

TERMS OF REFERENCE FOR LOCAL CONTRACTOR
WATER SANITATION AND SUPPLY MASTER PLAN FOR THE NIRNOVA BASIN

2 July 2019

Terms of Reference

1. Financing

European Union (ENI/2016/372-403)

2. Procedure

Single tender procedure according to EU PRAG

3. Contracting Authority

International Office for Water (IOW)

4. Nature of contract

Service contract

5. Time period of implementation

12 months after the signature of the contract. Indicative timeframe August 2019 – July 2020

6. Contract amount

Max. amount: 20 000 EUR

7. Background and Objectives

The EUWI+ East project addresses existing challenges in both development and implementation of efficient management of water resources. It specifically supports the Eastern Partnership¹ countries to move towards the approximation to EU acquis in the field of water management. It focuses on trans-boundary river basin management as identified by the EU Water Framework Directive (WFD).

In Moldova, the major challenge for the water and sanitation sector is the lack of strategic planning for infrastructure development and service delivery. Either in rural or urban area, due to the lack of valid planning frameworks, investments in these services are currently being made by focusing on specific sites with little integration of the surrounding context or framework. There is no long-term planning, and this often leads to unsustainable or incomplete investments

Within the EUWI+ East project framework, the Prut basin management plan was carried out. To define a priority investment sector plan in line with it, the Regional Councils of Nisporeni and Hincesti and all the municipalities present in the basin need to have a global vision of the issue of access to drinking water and sanitation in the area.

Therefore, a master plan for drinking water and sanitation has to be realized. This plan should present a technical and sanitary overview of the issue of drinking water supply and wastewater management in the area concerned. It has to make realistic proposals to improve the drinking water access, the treatment of wastewater and the preservation of the resource. It will constitute a decision support tool for the implementation of operational technical solutions.

At the same time, the methodology adopted for the implementation of this master plan is intended to be participatory. This approach involves the mobilization of the local authorities of the Nirnova basin in a consultation framework for the drinking water and sanitation problem and the awareness of the inhabitants. The outcome document will include a list of priority actions that will be the result of a common and unanimous agreement.

8. Scope of work and deliverables

The main objective of this assignment is to carry out a study on the definition of a prioritized and quantified program of actions and investments for a sustainable upgrade of the sanitation and drinking water supply of municipalities on the studied perimeter.

The territory mainly concerned is the Nirnova watershed present within the administrative boundaries of the Nisporeni and Hincesti Raions. The basin spreads over 358km². The assessment of the consulting company includes all villages in the area; this includes 30 villages divided into 9 municipalities in the Nisporeni raion and 9 in Hincesti Raion. The total number of inhabitants is 43858.

The municipalities are the following:

¹ The Eastern Partnership (EaP) is a policy initiative launched at the Prague Summit in May 2009. It aims to deepen and strengthen relations between the European Union and its six Eastern neighbours: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

Municipalities of Nirnova basin

Raion of Nisporeni	Raion of Hincesti
Balanesti	Miresti
Vinatori	Cateleni
Ciutesti	Bujor
Seliste	Nemteni
Siscani	Obileni
Marinici	Ivanovca
Calimanesti	Onesti
Nisporeni	Cotul Morii
Varzaresti	Leuseni

The consultant will begin its services on the basis of existing documents in the territory, provided by the partners. It will be his duty to identify extra sources of information to complement these data in connection with the municipalities and raion authorities. The SWE team will provide, among other things, the technical and institutional diagnostics already carried out on the basin in 2017 as well as the numerous documents in its possession in order to support the consultant in the information collection necessary for the writing of the study.

The deliverables and main outputs will include for the 18 municipalities:

- A situation analysis regarding drinking water supply
- Zoning of the priority areas to be covered by collective drinking water supply solutions
- A situation analysis regarding water sanitation and waste water treatment
- A drinking water supply and Sanitation strategy at Nirnova basin scale
- A proposition of contract of delegation to manage and develop the WSS services

These main outputs are described in chapter 8.1.

