020 and 2022, late frosts, heavy rainstorms and hail in 2023) due to climate change, which without concrete resilience-building measures will continue to undermine the food security of the country and increase the risks of conflicts over use of water and land resources.

Therefore, enhancing adaptation of the country's agri-food system in the face of the intensifying climate and disaster risks is a pre-requisite for eliminating hunger and protecting livelihoods and productive assets for food security. The measures proposed by this project will contribute to reduction of the agricultural and economic losses caused by the natural hazards and is a step forward towards achievement of commitments assumed by the country under the Sendai Framework (2015-2030). Ultimately, the country will be more prepared for future food security crisis, contributing to the realization of the local and global food security objectives adopted during the G7 Japan Summit in 2023.

The overall objective of the project is to strengthen the agri-food security of the country under the current multidimensional crisis, including the intensifying climate and disaster threats.

It is composed of the following objectives:

- Objective 1: To improve the climate and disaster risk management in the country through upgraded agro-meteorological, hydrological monitoring system and data analytics
- Objective 2. Establish a solid foundation for implementation of the climate change adaptation and disaster risk reduction measures and budgeting

G. Objective:

To provide support in the project activities that are focusing on the extension of the existing agro-meteorological monitoring network managed by the State Hydrometeorological Service. as outlined in the project proposal.

H. Scope of work and expected outputs:

Under supervision of the Project Manager, in close consultations with the representatives of the State Hydrometeorological Service (SHS), the National Consultant shall:

1. Identify the suitable locations for installing the time agro-meteorological monitoring stations:

- 1.1. Based on specific monitoring objectives, identify the most suitable 9 new sites for automatic agro-meteorological monitoring stations.
- 1.2. Discuss with representative of SHS, project staff the relevant sites for installing the agro-meteorological monitoring stations.
- 1.3. Prepare the report on the preselected localities, that will include the geographical location of the sites and their correspondence regarding the proposed localities.

2. Conduct inspection studies to the pre-selected localities

- 2.1. Meet with the owners of the proposed locations to discuss the conditions of cooperation regarding the extension of the agro-meteorological network.
- 2.2. Validate the locations regarding the initial criteria that were used for the selection of the localities.
- 2.3. Organize a stakeholder meeting to discuss and validate the findings of inspection studies along with preliminary requirements for developing technical specifications.
- 2.4. Prepare the report on the validation of at least 9 selected localities.

3. Develop the technical specifications, and tender documentation.

- 3.1. Following aspects should be included into the description, but the description should not be limited to these elements:
 - **Components of the AMM station:** Parameters to be measured and types of sensors for in-situ operation required for each monitoring parameter. Define the reading frequency, measurement range, accuracy, and resolution for each sensor in compliance with WMO requirements. Specify the requirements for automatic cleaning of sensors and protection against possible damage (e.g. ice, waste, algae etc.). List the spare parts and consumables (e.g. calibration and cleaning solutions) to be supplied with equipment.
 - **Hardware and Software for Data Acquisition System:** specify the required hardware of the data acquisition system in compliance with WMO requirements. Specify the software requirements for the data acquisition system in compliance with WMO requirements. Specify the data storage capacity and retention period for continuous monitoring.
 - **Data transmission and communication:** Communication options for real-time data transmission (e.g. cellular networks). Define the required data formats and protocols for seamless integration with existing monitoring systems or databases in compliance with WMO requirements. Specify the frequency and method of data transmission to a central server or data repository.
 - **Power supply:** Specify the power requirements of the autonomous monitoring station, including voltage, frequency, and power consumption. Define the power supply options, such as solar panels, battery backup systems, or other sustainable energy sources, to ensure an uninterrupted operation.

- **Enclosure and protection:** Specify the level of protection required against water ingress, physical damage, and environmental factors (e.g., UV radiation, temperature extremes). Define the enclosure material, dimensions, and any necessary certifications for durability and resistance to corrosion.
 - **Site Installation and mounting:** Specify the mounting requirements for the autonomous monitoring station, considering factors such as accessibility, stability, and representativeness of the monitoring location. Provide guidelines for installation, including any specialized tools or equipment needed. Specify any safety precautions for installation in a river environment. List the required actions and tests to be performed by the equipment supplier at installation (e.g. configuration, programming, checklists, calibration, operational test, acceptance test etc.)
 - **Maintenance and support:** Define the required maintenance support and intervals for the automatic monitoring station. Specify the required technical support, warranty, and service level agreements (SLAs) from the supplier. List the spare parts and consumables to be included in the equipment package.
 - **Data Management and reporting:** Specify the required data outputs, automated alerts, and customizable reports. Define the data management software or systems needed for real-time data storage, retrieval, and analysis. Outline any specific data quality assurance and quality control procedures that need to be implemented.
- 3.2. **Compliance and standards:** Specify any regulatory or industry standards that the autonomous monitoring station should comply with, such as ISO standards etc. Include any necessary certifications or approvals required for installation and operation.
- 3.3. **Prepare a cost estimation for the procurement** of an AMM station, along with the related services to be provided by the equipment supplier. The cost estimation should encompass all aspects, including the cost for acquisition of monitoring station and mandatory spare parts, if any, installation expenses, required training and any other relevant costs. The document should present an estimate breakdown of the budget. The estimation should be prepared in accordance with the project's requirements and constraints, ensuring that it aligns with the organization's financial guidelines and procurement procedures.
- 4. Elaborate the Document for the Request for Quotation for the agrometeorological equipment.**
- 4.1. Technical specifications and tender documentation should be in line with the requirements of UNDP and correspond to the selected tender procedure.
- 4.2. Ensure that the technical specifications cover various aspects of agro-meteorological monitoring (AMM) station to ensure these meets the necessary requirements, standards, and functionalities for effective water level monitoring.
- 5. Participate in evaluation of the tender bids.**
- 5.1. Review the tender document, screen the applicants for compliance towards the minimum selection criteria.

