

## TERMS OF REFERENCE

<b>Job Title:</b>	<b>National Consultant for the Development of a Costed Roadmap for Digitization, Optical Character Recognition Processing and Translation of Groundwater Archives</b>
<b>Duty station:</b>	Chişinău (home-based with meetings as required)
<b>Project:</b>	Supporting the Moldovan Authorities in the Sustainable Management of the Dniester River – Phase II (Dniester II)
<b>Contract type:</b>	Individual Contract (IC)
<b>Contract Duration:</b>	Up to 45 working days (tentatively May – August 2026)

### 1. BACKGROUND

Within the framework of the UNDP Project “Supporting the Moldovan Authorities in the Sustainable Management of the Dniester River – Phase II (Dniester II)”, efforts are being undertaken to strengthen the capacities of national authorities in integrated water resources management, including improving the management, preservation, digitization, and accessibility of groundwater-related information and archival materials.

Groundwater-related data and historical hydrogeological studies represent a critical source of baseline information for current water resources management and environmental planning. Although many of these studies were conducted several decades ago, the data they contain remain highly relevant for understanding long-term groundwater dynamics, identifying trends in aquifer conditions, supporting climate resilience assessments, and informing evidence-based decision-making processes. Ensuring the digitization and accessibility of these archival materials is therefore essential for maintaining institutional knowledge and enabling their effective use in present and future water management activities. Furthermore, the availability of consolidated, accessible groundwater information is increasingly important in the context of the Republic of Moldova’s European integration process, including alignment with EU water acquis requirements, evidence-based environmental planning, and strengthened environmental reporting capacities.

The Agency for Geology and Mineral Resources of the Republic of Moldova maintains an extensive archive of groundwater-related documentation, including hydrogeological reports, technical registers, and maps in various formats (A4–A0). These materials form part of the State Fund of Geological Information on the Subsoil, which represents a centralized repository of geological information in the Republic of Moldova and is managed by the Agency in accordance with Government Decision No. 392/2011 approving the Regulation on the State Fund of Information on the Subsoil. The Fund contains geological and hydrogeological reports, maps, catalogues and other technical materials resulting from geological exploration and monitoring activities, which constitute an important source of information for groundwater management, environmental planning and scientific research. A large portion of these materials exists exclusively in hard copy format and consists primarily of typewritten documents prepared in the Russian language prior to 2014, while more recent documents are available in Romanian and partially stored on electronic media. A preliminary catalogue in Excel format containing the list of reports from the State Fund provides indicative information on the number

and typology of hydrogeological reports potentially relevant for digitization. Information on geological reports stored in the State Fund is publicly accessible through the official website of the Agency for Geology and Mineral Resources (<https://geologie.gov.md/>). Preliminary inventory data indicate the existence of approximately 1,000 hydrogeological reports related to groundwater studies, with an estimated average size of 200–350 pages per archival unit, suggesting a preliminary digitization volume in the range of approximately 200,000 to 350,000 pages, excluding maps and large-format materials.

Given the volume of materials and the technical complexity of digitization, including Optical Character Recognition (OCR) processing and translation workflows, a phased and technically sound implementation approach is required. UNDP therefore intends to engage a National Consultant to develop a comprehensive costed Roadmap for Digitization, OCR Processing and Translation of Groundwater Archives, including technical analysis, comparative implementation scenarios, detailed indicative cost estimates, and operational recommendations to support procurement planning and implementation decision-making.

The primary beneficiary institutions of this assignment are the Ministry of Environment and the Agency for Geology and Mineral Resources of the Republic of Moldova, which maintain the groundwater-related archives and will be responsible for the future implementation of the digitization programme.

## **2. OBJECTIVE OF THE ASSIGNMENT**

The objective of this assignment is to develop a comprehensive technical, operational, and costed implementation roadmap to support beneficiary institutions in planning and implementing the digitization of groundwater archival materials, including OCR processing, translation workflows, metadata management, and long-term digital storage.