Each chapter will be updated regularly throughout the duration of the contract.

Along the development of these chapters, a metadata catalogue will be established to describe the data set used and their accessibility.

The assignment will be rhythmized by meetings with different publics (expert groups for technical exchanges and trainings, basin council for active involvement, stakeholders' consultation).

Feedback received during those meetings will be considered to review the reports, and tracks of those contributions will be annexed to the produced deliverables. The contractor will have to participate to (but not organise) most of the meetings to present and take into account opinions and views expressed.

The consultant will make sure the following are taken into account in his methodologies:

- European directives related to water (notably Drinking water, UWWD and WFD)
- "Strategy for Water Supply and Sanitation for 2014-2028" of Moldova adopted in 2014 aimed at improving institutional capacities in the water supply and sanitation sector, including the regionalization of services,

- The "Environmental Strategy for 2014-2023" adopted in 2014 which contains specific objectives for the implementation of water resources management by watershed,
- The "Guide for the preparation of water supply and sanitation plans" prepared by the Swiss project ApaSan,
- The Danube-Prut and Black Sea River Basin Management Plan being developed in line with the WFD in parallel during the study,
- Other projects developing master plans for water and sanitation in other Raions, such as the "General Plan for Water Supply and Sanitation at Ialoveni Raion 2014-2039" drafted in 2015.

8.1 Content of the main deliverables

The characteristics of these deliverables are presented below. It gives idea of the minimum information required for each section (subject to data and information availability).

a. Situation analysis regarding drinking water supply

- **Analyse of the situation**

Including an updating of SWE diagnosis

Can be used as base for this work the technical diagnosis of the Nirnova basin and the annexes associated done previously. This document has been drawn up in 22/01/2018 and contains legislative information about water and sanitation access in Moldova as the national policy and the stakeholders. It draws up the inventory of infrastructure, the water resources and needs, the water and sanitation services for each village in the Nirnova basin. The updating and improvement proposed by the consultant has to be focus on this inventory, and include the data from each village in the document annexes to the diagnosis.

Complementary research to be provided

- Analyse all the existing water resources (underground sources and borolls, superficial water) and information on their quality,
- Vulnerability of the water resources due to pollution; associate preventive measures,
- Low water flow history,
- Establish a zero state of the health situation of the basin (water quality, connection rate, rate of waterborne diseases, etc.),
- Analyse the quality of sources of drinking water and in case of pollution, diagnose the origin and nature of this pollution, (SWE project in partnership with the hydrogeological office will provide recent analyses water quality for 15 sources of the basin),
- Identify and evaluate all existing structures and networks for the collection (autonomous, semi-collective and collective) transport, and treatment of wastewater basin (description and location of networks, treatment plants, autonomous structures or semi-collective). When this is the case, diagnose their malfunction and formulate proposals to put back into service certain works or improve their functioning (it will be necessary to integrate these proposals and position them in the list of priority actions),

- Identify the staff in charge of the maintenance of networks and works, and their profile (training, status, level of knowledge, etc.),
 - Evaluate the quality of the service rendered (rate of service, network performance, regularity of supply in number of hours per day, etc.)
 - Diagnose capacity building needs in the field of drinking water and sanitation (training of municipal officials in charge of network maintenance, training of elected officials in charge of the problem, etc).
- **Identification of most cost effective and environmentally friendly water resources to be used for drinking water production**

In each village, two drinking water sources should be found.

Identify the environmental characteristic of the sources (the localisation and the distance from the village, the gradient from the source to the village, the flowrate, the quality, the protection measures in place).

Identify and evaluate all existing structures and networks for the collection (autonomous, semi-collective and collective) transport, and treatment of wastewater basin (description and location of networks, treatment plants, autonomous structures or semi-collective). When this is the case, diagnose their malfunction and formulate proposals to put back into service certain works or improve their functioning (it will be necessary to integrate these proposals and position them in the list of priority actions).