- 5.2. Support the technical scoring, review the proposed approach, the list of equipment and compliance towards tender criteria.
- 5.3. Assign the scoring for the technical proposal as a part of the evaluation panel member.
- 5.4. Review the financial offer of the pre-selected bidders to ensure the best option for the proposed equipment.

6. Final report on the implementation of assignment.

- 6.1. Provide a detailed account of the activities and tasks completed during the assignment.
- 6.2. Include a comprehensive analysis of the data and findings collected throughout the project.
- 6.3. Document the methodologies and approaches used in the implementation of the assignment.
- 6.4. Present the key outcomes and results achieved, including any measurable impacts.
- 6.5. Highlight challenges encountered and how they were addressed.
- 6.6. Offer recommendations for future actions or improvements based on the findings.
- 6.7. Compile all relevant supporting documents, such as meeting notes, stakeholder feedback, and training materials.

The assignment will be undertaken in close consultation with the State Hydrometeorological Service that is the beneficiary institution of AMM stations.

Expected Deliverables of the Lead Consultant:

item no.	DELIVERABLES	Estimate Workdays	Tentative timeframe
	Tasks		
1.1	One Report on the identification of at least 9 locations	15 w.d.	August 2024
1.2	One Report on validation of at least 9 locations	4 w.d.	August 2024
1.3	One Report on Contracts signed with Agri producers for at least 9 locations	9 w.d.	September 2024
1.4	One document "Technical specifications (Components of the AMM station, parameters to be measured and types of sensors, Hardware and Software for Data Acquisition System, Data transmission and communication, power supply, enclosure and protection, Site Installation and mounting, Maintenance and support, Data Management and reporting, Compliance and standards, Training to be provided by the equipment supplier)" for 9 locations including inputs for Request for Quotation for	14 w.d	September 2024

	agrometeorological equipment"		
1.5	Evaluation of the Request for Quotation participation in the evaluation panel	5 w.d.	March 2025
1.6	Final report on the implementation of assignment.	3 w.d.	March 2025
	Total 50 days		

J. Organizational Setting:

The National Consultants will work under the direct supervision of the UNDP Project Manager. The National consultants should liaise with the relevant stakeholders, both on the national and local levels. The consultants will provide deliverables in Romanian in electronic copies and according to the timeframe from the deliverables table. The Project Manager should approve the deliverables.

K. Financial arrangements:

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables (i.e., whether payments fall in installments or upon completion of the entire contract). Payments are based upon output, i.e., upon delivery of the services specified in TOR. To assist the requesting unit in the comparison of financial proposals, the financial proposal will include a breakdown of this lump sum amount (including the daily fee, taxes, and the number of anticipated working days).

L. Confidentiality

Materials provided to the Consultant and all proceedings within the consultancy contract shall be regarded as confidential, both during and after the consultancy. Violation of confidentiality requirements may result in immediate termination of the contract.

M. Qualifications and skills required:

I.Academic Qualifications:

- Advanced Technical Degree in engineering, geography, meteorology, information systems or another relevant area.

II.Years and sphere of experience:

- At least 3 years of progressing work experience IT, environment, meteorology that is related to the monitoring-related activities.
- At least 2 years of work experience with national-level environmental authorities.
- Previous experience of work with SHS will be an advantage.

III.Competencies:

- Demonstrated knowledge of the principles of agro-ecological monitoring.

- Demonstrated technical knowledge on monitoring sensors, in compliance with WMO requirements, companies active in this domain.
- Demonstrated experience in elaboration of technical requirements for procurement procedures.
- Strong communication and leadership skills
- Fluency in Romanian and English is required for this assignment, Russian will be an asset.
- Strong communication and leadership skills.

