Funded by the European Union

EU4Environment
Water and Data in Eastern Partner Countries

EU4Environment – Water Resources and Environmental Data

TERMS OF REFERENCE FOR LOCAL CONTRACTOR

SUPPORT FOR DEVELOPMENT OF ENVIRONMENTAL APPLICATIONS/DATABASES AND OPEN DATA

1. Financing
European Union (ENI/2021/424-550)
Co-financing by Austria (Austrian Development Agency) and France (Artois Picardie Water Agency)

2. Procedure
Simplified tender procedure according to EU PRAG

3. Contracting Authority
International Office for Water (OiEau)-France

4. Nature of contract
Service contract

5. Time period of implementation
Indicative timeframe 10 April 2024 - 31 July 2024

6. Contract amount
Max. amount: 30 000 EUR

7. Background and Objectives

The Programme "EU4Environment – Water Resources and Environmental Data" (hereinafter - the Programme) aims to operationalise several key mechanisms to preserve natural resources, enabling countries' green growth in line with the European Green Deal and a post-COVID-19 green recovery. This will contribute towards longer-term environmental, climatic, and socio-economic resilience, and improved human health and wellbeing, as well as the achievement of the Sustainable Development Goals (SDGs).

The Programme's specific objectives are:

- Specific Objective 1 "Water resources management": Water policies and practices support more sustainable use of freshwater resources and help reduce the adverse impacts of human activities on water quality and ecosystems.
- Specific Objective 2 "Environmental statistics and open data": The use of sound environmental statistics by the partner countries is extended and improved, and better availability of policy-relevant data to decision-makers and citizens is ensured.

The Programme, primarily financed by the European Union and co-financed by Austria and France, is implemented by three Member State agencies: Umweltbundesamt GmbH (also called "UBA" or "Environment Agency Austria"), Austrian Development Agency (ADA) and International Office for Water (OiEau, France) as well as two international organisations (OECD and UNECE). These 5 organisations are the Implementing Partners.

8. Scope of work and deliverables

8.1 Scope of work

Actions described in these Terms of Reference will contribute to the implementation of the Result 2, activity 2.4 of the project Eu4Env. More specifically, these actions will aim to respond to action 2.4 *Open data and citizens' participation in data collection and analysis are further operationalised.*

The aim is to develop and update two national databases/applications that currently manage surface water quality data and waste-related data. The proposed specifications contain elements to promote the export and sharing of data with other users in particular via APIs.

The application that manages data on waste is called **Waste Management Information System (WasteMIS)**.

The application that stores and manages surface water quality data is the **Water Quality Monitoring Database**.

The update of these databases/applications such as proposed in this contract, has a number of objectives:
- To update these IT platforms
- To offer new functionalities to the administrators of these applications
- Promote the sharing and opening up of data from these applications.

The specifications for the IT developments to be carried out can be found below:

8.2 Deliverables

Specifications for Waste Management Information System update

1. Introduction:
The purpose of this chapter is to outline the technical specifications and functional requirements for the procurement of information system development services focusing on the design and implementation of additional modules for the Waste Management Information System (WasteMIS) to effectively manage and report aggregated data on waste production, collection, and recycling.

2. Project Overview:
The project involves the development of a comprehensive WasteMIS, including the creation of a database for aggregated waste data storage, integration with existing systems, and the implementation of various modules and features for efficient waste management.

3. Scope of Work:
The selected vendor is expected to perform the following tasks:

3.1. Database Design and Implementation:
Design and implement a robust Postgres database allowing to manage all necessary data on waste production, collection, and recycling.

3.2. System Integration:
Ensure integration of all the data available in the existing MS Excel files.
Interconnect the Waste Management Information System (WasteMIS) with the newly created database.
Develop a new module within WasteMIS to allow the Environmental Agency to upload reports directly to the database.

3.3. RESTful API Development:
Develop a RESTful API to provide aggregated waste data to external information systems, registries, and databases via the Interoperability Governmental Platform MConnect.
These API should allow that the public can download and reuse all public data imported the new Postgres database. If some data cannot be considered as public, others API with authentication procedure should be considered, in order to give access to this data to partners.

3.4. WasteMIS Template Adjustments:
Modify WasteMIS electronic reporting templates to include additional columns such as "waste stocks at the beginning of the year" and an auto-calculated column for "stocks at the end of the year" for each waste code.

3.5. Analytical Dashboards Module:
Develop a new module on the public WasteMIS portal for Analytical Dashboards.
Configure panels for Top waste producers, collectors, and recyclers.
Implement dynamic reports with multiple data filters and the ability to load data on-demand via AJAX requests.

3.6. Reusable Widgets and Data Visualization:
Implement reusable widgets (DateRangePicker, Select, MultiSelect) for public users to input parameters into reports.
Utilize row grouping for better data visualization, supporting unlimited levels of grouping.

3.7. Data Summarization Tool:
Implement a data summarization tool (Pivot table) for processing, summarizing, sorting, reorganizing, grouping, counting, totaling, or averaging data on waste management.
Allow public users to transform columns into rows, rows into columns, and group by any data field.

3.8. Exporting Features:
Implement the feature for exporting reports to PDF, MS Excel, CSV, and common image formats (JPG, PNG, BMP).

3.9. Caching Mechanism:
Implement caching features to accelerate the response time of report generation results.

Specifications for Water quality monitoring database update

1. Introduction:
The purpose of this chapter is to outline the technical specifications and functional requirements for the procurement of information tools development services. The focus is on updating the current database with the development of additional modules and improving its operation, to facilitate the effective assessment of the quality of monitored water bodies.

