

Terms of Reference

For the Technical Supervision of the Reuse of the Effluent of Wadi Shuayb Wastewater Treatment Plant for Solar Powered Irrigation of Three Farms, Al-Salt, Jordan

In the framework of
MENA Water Matchmaker 2 Project

Funded by UfM / Sida

1. Background and context

1.1. The Matchmaker 2 Project

Middle East and North Africa (MENA) is shaped by its unique geographical, ecological, geopolitical and cultural features. It is challenged by natural conditions including water scarcity, demographic change, unemployment including among the youth, poverty, changing consumption patterns including rising water and food demands, urbanization, growing energy needs, environmental degradation, climate change, gender disparities and more. In parts, MENA faces an enduring economic crisis, war, socio-political instability, conflicts and is impacted by large-scale migratory movements. Most of such natural and man-made challenges are directly linked with water.

The project 'Making Water Cooperation Happen in MENA: Piloting Tangibles', aka MENA Water Matchmaker 2 project, aims to equip UfM MENA countries with tangible and scalable local technical solutions, combined with employability capacitation as well as with selected applicable and shareable policy tools, for improved water management and climate resilience, through multi-stakeholder, multi-sectorial and gender mainstreaming approaches. The project's main objective is to prove, through piloting, the integrated concept of applying Water-Energy-Food-Ecosystems (WEFE) Nexus technical solutions at local level while capacitating priority beneficiary groups on employment options, offering measurable and scalable contributions for further application in UfM MENA countries, and assisting the UfM Water Agenda to enter and mark progress on tangible benefits at local level, while contributing to Sweden's Strategy for MENA 2021-2025.

Water-food-energy connections lie at the heart of sustainable, economic and environmental development and protection. The demand for all three resources continues to grow for various reasons: a growing population, ongoing population movements from farms to cities, rising incomes, increased desire to spend those incomes on energy and water intensive goods/varying diets, international trade, urbanization and climate change. The WEFE Nexus approach uses context-specific solutions based on different levels of interventions to achieve long-term economic, environmental and social goals.

In the core of the MENA Water Matchmaker 2 project is the implementation of two demonstrable and scalable technical WEFE Nexus interventions combined with employability/entrepreneurship

capacitation activities, that will be implemented in Jordan and in Palestine, through a cross-country approach and towards regional benefits for MENA countries. For Jordan, Wadi Shuayb was chosen to be the area to implement the project activities.

1.2. The Wadi Shuayb Wastewater Treatment Plant

The Wastewater Treatment Plant (WWTP) in Wadi Shuayad, Al-Salt, aka Al-Salt WWTP or Plant, was established in 1973 with the aim of treating sewage and reusing the treated water for irrigating crops. The site of the plant is surrounded by two chains of mountains, from the east and west, which makes the cost of pumping water to the farms in the mountain very high.

The reclaimed water coming out from Al-Salt WWTP flows by a gravity in Wadi Shuayb and is being used directly and indirectly by farmers distributed along the Wadi. Some farmers pump the treated wastewater off the plant directly to irrigate their trees while others use a gravity-based pipe to get the irrigation water.

There is a 100 m³ tank collecting the treated wastewater from Al-Salt WWTP effluent and transfer such type of water to farms through a 4" transfer pipeline elongated downstream the Plant.

The total lands irrigated directly with the reclaimed water are estimated to be 150 dunums, distributed over 25 farms.

Currently, the direct reuse of treated wastewater (TWW) for irrigation is 10% of the Al-Salt WWTP effluent.

The following tables display the average quality of the TWW in Al-Salt WWTP for year 2020 and 2021 as appeared in the Water Authority of Jordan (WAJ) lab monthly reports.

