TERMS OF REFERENCE

Job title:	International Consultant to support the improvement of radar data processing procedures
Duty station:	Home-based with two missions to Moldova
Project reference:	„Hydro-infrastructure rehabilitation to mitigate vulnerability to climate-driven extreme events in the Republic of Moldova" Project
Contract type:	Individual Contract (IC)
Contract type:	50 W.D., June 2025 – June 2026

A. BACKGROUND

Climate change is projected to increase the occurrence of intense rainfall events in Moldova with potential consequences for damaging flooding, given the country's rolling topography and current land use patterns. The majority of Moldova's rural population lives in small towns located in these watersheds, which are often found in low-lying areas and other areas at risk of flooding as a result of heavy rains. On average, under climate change, rainfall will become (with 66% probability) more frequent, either in absolute terms or as a proportion of total precipitation, that is, less precipitation with a higher proportion of heavy rain events. Consequently, potentially damaging and life-threatening river floods are expected to intensify.

The task of hydrological and meteorological monitoring falls under the responsibility of the State Hydrometeorological Service (SHS), but its capacities are insufficient to assess local-level hazards and vulnerabilities with sufficient precision, and the current early warning system for heavy precipitation and flooding is weak. SHS monitoring stations are unevenly distributed, with the vast majority found on the two largest border rivers (Prut and Dniester), leaving the interior under-serviced. The network of stations cannot adequately detect fluvial and flash flood risk, and hazard maps are out of date. The state institutions - the State Hydrometeorological Service (SHS) and the National Administration "Apele Moldovei" (NAAM) - charged with hazard analysis and risk assessments currently lack the technical capacities to carry them out effectively, and they have no hydrological or hydraulic modelling capacities which is limiting the efficient flood forecasting.

Compounding vulnerability from the threat of flooding, local governance institutions have insufficient capacities for effective flood risk and water resources planning and management at the sub-basin level. Local governance institutions and community stakeholders lack the organizational and technical capacities to carry out participatory integrated water resource management and flood risk assessment and management. Under the provisions of Water Law No. 272 of 2011, some elements of integrated water resources management at local level have been delegated to sub-basin committees. While sub-basin committees have been established, they meet irregularly, have no long-term strategy for engaging local land users in analysis and planning, and their links with local water users' groups and other land use regulatory institutions are weak or non-existent. Water users' groups lack the support they need to ensure adequate capacities for appropriate maintenance of private and public hydro-infrastructure.

Against this background, the Flood Management project is proposing a set of measures aimed at strengthening the country's adaptation to climate-driven flood risk through a two-pronged approach. The first will build the essential national hydro-meteorological monitoring and early warning systems, including the institutional capacities to manage and operate them countrywide. The second one, will apply an integrated water resources management (IWRM) approach to 5 key watersheds that will produce knowledge and institutional capacities for rehabilitation of high-risk hydrotechnical infrastructure, as well as increased participation by local stakeholders in water governance.

With these measures the project will put in place knowledge, capacity, infrastructure, policy and regulatory frameworks to enable a long-term impact of country's enhanced capabilities to manage the run-off from extreme climate-driven rainfall events to prevent flooding that causes loss of life and property damage. The following are the project outcomes and outputs of the project:

Outcome 1: Increased capacities of the relevant national and local authorities to respond effectively to extreme water-related events

Output 1.1: Strengthened hydro-meteorological monitoring network for effective river basin management

Output 1.2: Flash-flood/flood forecasting and early warning system established and operational

Outcome 2: Enhanced security of the vulnerable rural population in key watersheds from potential failure of flood control infrastructure

Output 2.1. Methodology, protocol and standards for safe operation of hydro-technical infrastructure developed

Output 2.2: High risk dams identified in 5 pilot sites, conditions analyzed, and remedial measures identified with priority high risk dams rehabilitated

Outcome 3: Enhanced capacity of the local authorities and empowered community stakeholders to participate actively in governance of integrated water resources management for flood control

Output 3.1: Flood risk and water resources planning, and management instruments are available and put in use at the local level

The project will have several categories of target groups such as, firstly, the local population from the pilot areas who are directly exposed to the flood-related hazards, namely, those living in floodplain areas or having agricultural land and/or economic activities in these areas.

Another target group is the local public authorities from the selected pilot regions. As custodians of the hydro-technical infrastructure, they bear the responsibility to ensure proper operation and maintenance in order to mitigate the flood risks.

The next target group of the project is the central public authorities such as the Ministry of Environment with its subordinated institutions, that is, the NAAM and the SHS who will benefit from instruments and knowledge to better understand the flood-related risks, prevent, and prepare for these.

The project duration is from December 2023 through November 2027.

This assignment refers to Outcome 1, Output 1.2, specifically for the Activity 1.2.3, which includes the study of the radar capacities and options with the purpose of incorporating these into the Flash Flood Detection System, as detailed in the next section.