2. Project Overview:
The project involves the development of an effective tool, including the creation of a database for the storage of data on chemical and biological parameters of surface water quality, the improvement and development of various modules and features to facilitate the assessment of the quality of monitored water bodies.

3. Scope of Work:
The selected vendor is expected to perform the following tasks:

3.1 To update the current database as needed using an excel template to.
3.2. To adapt the existing access database to the latest version of MS Office and Windows. Purchase for this licensed MS Office and Windows antivirus.
3.3. Leave the selection of points by basins and add a grouping of sampling points by sub-basins to which they belong.
3.4. Add headings Bottom sediments, data are used for reporting within TNMN, set up automatic data entry using an excel template.
3.5. Classify information by parameters; by matrices/indicators:
3.6. Add additional modules as Groundwater, Wastewater, and analyzed parameters.
3.7. Indicate the name of the parameters depending on their name in the relevant regulatory documents.
3.8.DB functions: - quality classes; -percentile; - minimum/maximum/average values; -seasonal variations.
3.9. Possibility to record comments to the selection point.
3.10. Creation of a "card" for each parameter indicating the method of analysis / regulatory document / detection limits (several if they changed), etc.
3.11. For rigidity, add the option of automatic calculation in units of measure - German degrees.
3.12. Set the number of digits after the decimal point for each parameter when exporting data.
3.13. Set automatic control of the entered data, for example: elimination of gross errors, the value of biochemical oxygen demand should not exceed chemical oxygen demand; the value of total phosphorus should not exceed the value of orthophosphates, etc.
3.14. Automatic replacement of the current detection limits for each parameter when updating the database.
3.15. Database access records (demonstration of who, when and what changed in the database).
3.16. To update the access document for calculating the hydrobiological parameters of macro zoobenthos, zooplankton, as well as supplement them with calculations for other hydrobiological parameters (phytoplankton, Phyto benthos, chlorophyll a, macrophytes) by creating a single access document for calculating hydrobiological parameters. Integration of the data compartment on hydrobiological quality parameters in the complete database.

3.17. Development of APIs to provide access to data and promote data interoperability. The following API will have to be developed and made available:
- Public API giving access to characteristics of the monitoring sampling points with at minimum: ID code, name of the point, ID code/name of the water body controlled, X, Y of the point
- Public API giving access to results of classification index of the analysis done at each point
- API with authentication procedure, for giving access to partners to all raw data of the results of the analysis of water quality ate each monitoring point

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Note: The Terms of Reference may be subject to further refinement after initial discussions with prospective vendors.

IT development will be carried out in close collaboration with the people responsible for these applications.

Information System	Deliverables
Waste Management Information System	Fully functional Waste Management Information System with integrated modules. Comprehensive user documentation for system maintenance and operation. Training materials and sessions for end-users and system administrators.
Water quality monitoring database	Fully functional Water quality monitoring database with integrated modules. Training materials and sessions for end-users and system administrators.

9. Implementation modalities

The project timeline should be detailed in the proposal, including milestones and delivery dates for each phase of development.

As there are two separate information systems, two timelines will have to be proposed. These IT developments will have to be carried out in parallel and completed by the end of July 2024.

9.4 Attributes required

Works shall be implemented by a pool of experts, independent local company or NGO, university, research institution, etc. that are not the project beneficiaries. The study will be closely coordinated, assisted and monitored by the project team, consisting mainly of the thematic experts (surface and groundwater monitoring, data management, stakeholders' involvement). Close relationships will be formed and maintained with the beneficiary who will own the product.

The contractor will have to designate competent specialist(s) for each part of the assignment as well as a coordinator who will be responsible for managing these specialists, harmonising the document, and regularly informing the project team.

10. Contact details

The responsible persons at national level:

Silvia Nelipovschi, Head of the Environmental Quality Monitoring Department, EAM s_nelipovschi@am.gov.md

The EU4Env project representative for Moldova: Andrei Ursache, andrei.ursache@ada.gv.at

The EU4Env Information system expert
Paul HAENER
International Office for Water
p.haener@oieau.fr

11. Governance, EU visibility and communication

11.1 Role of the Implementing Partners

The International Office for Water (OiEau, France) is the Contracting Authority and will manage administratively and technically the current Contract. OiEau is the main contact for the Contractor for any issues. Experts from OiEau will support the Contractor all along the assignment. OiEau will transmit all valuable data incl. recommendations for EU communication and visibility.

Umweltbundesamt GmbH (UBA, Austria) will give a technical support thanks to its high-skilled experts, especially in monitoring, ecological status classification systems, groundwater, etc.

The Programme Representative for Moldova represents “EU4Environment – Water Resources and Environmental Data” in the country. This high-skilled person will facilitate the work process of the Contractor.

11.2 Role of Beneficiaries

The Beneficiaries (MoE, AAM) have designated representatives to follow the assignment. They will be involved into and informed about the progress of work and results, difficulties, etc. during the work. The beneficiaries will approve the results of this assignment.

11.3 EU communication and visibility

All deliverables, including in draft form, and all events and communication products must comply with EU visibility rules. The official guidelines can be accessed here: https://international-partnerships.ec.europa.eu/system/files/2022-07/Communicating%20and%20raising%20EU%20visibility%20-%20Guidance%20for%20external%20actions%20-%20July%202022_0.pdf

12. Participation to the tender

Interested parties (individual and legal persons) are invited to inquire the full tender dossier containing instructions and further information about the tender procedure from Ms Ilke CICEKOGLU (email address: i.cicekoglu@oieau.fr), Project Assistant, International Office for Water (OiEau) and Mr Paul Haener (email address: p.haener@oieau.fr Thematic Leader, International Office for Water (OiEau).

Deadline for submission of the technical and financial offer via post service is **5 April 2024, 18:00 CET**.