For priority actions up to 2021 regarding drinking water supply, a feasibility study should be done based on the actual state of already existing distribution networks in order to describe with more details the work necessary for their maintenance/renovation/improvement/light extension. This feasibility study should be sufficiently detailed including a cost estimate in order to research funding solutions. The presentation of the result should include an indication of the unitary cost for the drinking water supply of 1 inhabitant based on the average consumption in the basin.

- **Characterization of the needs integrating the population evolution and seasonal variation**

Identify and present residents' drinking water usages (consumption per person, estimated level of discharge in sewage networks, distribution of water consumption between individual uses, industrial uses or agricultural uses). Evolution of the water consumption during the year and correlation with the water level evolution.

Identify and present the uses by potential industrialists, small or large producers, farmers and the consequences of their practices on the quality of the resource (pesticide use, presence of heavy metals in waste, etc.).

Determine projections in near future, this should include:

- Socio-economic projections (demographic forecasts, etc.),
- Projection of water demand (domestic and non-domestic water demand),
- Prospective analysis of adequacy needs/resources,
- The forecasts collected by the consultancy company should be developed on the basis of the data collected for the existing situation and the assumptions of the consultancy firm for a planning horizon of 5 years
- Projection of the impact of climate change on the water resource (for example impact on the resource if the lowest rainfall recorded in the last 30 last years occurs 5 years in a row).

- **Social demand for collective drinking water supply**

A social analysis must be done to know the desire and the acceptability of the population for collective drinking water supply solution.

- **Action program costing for 3 periods (up to 2021, 2022-2027 and 2028-2033)**

Measures to improve the accessibility of drinking water will include the previous results in order to determine best solutions per locality.

These measures could be sorted into 5 categories: rules, governance, awareness, knowledge improvement, and works on the ground. They will be described based on a catalogue of measure (proposal in annexe 5) adapted for Moldova, with a view of detailing content, objectives, localisation, relation to the indicators to feed the dash-board, costs, plans concerned, project owners, schedule, etc.

Each cost will be distributed according to the following three periods: up to 2021, 2022-2027 and 2028-2033.

The consultancy company will prepare and present in its technical proposal an estimated investment budget and operating costs budget taking into account the activities mentioned in these terms of reference. An economic analysis will assess the impact of the project on the price of water.

Measures will be presented at the best scale regarding their implementation. This scale will be adapted to each measure.

- **Affordability Study**

In order to evaluate the economic situation, the consultant will provide affordability study, which will help estimating the theoretical water price for investment, operation and maintenance per inhabitant.

The consultant will have to consider the possibility of implementing a social tariff according to the economic means of the population and consider the willingness of the inhabitants to pay such price.

- **Feasibility study**

A feasibility study has to be done for the solutions: individual, semi collective or/and collective. It analyses the environmental, social and economic feasibility according to all the previous parts.

b. Zoning of the priority areas to be covered by collective drinking water supply solutions

The options analysis should in particular determine whether centralized or decentralized options should be prioritized, and which localities should be grouped in a collective or non-collective zoning. Location and protected areas for drinking water sources must appear.

Highlighting centralized or decentralized options to be prioritized and showing the 3 periods time implementation of each options (up to 2021, 2022-2027 and 2028-2033).

This zoning dedicated to drinking water allows to highlight collective sanitation systems that should be implemented in the area with collective drinking water system. The map will be completed by a detail zoning of the areas where collective water sanitation and treatment or individual treatment will apply.

c. Situation analysis regarding water sanitation and waste water treatment

○ Analyse of the situation

Update SWE diagnosis of the situation.

Consider the existing infrastructures and inform on the recent implementations on the territory. Analyze the documentation: the regulation in Moldova, the diagnoses made by SWE, the feasibility studies, the documents of reception, the reports and analyzes of purification efficiency.