Seasonal variation in the Al-Salt WWTP effluent for year 2020

Parameter	Winter			Spring			Summer			Autumn		
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
INF.AVG.FLOW (m ³ /day)	10418	8298	9480	9751	11070	9703	11733	10179	10272	10193	10032	10094
pH (SU)	7.73	7.75	7.72	COVID 19 Quarantine period in 2020			7.82	7.5	8.03	8.31	7.87	7.88
TDS (mg/l)	790	801	747				836	803	834	831	830	864
TSS (mg/l)	14	16	45				43	35	37	53	34	37
BOD ₅ (mg/l)	10	6	7				10	34	28	23	13	11
COD (mg/l)	84	91	117				89	79	82	90	81	90
PO ₄ (mg/l)	8	19.6	9.4				-	16.1	14.1	13.9	10.5	-
NO ₃ (mg/l)	2	1.8	70.5				-	3.4	2.5	1.5	2	-

NH ₄ (mg/l)	13.7	5.2	4.6			33	29.9	31.4	13.5	-
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- : Not Measured

Al-Salt WWTP effluent characteristics for year 2021*

Parameter	A-Salt WWTP Effluent 2021**			
	Unit	Minimum yearly Results	Maximum yearly Results	Average yearly Results
pH	SU	7.08	7.51	7.40
BOD ₅	mg/l	9	39	22
COD	mg/l	74	128	90
TSS	mg/l	11	82	39
TDS	mg/l	768	927	849
NH ₄	mg/l	6.7	41.1	26.7
NO ₃	mg/l	0.5	13	2.4
TN***	mg/l	31.3	52.9	42.1
PO ₄	mg/l	5.1	12.4	9.2
<i>E. coli</i> ***	MPN/100ml	1.7E+05	3.5E+05	2.4E+05

*: All the data was extracted from WAJ monthly reports except where noted

** : The monitoring period was from January to October /2021

***: From RSS laboratory data as these tests are not measured by WAJ labs

Assessing the average results shown in the tables above against the Jordanian Standard No. 893/2021 (JS 893/2021), the following can be summarized:

- For discharging to streams, wadis or water bodies: The effluent water quality does not comply with the requirements of the JS 893/2021 as *E. coli* exceeded the maximum allowable limit stated in the standard for such use in year 2021.
- For reuse in agriculture:
 - Irrigation of vegetable crops which are eaten raw or cooked is prohibited as per the JS 893/2021 requirements.
 - Category A/ irrigation of parks, green areas and roadsides inside the cities: The effluent water quality does not comply with the requirements of the JS 893/2021 as *E. coli* exceeded the maximum allowable limit stated in the mentioned standard in year 2021.
 - Category B/ irrigation of fruitful trees, green areas and roadsides outside the cities: The effluent water quality does not comply with the requirements of the JS 893/2021 as *E. coli* exceeded the maximum allowable limit stated in the mentioned standard in year 2021.
 - Category C/ irrigation of industrial crops, field crops and forestry: The effluent water quality complies with the requirements of the JS 893/2021 for all tested parameters in the standards group (group of properties and tests that the effluent quality should

comply with the limits stated in the standard according to the usages for this category) in year 2021.

- Additional category/ irrigation of cut flowers: The effluent water quality does not comply with the requirements of the JS 893/2021 as BOD5, COD, TSS and E.coli exceeded the maximum allowable limits stated in the mentioned standard in year 2021.

2. Description of the Assignment

2.1. Objective

The objective of the assignment is to provide technical assistance to the GWP-Med for safeguarding good delivery of works that will be performed under the Call “for the Reuse of the Effluent of Wadi Shuayb Wastewater Treatment Plant for Solar Powered Irrigation of Three Farms, Al-Salt, Jordan”, 07/2022/Matchmaker 2, <https://www.gwp.org/en/GWP-Mediterranean/About-GWP/more/calls-for-tenders/Callconstructionofthreewetlands/> - Annex 1.

Specifically, the Successful Participant under the present Call will supervise the Successful Contractor of the Call 07/2022/Matchmaker 2, monitor the conducted work and certify the completion of the works in compliance with the respective ToR (attached) as well as the good operation of the constructed systems for thirty (30) days after their completion.

