



Tender: Rehabilitate the existing Gravity Flow Irrigation Systems in Balqa, Jarash, and Irbid Governorates, and supply water for irrigation in seven planting locations.

PART 2 – THE REQUIREMENT

In addition to the following TOR. the approved design is considered as part of the project documents.

TERM OF REFERENCES

1. What is the Project?

IUCN-ROWA has been conducting several projects and initiatives toward promoting sustainable development in Jordan to improve livelihoods and build resilience for vulnerable groups. This tender will be implemented as a part of the Field Level Agreement (FLA) that has been established as the framework for the cooperation between the WFP "World Food Programme" and the IUCN "International Union for Conservation of Nature" to implement the Output 4 "Job creation through NRM and ITT" of the WFP, FAO, and IFAD joint project, titled of "Enhancing resilient livelihoods and food security of host communities and Syrian refugees in Jordan and Lebanon through the promotion of sustainable agricultural development". the project is implemented by the WFP, the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), and the Ministry of Agriculture under the EU-MADAD funded project.

The overall objective of the project is to enhance the food security status of food-insecure and vulnerable families in rural areas through the creation of short-term labor opportunities through the implementation of food assistance for asset creation activity. This tender is to sustain the established forests and rangeland seedlings beneath the output 4 under the EU-MADAD project, in the Karak, Madaba, Balqa, Jarash, and Irbid governorates. By rehabilitating the existing irrigation network and supplying water for irrigation.

1. Scope of Work

1.1 Objective:

The main objective of this tender is to maintain the established forest seedlings under the FLA agreement with the WFP. Therefore, the contractor is requested to rehabilitate 655 dunums of existing gravity flow irrigation systems (GFISs) and ensure they function well in the following forests: Wasfi Al Tal-Balqa, Mastaba-Jarash, Balila-Jarash, and Kufuor Awan-Irbid. Furthermore, the contractor is requested to supply and transport water (for irrigation purposes) to seven planting locations: Wasfi Al Tal-Balqa, Mastaba-Jarash, Balila-Jarash, Kufuor Awan-Irbid, Ma'in-Madaba, Shrief-Karak, and Bie'eh-Karak.

1.2 Scope of Work and Key Tasks:

The geographical scope of this tender as stated in Table 1, is within the Wasfi Al Tal (Balqa), Mastaba (Jerash), Balila (Jerash), Kufuor Awan (Irbid) as a forest site, and Ma'in (Madaba), and Shrief& Bie'eh (Karak) as a rangeland site.

Mainly, the contractor should fulfill the following tasks:

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1. The contractor is requested to rehabilitate the existing irrigation networks (655) in total by replacing all GR networks, main pipelines, emitters, valves, fittings, connections, etc. according to the BOQs. As well as maintenance of the remaining parts of the network and ensuring the network will function well in all locations.
2. The contractor is requested to maintain the existing water sources (water tanks: 7 steel water tanks, one concrete tank), by replacing fittings, valves, and other parts needed to be replaced in accordance with the BOQs.
3. The contractor is requested to supply, transport, and distribute 3,300 m³ of water amount to the planting location upon request from the field coordinator in each location. See Table 1.
4. The contractor is requested to commission and test the rehabilitated irrigation network and water tanks in accordance with the national standard for the irrigation system.

Table 1: shows the coordinates of the targeted sites (Rangeland and Forest), the area of the irrigation network that needs rehabilitation, and the required water amount to be delivered in each location.

Table 1: Targeted locations and required works

No.	Location	Location	Irrigation network (dunum)	Amount of water (m ³)	Site type
1	Wasfi Al Tal	https://goo.gl/maps/9BJs6uxh5vYAFiMGA	140	350	Forest
2	Mastaba	https://goo.gl/maps/8fo1dNu9eAZwDvc4A	165	350	
3	Balila	https://goo.gl/maps/ZMBDcCc8PdbuwuzW7	100	350	
4	Kufuor Awan	https://goo.gl/maps/oLYwQpP85iM8rC866	250	800	
5	Ma'in	https://maps.app.goo.gl/8uUT9aYyaHF1LGxZ7?g_st=iw	0	400	Rangeland
6	Shrief	https://maps.app.goo.gl/i5ajf1LGoUNEfzVh7	0	800	
7	Bie'eh	https://maps.app.goo.gl/LjvU9Nw5dZKDeSHL8	0	400	
	Total		655	3450	

Important notes:

The supply water for the forest sites: Wasfi Al Tal (Balqa), Mastaba (Jerash), Balila (Jerash), and Kufuor Awan (Irbid) will be downloaded directly to the existing tanks, and then the seedlings will be watered by the existing tanks. While in the rangeland sites Ma'in (Madaba) and Shrief & Bie'eh (Karak), the water truck should distribute the water among the seedlings one by one; it could take 5 hours for each water truck.

1.3 Time Frame:

The contractor should set out the work plan assuring implementation of this tender within one month as the work plan should be detailed and show all tasks that should be implemented under this tender.