B. SCOPE OF WORK AND EXPECTED OUTPUTS

UNDP intends to contract an experienced International Consultant (*hereinafter "the Consultant"*) to offer support and consultancy for Outcome 1, Output 1.2, specifically for the Activity 1.2.3, which includes the study of the radar capacities and options with the purpose of incorporating these into the Flash Flood Detection System.

The existing C-band dual polarization radar in Moldova is located on the territory of the Chisinau International Airport and is under exploitation since 2013. The exploitation of the radar is performed based on the provisions of the Collaboration Agreement between SHS and the Moldavian Air Traffic Services Authority MoldATSA. The reduced budget allocations and level of skill in processing and integrating radar data into the forecasting system is affecting the efficient use of this resource. Also, there was minimal upgrade of the radar components in the last years, therefore a comprehensive analysis of the current state of the radar, software and data processing issues, as well as a targeted training for the use of these data both for forecasting and for integration into the Early Warning System for Flood Management would be highly beneficial for SHS as a main link in this system and its end users.

Under the guidance of the Project Manager and Component Officer, the Consultant is expected to perform the following tasks:

Task 1. Radar capacity assessment, including in the context of the Flash Flood Detection System

The consultant will perform, on site where relevant, an analysis of the radar software and hardware, radar documentation, institutional collaborations impacting the functioning of the radar, data processing procedures and current state of data integration into the SHS flood forecasting system. The consultant will also consider the activities planned in upgrading any radar components in any other relevant ongoing projects. For this part of the task, the Consultant will meet with specialists and technicians from, but not limited to, SHS and MoldATSA. Based on these data, the Consultant will perform a comprehensive analysis of the gaps and issues, and will provide a list of recommendations for software/hardware upgrades, improvement in data management and data flow integration, institutional collaboration, as relevant, as well as a short technical roadmap for the integration of radar data into the Flash Flood Detection System, including proposed data processing chains, compatibility requirements, and suggestions for harmonizing data formats.

Task 2. Provision of radar data processing and visualization procedures

Based on the results of the previous analysis, the Consultant will provide SHS with a list of procedures for radar data procession and visualization, considering the current state of the radar software and hardware, as well as recommendations for short-term improvements in data management.

Task 3. Training in radar data processing and application

The Consultant will organize, with the support of the project team, a 3-day training on radar data processing and application, built upon the result from Task 1 and Task 2. This training will include any relevant stakeholders and radar data users involved directly in the Early Warning System for Flood Management, such as and not limited to the SHS personnel, civil protection.

The work of the Consultant will be mostly home based, but will include 2 missions in Moldova, the first envisioned for summer 2025 (for gathering data for Task 1 and Task 2) and the second in spring 2026 (for Task 3).

The Consultant is expected to deliver the following outputs as per the below-identified timeline and anticipated workload:

Deliverable number	Deliverable description	Estimated number of Workdays	Tentative timeframe
1	Detailed Work Plan based on technical meetings with the Project team *Relevant Task:* Tasks 1-3	2 WD	by 15 Jun 2025
2	Report on a country visit to collect available documentation, including from discussions with any relevant stakeholders (as described in Task 1), for the purpose of conducting the radar capacity assessment and the needs for improving data processing and visualization procedures *Relevant Task:* Tasks 1, 2	6 WD	by 30 Sep 2025
3	Report on the radar capacity assessment, as a desk review based on the collected information during the first country visit, including a technical note with schematic flowchart or protocol outlines. *Relevant Task:* Task 1	18 WD	by 31 Dec 2025
4	Report on radar data processing and visualization procedures, based on the needs identified in the first country visit *Relevant Task:* Task 2	15 WD	by 28 Feb 2026
5	Report on a country visit to perform a training in radar data processing and application, carried out in-person at SHS *Relevant Task: Tasks 3*	6 WD	by 31 May 2026

6	Final activity report (including details on all stages passed, achieved results, conclusions, and recommendations for subsequent activities) – submitted *Relevant Task: Tasks 1-3*	3 WD	by 30 Jun 2026
		Total: 50 WD	

C. INSTITUTIONAL ARRANGEMENTS

The timeframe for the work of Consultant is planned for June 2025 – June 2026.

All communications and documentation related to the assignment will be in English.

The Consultant will work under the overall guidance and direct supervision of the UNDP Project Manager. For technical and administrative aspects, the assignment will be coordinated with the UNDP Project Analysts.

The UNDP Project will provide administrative and logistical support in the organization of the envisaged events, meetings and/ or consultations.

All deliverables shall be approved by the Project Manager/Flood Management Project and the Climate Change, Environment and Energy Analyst.

Travel

All envisaged travel costs related to the country visits will be arranged and covered by the project office. As per Deliverables D2 and D5, the expected number of missions to Chisinau, Moldova, is 2 (two), with the total number of mission days of up to 4 (four) days. The exact duration and period of the missions shall be coordinated with UNDP.