The detailed list of requested services is provided in the following section (2.2).

2.2. Requested Services

The assignment includes delivery of the following outputs for the Successful Participant:

- Define, with the GWP-Med representative and the Successful Contractor of Call 07/2022/Matchmaker 2, the specifications of Call 07/2022/Matchmaker 2, in terms of time schedule, required work and outputs, that will be monitored and supervised, also describing the methodology that will be followed for these.
- Provide a preliminary report after the first joint meeting with the GWP-Med representative and the Successful Contractor of Call 07/2022/Matchmaker 2. The report should reflect the stages and actions that will be followed during the construction of the work requested in Call 07/2022/Matchmaker 2, as well as a respective timetable.
- Monitor and supervise the works and outputs of the Successful Contractor under the Call 07/2022/Matchmaker 2.
- Keep track of the supplied equipment (e.g. number of solar panels) under the Call 07/2022/Matchmaker 2.
- Keep an online project logbook, updated on weekly basis, and shared with the GWP-Med representative.
 - The logbook, among other project management related topics, should provide information on the progress of the works under the Call 07/2022/Matchmaker 2, an

updated estimated time until completion per delivery of equipment or construction task, issues being faced and actions taken, etc.

- Advise the Successful Contractor of Call 07/2022/Matchmaker 2 and the GWP-Med representative on various issues, phases and timeframes related to the works.
- Act as intermediate person between the GWP-Med representative, from whom she/he will take guidance and report to, and the Successful Contractor of Call 07/2022/Matchmaker 2.
- Provide the measurements for the final payment of the Successful Contractor (Chapter 5 of the ToR of Call 07/2022/Matchmaker 2).
- Provide a final assessment report on the quality of the works performed under the Call 07/2022/Matchmaker 2 and submit a justified opinion on whether the GWP-Med representative should accept the completion of the project by the Successful Contractor of Call 07/2022/Matchmaker 2.
 - If the works performed are not satisfactory or not in compliance with Call 07/2022/Matchmaker 2, the successful Participant should propose corrective actions. The successful Participant must follow up the corrective actions until completion so as to provide a Certificate of Successful Completion to GWP-Med representative.
 - If the works performed are satisfactory and in compliance with Call 07/2022/Matchmaker 2, the successful Participant should provide a Certificate of Successful Completion to GWP-Med representative.
- Monitor
 - The performance of the completed works and outputs under the Call 07/2022/Matchmaker 2, for one (1) month on weekly basis after the completion of the works, but no more than three (3) months from the project's starting date to secure the good operation of the constructed system and provide a Certificate of Good Operations to GWP-Med representative.
OR
 - The progress of the corrective actions of the Successful Contractor of Call 07/2022/Matchmaker 2 until completion and monitoring the performance of the completed works and outputs under the Call 07/2022/Matchmaker 2, for one (1) month on weekly basis after the completion of the works, but no more than three (3) months from the project's starting date to secure the good operation of the constructed system and provide a Certificate of Good Operations to GWP-Med representative.
 - In case of unforeseen delay in the completion of the works under the Call 07/2022/Matchmaker 2, GWP-Med may request for the extension of the services to be provided by the Successful Participant of the present Call.

2.3. Reporting line

The Successful Participant will work under the direct supervision of / and communicate directly with Dr. Ghazi Abu Rumman, GWP-Med Senior Programme Officer and Head of the GWP-Med operations in Amman, who is serving as Project Coordinator for Technical Solutions.

Questions must be addressed in writing.

3. Obligations

3.1. Visit of the Area of Installation

- The Participants are invited to visit the Assignment Site, as described in Call 07/2022/Matchmaker 2, to establish and thoroughly appraise the extent and nature of the required works.