Complementary researches

Identify and evaluate all existing structures and networks for the collection (autonomous, semi-collective and collective) transport, and treatment of wastewater basin (description and location of networks, treatment plants, autonomous structures or semi-collective). When this is the case, diagnose their malfunction and formulate proposals to put back into service certain works or improve their functioning (it will be necessary to integrate these proposals and position them in the list of priority actions),

○ Identify most cost effective and environmentally friendly water sanitation solutions

As refer to the zoning (b. Zoning of the priority area) for drinking water access, the collective sanitation systems should be implemented in priority in the area of collective drinking water system when individual sanitation solution associated will be usually foreseen when individual drinking water system is maintained. Nevertheless, collective drinking water can be associated to individual sanitation system when the habitat is dispersed for cost effective sanitation development planning.

Moreover, when zoning of water sanitation and treatment separate canalization network for will be privileged and solution to infiltrate as much as possible rainwater will be privileged.

Solution for waste water pollution treatment will be recommended in function of the sensitivity of the receiving media in order to respect the environmental objectives of the water bodies defined in the RBMP. In addition, it must also consider diffuse pollution, particularly that related to nitrogen and phosphorus. Cost effective and environmentally friendly solutions have to be chosen in priority as for example spreading toilet and reed filter.

At last but not least, sludge management solution must be clearly described with detailed proposal in close relation with option for use in agriculture identified with Local Authorities.

For every collective water sanitation solutions, a feasibility study of priority action up to 2021 should be done based on the actual state of already existing network in order to describe with more detail the work necessary for their maintenance/renovation/improvement/light extension. This feasibility study should be sufficiently detailed including a cost estimate in order to research funding solutions. The presentation of the result should include an indication of the unitary cost for the treatment of 1 equivalent inhabitant.

- **Soil analysis**

The installation of on-site sanitation requires a soil analysis. This analysis is a key factor in the choice of most adapted treatment options.

It aims to define the characteristics of the soil, the importance of the presence of water, but also the topography.

A general study relating to soils must be done for the zoning (some soils are not compatible with on-site disposal)

This soil analysis should have several elements:

- texture
- permeability
- depth of soil
- presence of rocks or rocks
- hydrogeological analysis of the soil that determines
- presence of water at all times or occasionally
- presence or not of the groundwater table (and its depth)
- flood risk areas

In addition, the study provides:

- a topographical survey (slope of the land);
- a survey of the existing situation, land boundaries, trees, wells, access, cadastral plan.

The consultant have to describe the detailed methodologies of the two kind study/analysis.

- **Characterize and quantify the pollution load**

The different pollutant and their sources must be defined (human waste, household product etc.).

It should integrate the population evolution and use equivalent pollution for 1 habitant for the assessment.

- **Consider the population's needs and demands in term of sanitation to suggest appropriate solutions.**

A social analysis must be done to know the desire and the acceptability of the population for collective sanitation supply.

The socio-economic projections, the future water demand (domestic and non-domestic) must be take into account.

- **Action program costing for 3 periods (up to 2021, 2022-2027 and 2028-2033)**

Measures to improve the water sanitation access will include the previous results in order to determine best cost effective and environmentally friendly solutions per locality.

These measures could be sorted into 5 categories: rules, governance, awareness, knowledge improvement, and works on the ground. They will be described based on a catalogue of measure (proposal in annexe 5) adapted for Moldova, with a view of detailing content, objectives, localisation, relation to the indicators to feed the dash-board, costs, plans concerned, project owners, schedule, etc.

Each cost will be distributed according to the following three periods: up to 2021, 2022-2027 and 2028-2033.

The consultancy company will prepare and present in its technical proposal an estimated investment budget and operating costs budget taking into account the activities mentioned in these terms of reference. An economic analysis will assess the impact of the project on the price of water.

Measures will be presented at the best scale regarding their implementation. This scale will be adapted to each measure.

- **Affordability Study**

In order to evaluate the economic situation, the consultant will provide affordability study, which will help estimating the theoretical water price for investment, operation and maintenance per inhabitant.

The consultant will have to consider the possibility of implementing a social tariff according to the economic means of the population and consider the willingness of the inhabitants to pay such price.