The roadmap will define and compare feasible implementation models for the digitization process, focusing on:

- contracting specialized service providers for the provision of digitization services;
- procurement of digitization equipment and establishment of the necessary operational and technical capacity within beneficiary institutions.

The assignment will result in a costed roadmap presenting indicative implementation timelines, phased implementation scenarios, detailed cost estimates, and recommendations for a cost-effective and sustainable implementation approach. The roadmap will provide a comparative technical, operational, and financial justification to support procurement planning and implementation decision-making by the beneficiary institutions.

In addition, the assignment will include the development of draft Terms of Reference and/or technical specifications for the procurement of digitization services or equipment, based on the implementation solution selected by the beneficiary institutions, in order to facilitate subsequent procurement processes.

## **3. SCOPE OF WORK**

The assignment is expected to result in a comprehensive decision-support and costed implementation roadmap enabling beneficiary institutions to plan, budget, procure, and implement a large-scale digitization programme for groundwater archival materials.

#### **Assessment and baseline analysis**

- Review and analyse existing inventories, catalogues, and Excel-based registers of archival materials made available by the beneficiary institutions;
- Analyse document typologies and formats (including large-format maps) based on data made available by the beneficiary institutions;
- Develop a methodologically sound and refined estimation of the overall digitization volume and scope, based on existing inventories and reasonable technical assumptions, without undertaking a full document-by-document inventory;
- Review institutional, technical, and regulatory frameworks relevant to archival digitization and digital data management.

#### **Technical and operational analysis**

- Analyse feasible implementation models for the digitization process, focusing on:
  - outsourcing digitization services to specialized service providers;
  - procurement of digitization equipment and establishment of an operational digitization workflow;
  - any combination of two approaches presented above.
- Define the end-to-end digitization workflow, including document preparation requirements, scanning, OCR processing, metadata creation, indexing, quality control procedures, translation workflows, and digital archiving processes;
- Define indicative technical specifications and performance requirements that may serve as a basis for future procurement of digitization services or equipment;
- Analyse OCR processing workflows for Russian-language typewritten documents and define recommended validation and quality assurance procedures;
- Assess translation workflows, including prioritization approaches, technology-assisted translation solutions, proofreading processes, and quality assurance mechanisms.

#### **Costing and roadmap development**

- Develop detailed indicative cost estimates for each implementation scenario, based on refined volume assumptions and benchmark unit costs, including digitization, OCR processing, translation, infrastructure, human resources, and operational costs, including unit cost assumptions (per page, per document format, per OCR-processed page, per translation unit), as well as recurrent operational costs such as licensing, maintenance, hosting, and quality control requirements;

- Conduct a comparative feasibility and cost-effectiveness analysis of the implementation scenarios and provide recommendations on the most sustainable and cost-efficient solution;
- Develop a phased and costed implementation roadmap, including pilot, scaling, and operational phases, with indicative timelines, resource requirements, and procurement considerations;
- Identify operational, technical, and financial risks associated with each implementation scenario and propose mitigation measures;
- Based on the implementation scenario selected by beneficiary institutions, develop draft Terms of Reference and/or detailed technical specifications to support the procurement of digitization services or equipment, including technical requirements, scope of services, performance standards, and quality assurance provisions.

#### **Consultation and finalization**

- Prepare a stakeholder presentation summarizing findings, assumptions, cost estimates, and recommendations;
- Present findings to relevant institutions and stakeholders;
- Finalize the roadmap and draft procurement documentation incorporating stakeholder feedback and agreed implementation recommendations.