3.2. Supervision

- The supervisor (Successful Participant of the present Call) will act as the intermediate person between the GWP-Med representative (please see 2.3. Reporting Line) and the representative of the Contractor responsible for the completion of the Technical Works under the Call 07/2022/Matchmaker 2.
- The Successful Participant of the present Call will be asked to sign a non-conflict of interest statement between him/her and the Successful Contractor of the Call 07/2022/Matchmaker 2 as well as with GWP-Med.
- GWP-Med will provide the name of the Successful Contractor of the Call 07/2022/Matchmaker 2 in due time.

3.3. Penalties

- If the Successful Participant shall fail to start and complete the Assignment within the time frame stated above, GWP-Med shall assess a penalty of €100 per calendar day for each and every day the Successful Participant fails to complete the contract.
- The designated GWP-Med manager reserves the option to extend the scheduled completion date or waive this penalty clause in its entirety if he/she is of the opinion that extenuate in circumstances deemed such action appropriate.

3.4. Confidentiality

- By submitting an offer, the Participants are committing to an understanding of the requirements of the work and have sufficiently addressed all aspects of the tender. All information the Participants provided has been checked to be correct and as intended.
- All information supplied by GWP-Med in connection with this tender to date, and any further information supplied during the tender process shall be regarded as confidential and must not be shared with any other organization without written permission of GWP-Med.

4. Duration of the Contract

The overall duration of the contract will be maximum 90 calendar days.

In case of unforeseen delay in the completion of the works under the Call 07/2022/Matchmaker 2, GWP-Med may request for the extension of the services to be provided by the Successful Participant of the present Call.

5. Contract Price and Schedule of Payments

The maximum fee for this assignment is **22.000,00 EUR***. This amount includes all other costs, income taxes and any other amount payable or cost that may be required for the completion of the work/service, **including VAT**.

The schedule of payments is as follows:

Tasks	Deliverables	Deadline / Indicative	Payment Schedule
First meeting with the GWP-Med representative and the Successful Contractor of Call 07/2022/Matchmaker 2.	Preliminary report	2 weeks after the successful completion of the 07/2022/Matchmaker 2 call for Offers	Tranche 1: 20%
Completion of the technical works (including the correction actions if necessary)	Certificate of Successful Completion.	Up to 60 Days (with the completion of the technical works)	Tranche 2: 70%
Completion of monitoring of the performance of the completed works and outputs).	Certificate of Good Operation	Up to 90 days - 30 Days after the completion of the technical works	Tranche 3: 10%

In case of extension of the period of services, due to unforeseen delays in the completion of the construction works under Call 07/2022/Matchmaker 2, the contract will be amended accordingly and an updated payment schedule will be provided.

6. Selection Criteria, Qualification and Experience, Awarding Criterion and Evaluation Process

6.1. ON / OFF criteria

Successful participants must (in case of a group of experts or company, the experience listed below applies only for the lead expert):

- Must be enrolled in one of the official professional or trade Registries in Jordan
- Have MSc on Environmental/Civil/Hydraulics/Mechanical/Chemical Engineering/Agricultural Engineering

- Have Excellent oral and written communication skills in English and Arabic.

6.2. Qualification and Experience

1. CVs (for natural entities) or Entity Profile (for legal entities): Provide a brief description of the Participant submitting the Offer, its legal mandates/authorized business activities, the year and country of incorporation, types of activities undertaken, etc.
2. Understanding of the Assignment Context: The participants must provide a maximum 3-page Work Method Statement describing the work to be performed and a timeframe based on the ToR for Call 07/2022/Matchmaker 2.
3. Minimum five (5) years of experience on wastewater treatment and reuse for irrigation purposes in MENA (for the group of experts or the company in total).
4. Minimum three (3) years on On-Site Supervision in sectors related to the current project (for the group of experts or the company in total).
5. Minimum one (1) project directly related to the design or construction of a constructed wetland.