- **Feasibility study**

A feasibility study has to be done for the solutions: individual, semi collective or/and collective. It analyses the environmental, social and economic feasibility according to all the previous parts.

d. A drinking water supply and sanitation strategy at Nirnova basin scale

This concise document (<20 pages) will summarize the results of the two analysis and use the zoning in order to propose the most appropriate actions and investments to prioritize in the Basin.

This will give the local authorities and the association of mayors a proper tool to strengthen the services of water supply and sanitation in the entirety of the Nirnova basin.

Thus, this document will be prepared in partnership with all the actors involved in the project and will have to be validated by all partners.

In order to diagnose training needs in the field of drinking water and sanitation (training of municipal officials in charge of network maintenance, training of elected officials in charge of the problem ...), the consultant will identify the staff currently in charge of the maintenance of networks and works, and their profile (training, status, level of knowledge, etc).

For the investments, costs will be expressed both in national currency and in euros.

Particular attention will be given to identify possible financing sources including use of economic instrument in synergy with the assignment managed by OECD.

Special requirements:

- The consulting company must visualize the options evaluated (i.e. maps with sketches on the satellite images),
- The Strategy for development (least cost analysis) should be based on an in-depth assessment of investment and operation and maintenance costs (a unit cost database should be presented in the report; all calculations must be traceable and sufficiently documented),
- The proposed technical options must conform to the proposed institutional option (i.e. the grouping of several villages into a supply system requires an appropriate institutional arrangement concerning the management of water supply infrastructure),
- The options may be presented for different technical choices by specifying their cost per capita (rehabilitation of existing works or construction of new works, choice of treatment processes: energy-consuming or not, natural or chemical, etc).

e. A proposition of contract of delegation to manage and develop the WSS services

The consultancy company should evaluate governance improvement options and propose the institutional structures necessary for the operation and maintenance of the proposed investment elements. To do so, the consultant will right the contract proposal for a delegation of water service with the future operator. This document will further be revised by the local authorities and go through a validation process.

The proposed institutional option should be discussed with all relevant stakeholders (contract manager, national working group) and harmonized with the current SWE project, entitled "improving access to safe drinking water and sanitation of the villages of the Nirnova basin "in particular to take into account the Community Development Association created on the basin and in charge of the management of these services.

8.2 Dashboard to follow the Nirnova Master Plan implementation

Indicators that are already in place will be privileged. The following sources shall be investigated:

- The list of current sector indicators in Moldova listed in ADA/SDC state of things report n°2
- Indicators work out in SEIS project
- SDGs and indicators used in Environmental Performance Review run by UNECE
- Requirements of the main European Directives

Indicator will have to be as much as possible connected to the existing data bases to ease their calculation.

Maximum convergence with the dashboard for overall follow up of measure implementation in Danube Prut and Black Sea River Basin District will be seek. See structure presented in annex 4 which can be used as inspiration source for its preparation and adaptation to the Moldovan context.

8.3 Data use traceability: use of the metadata catalogue

WSS master plan development imply the production of maps and indicators. The necessary datasets for efficient Integrated Water Resources Management are produced by various organisations.

The basic principle of action is that all the datasets presented or used in a map or a table or an indicator (available as electronic data but also in hardcopy) must be described in a catalogue of metadata established by the project and must be available in the national FTP (File Transfer Protocol service), in compliance with the national legislation (Government Decision n°738, Law 264, etc.), SEIS standards, and in order to feed the Water Resources Information System (SIRA).

The contractor will have to identify official existing data sources, their availability and data producers.

As a consequence, the task of the contractor will include:

- To collect and update the necessary datasets at the level of the producers and, if required, digitalize data which is only available in hardcopy format (e.g. in annual reports);
- To work with the data producers in order that the dataset provided are described on line into the metadata catalogue made available by the project;
- To copy the raw data made available by each producer on the FTP made available by the project.