Proven commitment to the core values of the United Nations respecting differences of culture, gender, religion, ethnicity, nationality, language, age, HIV status, disability, and sexual orientation, or other status. **Please mention in CV if you belong to the group(s) under-represented in the UN Moldova and/or the area of assignment.**

UNDP Moldova is committed to workforce diversity. Women, persons with disabilities, Roma and other ethnic or religious minorities, persons living with HIV, as well as refugees and other non-citizens legally entitled to work in the Republic of Moldova, are particularly encouraged to apply.

N. Documents to Be Included When Submitting the Proposals

Interested individual consultants must submit the following documents/ information to demonstrate their qualifications:

- Signed and filled-in Offeror's letter to UNDP confirming interest and availability for the individual contractor (IC) assignment, incorporating financial proposal in Annex 2 (in USD, specifying a total requested amount per working day, including all related costs, e.g., fees, phone calls etc.). Annex 2 to the Offeror's letter, incorporating the Financial Proposal, shall be filled in mandatorily and includes the detailed breakdown of costs supporting the all-inclusive financial proposal.
- Proposal (Motivation Letter): explaining why they are the most suitable for the work including previous experience in similar Projects (please provide brief information on each of the above qualifications, item by item, including information, links/copies of documents for similar comprehensive studies);
- CV and at least 3 references.

Important notice: The applicants who have the statute of Government Official / Public Servant prior to appointment will be asked to submit the following documentation:

- a no-objection letter in respect of the applicant received from the Government, and;
- the applicant is certified in writing by the Government to be on official leave without pay for the entire duration of the Individual Contract.

O. Evaluation

Initially, individual consultants will be short-listed based on the following minimum qualification criteria:

- Citizen of the Republic of Moldova

- Advanced Technical Degree in engineering, geography, meteorology, information systems or another relevant area.
- At least 3 years of progressing work experience IT, environment, meteorology that is related to the monitoring-related activities.

The short-listed individual consultants will be further evaluated based on the following methodology:

Cumulative analysis

The award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as:

- responsive/ compliant/ acceptable, and
- having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

* Technical Criteria weight – 60% (300 pts);

* Financial Criteria weight – 40% (200 pts).

Only candidates obtaining a minimum of 210 points would be considered for the Financial Evaluation.

Criteria	Scoring	Maximum Points Obtainable
<u>Technical</u>		
Advanced Technical Degree in engineering, geography, meteorology, information systems or another relevant area.	<i>Bachelor – 5 pts; Master's –10 pts; PhD – 20 pts.</i>	20
At least 3 years of progressing work experience IT, environment, meteorology that is related to the monitoring-related activities	<i>3 years – 20 points, each additional years – 2 points up to max. 30 pts;</i>	30
At least 2 years of work experience with national-level environmental authorities	<i>2 years – 20 points, each additional year – 2 pts. Up to max. 30 pts;</i>	30
Previous experience of work with SHS will be an advantage.	<i>No – 0 pts, yes – 20 pts.</i>	20
<u>Interview</u> (demonstrated technical knowledge and experience; communication/ interpersonal skills; initiative; creativity/ resourcefulness). Only the first 3 applicants that have accumulated the highest technical score shall be invited to the interview.		
Demonstrated knowledge of the principles of agro-ecological monitoring	<i>Limited – 5 pts, fair – up to 15 pts., good – up to 25 pts, very good – up to 40 pts;</i>	200

Demonstrated technical knowledge on monitoring sensors, in compliance with WMO requirements.	<i>Limited – 5 pts, fair – up to 20 pts., good – up to 35 pts, very good – up to 50 pts;</i>	
Demonstrated experience in elaboration of technical specifications/terms of reference for procurement procedures	<i>2 years – 20 points, each additional year – 5 pts. Up to max – 50 pts;</i>	
Strong communication and leadership skills	<i>Up to 30 pts;</i>	
Fluency in Romanian is required, knowledge of English and Russian will be an asset.	<i>Romanian-10 pts; English – 5 pts; Russian – 5 pts, max. 20 pts.</i>	
Belonging to the group(s) under-represented in the UN Moldova and/or the area of assignment	<i>No – 0 pts, to one group – 5 pts, to two or more groups – 10 pts.</i>	
Maximum Total Technical Scoring		300

** Under-represented group in the area of assignment (law enforcement) are women. Under-represented groups in UN Moldova are persons with disabilities, LGBTI, ethnic and linguistic minorities, especially ethnic Gagauzians, Bulgarians, Roma, Jews, people of African descent, people living with HIV, religious minorities, especially Muslim women, refugees and other non-citizens.*

Financial	
Evaluation of submitted financial offers will be done based on the following formula: $S = F_{min} / F * 200$ S – score received on financial evaluation; Fmin – the lowest financial offer out of all the submitted offers qualified over the technical evaluation round; F – financial offer under consideration	200

Winning candidate

The winning candidate will be the candidate who has accumulated the highest aggregated score (technical scoring + financial scoring).