For points 3,4 and 5 the Participant should provide a list projects/assignments providing the following details for each one of them:

Title of Project/Assignment	
Date & duration of the Project/Assignment	
Geographical area of intervention	
Contents of intervention (mention briefly key elements like type of works and key metrics)	
Cost of the Project/Assignment	
Funder and End Client (if different) contact details for reference cross-checking* <ul style="list-style-type: none"> • Name of the client • Email of the client 	
<small>*The participants provide consent to the Contracting Authority to contact the listed clients. In case of confidentiality matters, please indicate.</small>	

6.3. Awarding Criterion and Evaluation Process

The Award criterion is the most economically advantageous tender on the basis of best price / quality ratio.

Offers qualified in terms of exclusion grounds and selection criteria will be further evaluated on the basis of the requirements presented under section “Qualification and Experience”, as follows:

Name of Natural or Legal person or Entity:			
(1) Criterion	(2) weighting (w)	(3) points of criterion (c), 100-150	(4) Score = (2) x (3)
CV / Entity profile	20%		
Understanding of the Assignment context	35%		
Minimum five (5) years of experience on wastewater treatment and reuse for irrigation purposes in MENA.	15%		
Minimum three (3) years on On-Site Supervision in sectors related to the current project.	15%		
Minimum one (1) project directly related to the design or construction of a constructed wetland.	15%		
UTO	100%		

Failure to provide the minimum required qualifications is considered ground for disqualification

Scoring for each evaluated section will be made as following:

Scoring for each evaluation criteria starts from 100 points (when minimum requirements are met) up until maximum 150 points (100p Base +10p for extra criteria over base up to 50 additional points). Scoring for each evaluation criteria starts from 100 points (when minimum requirements are met) up until maximum 150 points

For **Criterion “CV / Entity Profile”** score starts at 100 points (when minimum requirements are met) and can reach 150 points depending upon the relevance to the requested assignment, the fiscal capacity, the presence (number of years) in the market, the type of undertaken activities of the participant, environmental management systems or standards etc.

For **Criterion “Understanding of the Assignment context”** score starts at 100 points when minimum requirements are met) and can reach 150 points depending upon the understanding of the nature of the requested assignment (what the participant must do), on the method of work (how the participant will do it) and the estimated time of completion (based on the timeframe included).

Each Section/evaluation criterion is evaluated autonomously. The final scoring of each evaluation criterion is the outcome of its scoring multiplied by the corresponding weighting

factor. The overall score of the technical offer is the sum of the final scoring of all the Sections/evaluation criteria.

The overall score of the technical offer is calculated on the basis of the following formula:

$$B_i = w_1 \times c_1 + w_2 \times c_2 + \dots$$

For the overall score which will determine the ranking of offers, technical evaluation will be weighted with 80%, and the financial offer with 20%.

The final listing of the most advantageous offers will be made on the basis of the following formula:

$$\Lambda_i = 0.8 * (B_i/B_{max}) + 0.2 * (K_{min}/K_i).$$

Where:

- Bmax: the max score received by the best of the technical offers received
- Bi: the score of the technical offer
- Kmin: The cost of the financial offer with the minimum price offered.
- Ki: The cost of the financial offer

The most advantageous offers is the one with the greater value of Λ .

In case of equality of overall scores, the winning proposal is the one whose corresponding technical proposal received the highest rating.

7. Terms and Conditions

Language

The language of this procedure, the tender documents and the offers is English. Any documentation (certificates, etc) submitted in any other language should be accompanied by a translation in English, certified by a lawyer or public authority.

8. Place of Performance

The three pilot farms as stated in [Call 07/2022/Matchmaker 2](#) are at Wadi Shuayb Wastewater Treatment Plant, Al-Salt, Jordan.

9. Monitoring and Progress Controls

Dr. Ghazi Abu Rumman, GWP-Med Senior Programme Officer and Head of the GWP-Med operations in Amman, who is serving as Project Coordinator for Technical Solutions, will be providing oversight and guidance from the side of the Project Team.

Services will be rendered to the Senior Programme Officer Dr. Ghazi Abu Rumman and will be considered completed upon approval of the deliverables by the Senior Programme Officer and the Project Coordinator.
of the project.