The corresponding expected results can be formulated as follow:

- All datasets used are described in English and in Romanian (at least) into the metadata catalogue;
- All raw dataset used are available on FTP.

The letter of request for data should include the obligation that when the data producer provides a dataset or GIS layer, he/she also provides the corresponding metadata sheet fulfilled (see Template in Annex 2).

The consultant will insure that the metadata are entered in the catalogue with in addition:

- Thumbnail
- Geographical limits
- Translation in English/Romanian of all metadata entered
- Declare of public access the metadata sheet

8.4 Format

Each chapter will be subject of a specific technical report and a methodological fiche describing the main methodological option used and the key point of the chapter. 4 fiches are expected for the 4 individual chapters plus updating 2 extra on metadata catalogue and data management related to cartographic atlas. A compilation will be done for the entire master plan.

All the documents consulted, data and information collected, interviews' records will be transmitted in their original forms (paper, files) and their valorised forms (GIS layers, data base, Excel, etc).

Reports will be transmitted in digital form which can be corrected (MS Office 2007 or more recent). Priority will be focused on illustrations and straightforward style.

GIS layers will be provided in Esri format (.shp) and at the closest possible scale to be defined, respecting the national official projection.

Maps will be designed and delivered in QGIS format and as TIF file (300 dpi), based on a template provided to the contractor by the Project Team (see specimens in Annex 3 file). All data and information collected will be provided in their original forms (paper, files) and their valorised forms (GIS layers, data base, Excel, etc.)

Maps will include only layers and dataset described into the metadata catalogue and having raw data available on FTP.

Maps will respect the standard GCS_WGS_1984 projection (Geographic Coordinate System of the World Geodetic System) of the UTM coordinate system (Universal Transverse Mercator) or the official projection system adopted at national level.

Meetings & guidance

Throughout the study, the mayors of the basins as well as SEE will provide data necessary for the good progress of the contractor. The SWE team will be a source of information, through its studies in possession and its various data collected during field visits but also through its various contacts with Moldovan and French experts. This approach is linked to the strategy of grouping and centralizing the information collected by SWE.

The methodology adopted for the development of this master plan as to be participatory. Working groups will be organized with SWE and the various stakeholders (contract manager, the Association of basin mayors, experts, basin Committee) to provide further information to the contractor and discuss the different orientations of the study.

For each working session, technical synthesis and oral presentations will be produced by the contractor in Romanian and English language. The contractor will have to participate, in their own expenses, to those meetings.

Moreover, this approach involves the mobilization of the local authorities of the Nirnova and the awareness of the inhabitants. Extra awareness rising measures could be including as part of the action plan proposed.

9. Schedule & implementation modality

9.1. Schedule

Duration of the assessment will be up to 12 months and is expected to start from August 2019. The assignment is divided into phases and the finalisation respective to the following schedule.

Successive reports have to be prepared according with a schedule presented below and delivered to the project team in due time.

It is anticipated however that the draft deliverables will be first reviewed by the project team and the beneficiaries (the local authorities of the basin) and, if necessary, will be returned to the implementing institution for finalisation and re-submission. Therefore, draft reports and deliverables will be submitted to the Project Team at least 2 (two) months prior to the established deadline, and reviewed reports and deliverables at least 1 (one) month prior to the established deadline.

Payment for the deliverables shall be considered only when the work is approved by the Project Team and the Thematic Leader in behalf of the country beneficiaries.

Summary of the work deliverables and schedule

Deliverables	Approx. number of pages outside annexes	Languages of deliverable	Due date for the draft report (M0 = signing of the contract)	Finalisation
Situation Analysis for drinking water	100	Romanian/English	M+4	M+8
Situation analysis for sanitation	100	Romanian/English	M+6	M+10
Cartographic atlas	40	Romanian/English	M+5	M+10
Strategy at basin scale	20	Romanian/English	M+5	M+12
Draft Contract of delegation	20	Romanian/English	M+7	M+12
Metadata catalogue	< 20	Romanian/English	M+7	M+10
Methodological fiches	4 fiches, 2-5 pages each	Romanian/English	M+6	M+10

In the bid, the prices will contain a detailed breakdown of the cost for all services being provided, starting from the daily rate per expert, number of days per expert until the lot price. Individual figures shall be provided for each deliverable, if any.