#### **4. DELIVERABLES**

<b>Deliverable</b>	<b>Description</b>	<b>Tentative Timeline</b>	<b>Estimated level of effort</b>
Deliverable 1- Baseline Assessment and Feasibility Report	Assessment and feasibility report including analysis of available inventories, document typologies, digitization, OCR and translation implementation scenarios, refined volume assumptions, and preliminary indicative cost estimates.	Week 6 after the contract signature	15 working days
Deliverable 2 - Final Costed Roadmap for Digitization, OCR Processing and Translation of Groundwater Archives	Final costed roadmap including comparative implementation scenarios, phased implementation approach, finalized indicative cost estimates, implementation recommendations, procurement considerations, and delivery of a stakeholder presentation summarizing the roadmap findings.	Week 12 after the contract signature	20 working days
Deliverable 3 – Draft Terms of Reference / Technical Specifications for Procurement of Digitization Services or Equipment	Draft Terms of Reference and/or detailed technical specifications developed based on the implementation solution selected by the beneficiary institutions, including technical requirements, scope of services, performance standards, and quality assurance provisions	Week 16 after the contract signature	10 working days

## **5. INSTITUTIONAL ARRANGEMENTS**

The Consultant will work under the direct supervision of the UNDP Dniester II Project Manager, in close cooperation with Ministry of Environment and the Agency for Geology and Mineral Resources as beneficiary institutions and the other institutions if relevant.

UNDP will facilitate coordination and communication with the beneficiary institutions and will support the organization of the stakeholder presentation meeting, including venue arrangements and related organizational expenses, as applicable. The Consultant will be responsible for the preparation and delivery of presentation materials and for engaging with stakeholders during consultations, in coordination with UNDP.

The Consultant shall follow the agreed work schedule and be accountable for the timely delivery of high-quality outputs to the UNDP Dniester II Project Manager, who will review and approve the deliverables in consultation with the beneficiary institutions.

All documentation related to deliverables shall be provided in English in one (1) electronic copy, using standard software formats (Microsoft Word, Excel, PowerPoint, etc.).

Prior to the submission of final deliverables, the Consultant shall present and discuss draft documents with UNDP and the relevant stakeholders to ensure that the final products reflect consolidated comments and agreed recommendations.

All materials provided to the Consultant and all information generated under this consultancy shall be treated as confidential, both during and after the consultancy. Violation of confidentiality requirements may result in immediate termination of the contract.

## **6. FINANCIAL ARRANGEMENTS**

The Financial Proposal shall indicate a total lump-sum amount for the assignment and specify the proposed payment schedule linked to clearly defined and measurable deliverables.

Payments under the Individual Contract will be output-based, i.e., contingent upon the satisfactory delivery and approval of the deliverables specified in these Terms of Reference.

The financial proposal shall be expressed as a lump-sum amount, which shall be all-inclusive and fixed, covering all costs required for the completion of the assignment, including professional fees, communications, local transportation, consumables, and any other costs necessary to deliver the services described in these Terms of Reference.

## **7. QUALIFICATIONS AND SKILLS REQUIRED**

### **Academic Qualifications**

- Advanced university degree (Master's degree or equivalent) in Information Technology, Information Management, Archival Science, Engineering, Economics, Business Administration or other relevant fields.

### **Professional Experience**

- Minimum 7 years of progressively responsible professional experience in digitization projects, ICT systems, archival digital transformation, or related areas;
- Proven experience in the development of feasibility studies, costed implementation roadmaps, or digital transformation concepts;
- Demonstrated experience in cost estimation, financial modelling, and feasibility assessment for ICT, digitization, or data management initiatives;
- Proven experience in analysing alternative implementation scenarios and providing evidence-based technical and operational recommendations;
- Experience in preparing technical specifications or Terms of Reference for ICT or digitization procurement will be considered a strong asset;
- Experience working within UNDP, World Bank, EU-funded projects, or other international organizations will be considered an asset.