UNDP will not cover travel costs exceeding those of an economy class ticket. Should the Consultant wish to travel on a higher class, he/she should do so using their own resources.

In the case of unforeseeable travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and Individual Consultant, prior to travel.

D. 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).

E. CONFIDENTAILITY

Materials provided to the Consultants 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 contract.

F. QUALIFICATIONS AND SKILLS REQUIRED

Academic Qualifications:

- Master's degree or higher in meteorology, hydrology, physics or other relevant field

Experience and knowledge:

- At least 10 (ten) years of professional experience in working with radar data in an operational setting
- At least 2 (two) years of professional experience in international collaborative projects

Competencies:

- Proven experience of radar data processing and application in the forecasting system
- Previous professional experience in working with international organizations, including UN Agencies
- Previous experience in working with governmental institutions in the Republic of Moldova is an asset.
- Demonstrated interpersonal and diplomatic skills, as well as the ability to communicate effectively with all stakeholders and to present ideas clearly
- Excellent analytical and management skills

Personal qualities:

- Proven commitment to the core values of the United Nations, in particular, respecting differences of culture, gender, religion, ethnicity, nationality, language, age, HIV status, disability, and sexual orientation, or other status
- Responsibility, flexibility and punctuality, ability to meet deadlines and prioritize multiple tasks

The UNDP Moldova is committed to workforce diversity. Women and men, persons with different types of disabilities, LGBT, Roma and other ethnic, linguistic or religious minorities, persons living with HIV, are particularly encouraged to apply. ***Please specify in the CV, in case you belong to the group(s) under-represented in the UN Moldova and/or the area of assignment.***

G. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS

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

- CV, including information about experience in similar assignments and contact details for at least three referees;
- Brief description of why the individual considers him/herself as the most suitable for the assignment, focusing on experience in similar assignments, and brief methodology on how he/she will approach and conduct the work;

- Offeror's Letter confirming Interest and Availability with financial proposal (in USD, specifying the total lump sum amount). Financial proposal template prepared in compliance with the template in Annex 2.

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.

A retired government official is not considered in this case a government official, and as such, may be contracted.

H. EVALUATION

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

- Master's degree or higher in meteorology, hydrology, physics or other relevant field
- At least 10 (ten) years of professional experience in working with radar data in an operational setting
- At least 2 (two) years of professional experience in international collaborative projects

Cumulative analysis

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

a) responsive/ compliant/ acceptable, and

b) 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**
Technical		
Master's degree or higher in meteorology, hydrology, physics or other relevant field	*Master's degree – 10 pts, Ph.D.'s degree – 20 pts*	20

At least 10 (ten) years of professional experience in working with radar data in an operational setting	*10 years – 30 pts, each additional year of experience – 10 pts, up to a maximum of 50 pts*	50
At least 2 (two) years of professional experience in international collaborative projects	*2 years – 20 pts, each additional year of experience – 10 pts, up to a maximum of 40 pts*	40
Proven experience of radar data processing and application in the forecasting system	*5 years – 10 pts, each additional year of experience – 5 pts, up to a maximum of 20 pts*	20
Proven analytical and report-writing skills, including conducting gap analyses, and developing recommendation frameworks	*Each report – 5 pts, up to 10 pts*	10
Excellent interpersonal and communication skills, with a demonstrated ability to collaborate with public and private sector stakeholders	*Each collaboration – 5 pts, up to 15 pts*	15
Previous professional experience in working with international organizations, including UN Agencies	*Each collaboration – 5 pts, up to 10 pts*	10
Subtotal desk review scoring – 165 pts.		
Interview (demonstrated technical knowledge and experience; communication/ interpersonal skills; initiative; creativity/ resourcefulness). **Only the first 5 applicants that have accumulated the highest technical score shall be invited to the interview.**		
In-depth knowledge of radar functionality, both hard- and software, data and application of radar data	*Limited – up to 20 pts, good – up to 40 pts, excellent – up to 50 pts*	130
Strong understanding of interinstitutional needs for collaboration and the needs of a Flood Detection System	*Limited – up to 20 pts, good – up to 40 pts, excellent – up to 50 pts*	
Proven ability to work under pressure and meet tight deadlines	*Limited – up to 5 pts, good – up to 10 pts, excellent – up to 15 pts*	
Fluency in English and Romanian, Russian is an asset	*Each language - 5 pts, up to 15 pts*	
Belonging to the group(s) under-represented in the UN Moldova and/or the area of assignment*	*No – 0 pts, to one group – 2.5 pts, to two or more groups – 5 pts*	5
Subtotal interview scoring – 135 pts.		
Maximum Total Technical Scoring		300

**Under-represented group in the area of assignment 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	**Maximum Points Obtainable**
Evaluation of submitted financial offers will be done based on the following formula: **S = Fmin / 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).