Tender: Rehabilitate the existing Gravity Flow Irrigation Systems in Balqa, Jaresh, and Irbid Governorates, and supply water for irrigation in seven planting locations.

2. General implementation concept:

The Gravity Flow Irrigation Systems must be able to deliver and apply the amount of water needed to meet the forest tree-water requirement. Irrigation systems must supply enough water to prevent daily forest trees-water stress by satisfying the difference between evapotranspiration demands and available soil moisture supplied by rainfall or previous irrigations.

A proper irrigation system addresses uniform irrigation application in a timely manner while minimizing losses and damage to soil, water, air, plant, and animal resources.

Physical characteristics of the area to be irrigated must be considered in locating the lines and spacing the emitters, and in selecting the type of mechanized system. The location of the water supply, capacity, and source of water will affect the size of the pipelines, irrigation system flow rates, and the size and type of water resource (in this tender applied the Gravity Flow Irrigation Systems).

Key points should be considered in supplying and implementing irrigation system:

- The irrigation system must be able to deliver and apply the amount of water needed for the established forest seedlings considering the proposed area and natural topography.
- Flow rates must be known for proper operation.
- Topography and field layout must be considered in fixing the main pipe.
- All materials (GR, main and sub pipelines, and others) should be manufactured from virgin materials and should be proven by an official certificate.
- Main pipeline should be not less than 16 bars.
- All fittings on the main pipelines should be installed using the welding approach then install /steel cleats.
- All valves should be not less than 16 Bars. (steel type).
- The Jordanian construction code must be used in the rehabilitation of water tanks, concrete and steel tanks.

3. Deliverables and Reports

3.1 Deliverables:

Under this contract, the company must deliver the followings:

1. The contractor should hand over 655 Dunums of rehabilitated irrigation network including rehabilitated water recourses (water tanks).
2. The contractor should deliver 4000 m³ of irrigation water to the stated location in Table 1. Include the required support documents.
3. The contractor should develop and submit an operational plan for the irrigation network (guidelines and best practices).
4. The contractor should develop and submit as-built drawings for the rehabilitated irrigation networks, tanks, equipment catalogs & warranty, operation manuals, spare parts, and any further documents.



Tender: Rehabilitate the existing Gravity Flow Irrigation Systems in Balqa, Jaresh, and Irbid Governorates, and supply water for irrigation in seven planting locations.

3.2 Reporting:

The company is requested to submit weekly progress reports to the IUCN showing the progress rate according to the approved work plan. After the project completion, the company should draft and submit the Final Report to IUCN including preparation phase, implementation phase, in addition to all work steps, the final version of all deliverables, stock inventory, as built drawings (AutoCAD and Pdf version).

3. Payment Schedule

The payments should be made to the contractor upon satisfactory completion of deliverables as stated in the table 2:

Table 2: Payment schedule

No.	Payments	Amount	Requirement
1	The First Instalment	50%	Upon signing the agreement.
2	The Final Instalment	50%	Upon satisfactory handing over the project, submit all the deliverables stated in the deliverable section (2.1) of the Tor. And submit the final report.

The IUCN will not bear any expenses resulting from storage, transportation, repair, increase or decrease quantities, or any additional cost under any circumstances.

4. Qualifications of the experts' staff

The contractor should provide a technical key staff (implemented team) to deliver the requested service with the following qualifications and experiences as a minimum:

Occupation	Qualifications
Civil engineer (Construction)	<ul style="list-style-type: none"> • University degree in a civil or relevant field (master\PhD degree is an advantage). • A minimum of 8 years of general experience. • Experience in the field of agricultural projects with work experience in at least one similar project. • Advanced knowledge of English and Arabic languages. Strong interpersonal skills and the ability to communicate with various stakeholders in politically sensitive situations with diplomacy and tact.
Agriculture or/and irrigation expert	<ul style="list-style-type: none"> • University degree in agriculture, irrigation or relevant field (master\PhD degree is an advantage). • A minimum of 10 years of experience in the area of agriculture. • Proven expertise in-depth knowledge of the field of agriculture with work experience in a similar project. • Expertise in constructing, supervision and implementing various Agri-project that applied the new agricultural practices such as hydroponics. • Expertise in implementing various smart irrigation systems (especially systems that utilize efficient water use such as hydroponic, aquaponic, and drip irrigation). <p>Advanced knowledge of English and Arabic languages. Strong interpersonal skills and the ability to communicate with various stakeholders in politically sensitive situations with diplomacy and tact</p>



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Mechanical engineer	<ul style="list-style-type: none">• University degree in Mechanical or relevant field (master\PhD degree is an advantage).• A minimum of 5 years of general experience.• Experience in the field of agricultural with work experience in at least one similar project.• Advanced knowledge of English and Arabic languages. Strong interpersonal skills and the ability to communicate with various stakeholders in politically sensitive situations with diplomacy and tact.
Technicians and workers	The number should align with the provided work plan, and the technicians and workers should be qualified to install the required materials.