9.2. Implementation modality

The WSS Master Plan will be developed by the project team selected by the consulting company as appropriated for the expertise and available for the time allocated. The contracting authority suggests a team as followed, but the consulting company can adopt an alternative configuration according to its experience and capacity.

The key experts involved in the study must be those that have been proposed in the bidder's offer. However, if the consulting company wishes to propose different principal experts, it must demonstrate that their qualifications and capabilities are at least equal to those of the experts originally proposed.

The number of person-days proposed for each key expert and the total number of person-days for non-key experts should be clearly specified in the technical and financial proposal.

Close relationships will be formed and maintained with the beneficiary who will own the product and take ownership of the WSS Master Plan.

Key Experts

Key expert 1: Project Manager

Main role

- Technically directing all tasks of this project,
- Support and lead project staff,
- Actively collaborate with the contract manager on all issues related to the implementation of the project,
- Be responsible for the quality of all reports,
- Be fully engaged throughout the term of the contract
- Be permanently based in Moldova for a period of at least six months (main period of project activities).

Qualifications and skills

- University degree in civil engineering/land use planning or equivalent,
- Bilingual in English,
- Fluency in the Romanian language is obligatory unless the key expert 2 speaks fluent English and Romanian. French is a plus.

General work experience

- 5 years of professional experience, preferably including international experience in the water sector,
- Demonstrated experience in project management (at least three years),
- Good facilitation and negotiation skills (coordination with stakeholders).

Specific work experience

- At least 1 year of experience as a team leader in similar projects (preferably master plans in the water supply and sanitation sector),
- Experience in planning long-term strategic investments for water supply and sanitation projects,
- Experience in integrating technical, financial and institutional aspects of water supply and sanitation systems.

Key expert 2: Water and sanitation engineer

Main role

- Assist the project manager in all project-related tasks, particularly in engineering,
- Be fully engaged throughout the term of the contract,
- Be permanently based in Moldova for a period of at least six months (main period of project activities).

Qualifications and skills

- University degree in civil engineering specialized in water supply and sanitation,
- Fluency in Romanian language,
- Proficiency in English is considered an advantage (mandatory if the project manager does not speak the Romanian language).

General work experience

- Minimum of 5 years of professional experience in water design/development and sanitation systems (especially for rural areas).

Specific work experience

- Should have developed water supply systems,
- Must have experience in rural sanitation,
- Have written at least 2 master plans or feasibility studies,
- Experience in GIS mapping is considered an advantage,
- Knowledge of Moldovan standards in the water supply and sanitation sector.

Other Experts

The tenderer must propose a team of non-essential experts deemed necessary for the realization of the services. Areas of expertise and CVs must be specified in the offer. During the launching phase, the consulting firm must consider the need to call on these non-essential experts and must propose a revised list of experts, including the specialization and contributions of these. Replacement experts must have at least the same qualifications and experience as those offered in the offer. The selection of the experts is subject to the approval of the contracting authority. All experts must be independent and free from any conflict of interest in the responsibilities conferred on them.

Support staff and technical support

Technical support costs for support staff are considered to be included in the fees of key experts and other experts.