### **Competencies**

- Strong knowledge of document digitization technologies, OCR processing, metadata standards, and archival information management systems;
- Strong analytical and structured problem-solving skills, particularly in feasibility and cost-effectiveness analysis;
- Ability to translate technical analysis into practical procurement-ready documentation;
- Strong communication and stakeholder coordination skills;
- Ability to deliver high-quality outputs within agreed timelines;
- Excellent command of Romanian and English; working knowledge of Russian is considered an advantage.

The United Nations in 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.

## **8. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS**

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

- Curriculum Vitae (CV), including information about past experience in similar assignments and contact details of at least three referees;
- Brief technical proposal describing the proposed methodology, approach to the assignment, and workplan;

- Offeror's letter to UNDP confirming interest and availability for the individual contractor (IC) assignment, incorporating financial proposal in Annex 2.

Upload the signed version of the filled in Offeror's letter to UNDP confirming interest and availability for the individual contractor (IC) assignment. 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. Please ensure there are no mathematical errors and that amounts from Offeror's Letter to UNDP Confirming Interest and Availability match with your offer in the system.

**Important notice:** Applicants who hold the status of Government Official / Public Servant prior to appointment will be required to submit the following documentation:

- a no-objection letter issued by the respective Government authority;
- written certification confirming that the applicant will 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.

## **9. EVALUATION**

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

- Advanced university degree (Master's or equivalent) in Information Technology, Information Management, Archival Science, Engineering, Economics, Business Administration or related fields;
- Minimum 7 years of relevant professional experience in digitization projects, ICT systems, archival digital transformation, or related areas;
- Citizenship of the Republic of Moldova.

The short-listed individual consultant 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:

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 points)
- Financial Criteria weight – 40% (200 points)

Only candidates obtaining a minimum of 210 points (70%) in the technical evaluation will be considered for the Financial Evaluation.

### **Technical Evaluation – Maximum 300 Points**

### A. Desk Review – 150 Points

Criteria	Scoring	Maximum Points
Advanced university degree (Master's or Ph.D.) in Information Technology, Information Management, Archival Science, Engineering, Economics, Business Administration or related fields	Master's – 10 pts; Ph.D. – 20 pts	20
Minimum 7 years of relevant professional experience in digitization projects, ICT systems, archival digital transformation, or related areas;	7 years – 30 pts; each additional year – 5 pts, up to 50 pts	50
Proven experience in development of feasibility studies, costed roadmaps, or digital transformation concepts	each assignment – 10 pts, up to 40 pts	40
Demonstrated experience in cost estimation, financial modelling, and comparative feasibility analysis for ICT/digitization projects	each assignment – 10 pts, up to 40 pts	40
<b>Subtotal Desk Review – 150 Points</b>		

### B. Interview – 150 Points

Only the first 5 applicants that have accumulated the highest technical score shall be invited to the interview.

Criteria	Scoring	Maximum Points
Demonstrated understanding of end-to-end digitization workflows (document preparation, scanning, OCR, metadata, QA, digital storage), including preparation of technical specifications or Terms of Reference for digitization / ICT procurement	Limited – up to 30 pts; Good – up to 50 pts; Excellent – up to 60 pts	60
Understanding of cost estimation methodologies and large-scale implementation planning	Limited – up to 20 pts; Good – up to 30 pts; Excellent – up to 40 pts	40
Analytical thinking and ability to structure comparative implementation scenarios	Limited – up to 15 pts; Good – up to 25 pts; Excellent – up to 30 pts	30
Communication skills and ability to present complex technical concepts clearly in Romanian and English	Limited – up to 5 pts; Good – up to 10 pts; Excellent – up to 20 pts	20
<b>Subtotal Interview – 150 Points</b>		

### Financial Evaluation – Maximum 200 Points

Criteria	Maximum Points
Evaluation of submitted financial offers will be done based on the following formula: $S = (F_{min} / F) * 200$ S – score received on financial evaluation F <sub>min</sub> – 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 award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as responsive, compliant, and acceptable, and who has received the highest aggregated score based on the weighted technical and financial evaluation criteria.