



Methods for Irrigation and Agriculture
لتطوير أساليب الري والزراعة

Decentralized Wastewater Treatment and Reuse in Institutions: Mafraq Pilot in 3 Schools

Dec. 1, 2018 - Dec. 31, 2018

RFP#: WASH/JOR/PCA2018178/PD2018188/2018/MIRRA/Mafraq

First Progress Report

Dec 1st 2018 -Dec 31th
2018

PROJECT FACT SHEET

PROJECT TITLE:	Decentralized wastewater treatment and reuse in institutions
FUNDING AGENCY:	The United Nations International Children's Emergency Fund (UNICEF)
START DATE:	December 1 st , 2018
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IMPLEMENTING PARTNER IN JORDAN:

Methods for Irrigation and Agriculture (MIRRA) - a Jordanian non-governmental organization that specializes in the development of water and agricultural sectors including optimizing pressurized irrigation networks at the field and network levels, wastewater reuse in agriculture and capacity-building activities for individuals and institutions.



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General Information	
Country:	Jordan
Programme Code & Title:	WASH/JOR/PCA2018178/PD2018188/2018/MIRRA/Mafraq
Project Code & Title:	WASH/JOR/PCA2018178/PD2018188/2018/MIRRA/Mafraq
Responsible Officer(s):	Alham Al-Shurafat
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Implementing Partner Name & Code:	MIRRA
Project Name:	Decentralized wastewater treatment and reuse in institutions
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Reporting period	<i>From 1/12/2018 to 31/12/2018</i>
Report Submission date:	<i>6/1/2019</i>
Section One: Summary	
<p>This project is a collaboration between MIRRA and UNICEF that works within the framework of decentralizing most of the services in Jordan. This project focuses sanitation and wastewater management by targeting three schools in Irhab district within Mafraq Governorate. Irhab district has a population of 23,874 residents, of which 2,970 are Syrians. The district is an agricultural area with no sewer network coverage relying on cesspit for disposal of wastewater, water needs for agriculture are usually met through the piped water network that is supplied for domestic use. Alternatively, water trucking for agricultural purposes from privately owned boreholes is also practiced.</p> <p>The collaboration aims to pilot a new approach to wastewater treatment at a decentralized level within institutions but also communities to achieve the following objectives:</p> <ul style="list-style-type: none"> • Safe management of wastewater at a decentralized level to prevent groundwater pollution and to reuse water for agricultural purposes. • Greywater reuse to reduce the volume of fresh water consumption • Solar power as an alternative sustainable energy source for the operation of the WWT system including the operation of the irrigation network. • Increase awareness between students and teachers on the importance of water conservation, environmental impacts of poor management of sanitation, and renewable energy as a sustainable source to provide energy. 	

Section Two: Activities and Progress

- Preliminary studies have been completed on the site, the stakeholders have been identified, required specifications and designs for various have been completed. The information was communicated through prior visits and meetings with relevant schools, institutions, and local people.



Figure 1: Previous meeting with all stakeholders including school staff, relevant ministries, local municipality, UNICEF team and experts in relevant sectors on August 2018.

- Preliminary studies have been completed to determine the optimal locations for the installation of treatment and reuse systems for wastewater and greywater.
- Preliminary studies have been completed to determine the optimal locations for the installation of solar power systems.
- The sampling of influent wastewater and greywater at the schools and doing the main water quality testing.
- Drafting two tender offers: one for WWTPs, GWS, and sanitation facilities maintenance and the second for SPSs.
- Met with an agricultural expert who is a teacher in the schools to discuss the plan and design of the reorganization of agriculture (~ 3 dunums) and cultivation of empty spaces (~ 3 dunums) inside the 3 schools taking into account the local conditions in the village of Irhab.



Figure 2: Meeting Mr. Hassan a well known local Agriculture expert from the schools in Irhab, Al-Mafraq on 24 Dec 2018.

- Planning the reorganization of agriculture (~ 3 dunums) and cultivation of empty spaces (~ 3 dunums) into account all local conditions, feedback, and preliminary studies.