Contact details:

The responsible persons at national level (National Focal point):

Ms. Valentina TAPIS, State Secretary of the Ministry of Agriculture, Regional Development and Environment

valentina.tapis@madrm.gov.md

with support of Mr Radu Cazacu, deputy head of Agency "Apele Moldovei",
radu.cazacu@apele.gov.md

The EUWI+ project representative for Result 2 and 3 in Moldova: Mr Victor Bujac,

victor.bujac@euwipluseast.eu

The EUWI+ thematic leader for RBMP development in Moldova:

Mr Pierre Henry de Villeneuve

International Office for Water

p.henry-de-villeneuve@oieau.fr

with support of Remy Douguet, project manager at SWE rdouguet@see-swe.org

10. 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, Project Assistant, International Office for Water (IOW) and Mr Pierre Henry de Villeneuve, Project Director, International Office for Water (IOW)

email address: i.cicekoglu@oieau.fr

email address: p.henry-de-villeneuve@oieau.fr

Deadline for submission of the technical and financial offer is **29 July 2019, 9:00 (CET)**

ANNEXE 1 : VILLAGES RECORDS : NEMTENI

1. GENERAL INFORMATION

Villages in the municipality	Nemteni
Surface area of the municipality	2,53 km ²

2. EXISTING WATER SUPPLY AND SANITATION SYSTEMS

Water supply system			
Length of the public network	10 km	Year of construction, state	2010
Reserve ratio	34 %	Number of people connected to the public network	173
Water source	Artesian well	Reservoir	2 reservoirs of 50 m ³
Sanitation system			
Presence of a collective system	Yes	Year of construction, state	2011
Number of connexions to the collective sanitation system	96	Number of individual sanitation system (septic tank)	30
Waste water reject point	Field		
Economic users			
Industries of the municipality connected to the network		Irrigation system	-
Schools			
Type of school, location	Kindergarten	Secondary school	
Water source	Network and wells		
Water supply system	Intern network		
Sanitation system	Intern network		
Septik tank	60 m ³		
Other users			
Type of infrastructure	Health center	City hall	
Water source	Network and wells	Bottles and wells	
Water supply system	Intern network	-	
Sanitation system	-	-	
Septik tank	-	-	

3. WATER RESSOURCES IDENTIFICATION

Source 1	Source 2	Source 3
----------	----------	----------

Name			
Origin : underground (source, drilling), surface	Surface, 120 wells, 5 fountains	Underground, artesian well	
Flowrate (m3/day)		80 m3/day	
Low water level (m3/day)			
Water quality		Not conform to the standards	
Year of construction, state of the work		2010	
Vulnerability of the source			
Type of soil around the catchment			
Slope around the catchment (%)			
Potential pollution sources (agriculture, industries...)	External latrines, animal waste		
Main pollutants	Ammonia, Iron, Chloride, Fluorine		
Protection area (m2)	Yes, surface	-	

4. ESTIMATION OF THE NEEDS

Domestic users			
Population (source of the information)	1726 (mayor)	Evolution of the population (%)	
Current water consumption (m3/day/capita)		Evolution of the water consumption (m3/day/capita)	
Annual period of peak consumption		Annual period of low water level	
Daily period of peak consumption			
Economic users			
Industries currently implanted in the municipality	10 (petrol, commerce)	Surface area of agricultural lands (m2)	
Amount of water needed by industries (m3/day)		Amount of water needed by agriculture (m3/day)	0 (use rainwater)

Schools			
Type of school, location	Kindergarten	Secondary school	
Number of pupils	65	148	
Number of teachers	4	20	
Amount of water used (m3/day)		10 m3/month	
Other users			
Type of infrastructure	Health center	City hall	
Number of people concerned			
Amount of water used (m3/day)			

5. ECONOMIC ANALYSIS AND ACTION PROGRAM OF THE PROJECTS FOR THE MUNICIPALITY

	Village			
Until 2021	Project			
	Owner of the project			
	Amount of investment			
	Step to achieve			
	Monitoring indicators of the objectives to reach			
2022 to 2027	Project			
	Owner of the project			
	Amount of investment			
	Step to achieve			
	Monitoring indicators of the objectives to reach			
2028 to 2033	Project			
	Owner of the project			
	Amount of investment			
	Step to achieve			
	Monitoring indicators of the objectives to reach			
Impact on the water price				

Current water price (MDL/m3)	School : 15 MDL/m3	New water price estimated (MDL/m3)	
Ability to pay (MDL/m3)		Average income per capita (MDL/month/capita)	