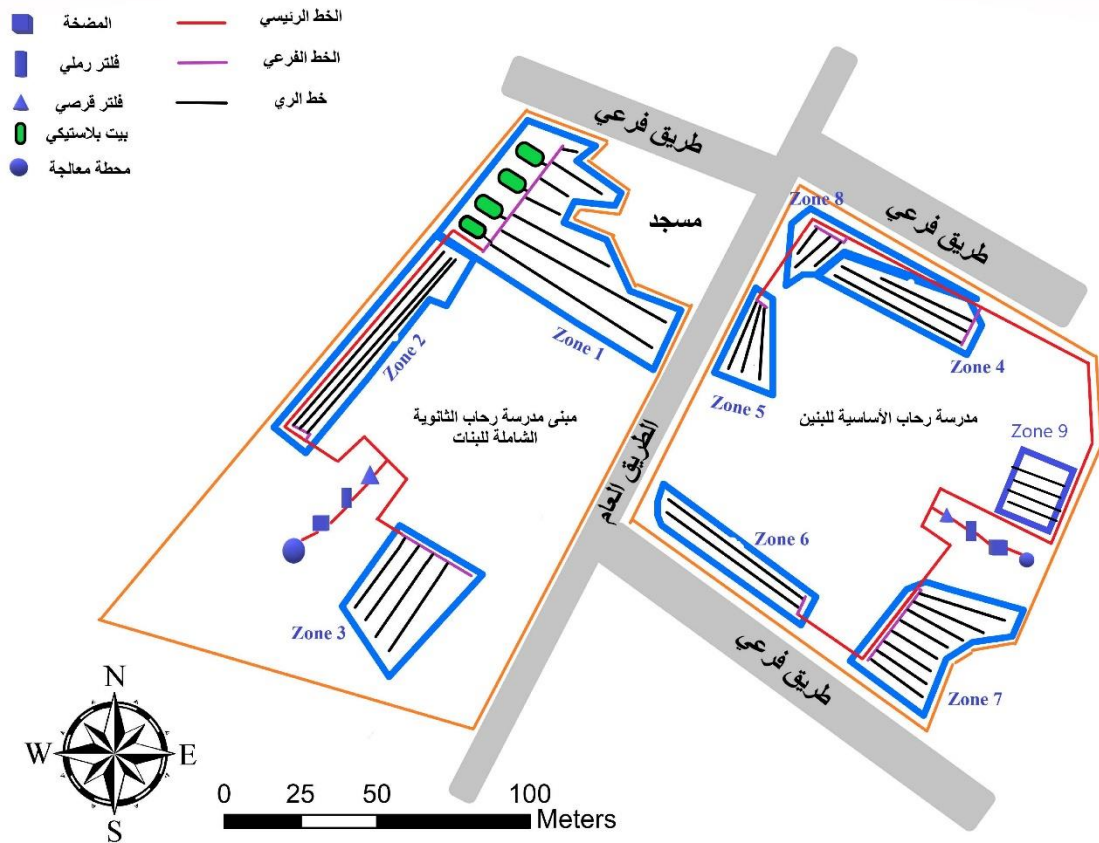


Figure 3: Zoning the area for Agriculture and initial irrigation scheme

Table 1: The agriculture zones and their purposes as planned for the schools.

School	Zone #	Area m2	Purpose	Result	Species/Greenhouses	Period of planting
Irhah Secondary school for Girls	Zone # 1	2720	Plants for production and vocational education	Products	Drumstick tree (شجر المورلينجا) for fodder Greenhouse for the cultivation of Aloe Vera	Mid-February to mid-March
	Zone # 2	1120	Garden in front the student break area	Aesthetic	various types	Mid-February to mid-March
	Zone # 3	1180	Fruit trees for production	Fruit	Olive trees	Mid-February to mid-March
Irhah elementary schools for boys	Zone # 4	770	Fruit trees for production	Fruit	Trees of almonds (أشجار لوزيات)	Mid-February to mid-March
					Apple trees (أشجار تفاح)	
	Zone # 5	440	High trees give aesthetic next to the entrance to the school overlooking the main street	Block the wind and the sun rays. Shadow and aesthetic	Thuja trees (شجر الثويا)	Mid-February to mid-March
					Cypress golden (جولدين ستار)	
					Chinaberry (الزنبخت)	
	Zone # 6	710	Elevated trees act as a buffer against the wind and the sun rays to protect students plays in the football pitch behind it and also to give aesthetic aspects	Block the wind and the sun rays. Shadow and aesthetic.	Paulownia (البالونيا)	Mid-February to mid-March
					Cypress (السرو البلدي)	
Pine trees (شجر الصنوبر)						
Zone # 7+Zone #9	1770	A garden for students to practice various activities and play and to	Shadow and aesthetic.	Chinaberry (الزنبخت)	Mid-February to mid-March	
				Roses trees (أشجار ورد)		

			receive visitors.			
	Zone # 8	550	An area planted with trees as an entrance to the project and schools. Also containing the project panel	Aesthetic	Thuja trees (شجر الثويا)	Mid-February to mid-March
					Cypress golden (جولدين (ستار)	
	Total	9260				

Section Three: Outputs and Deliverables

Deliverables:

1. Drafted a plan for the reorganization of agriculture (~ 3 dunums) and cultivation of empty spaces (~ 3 dunums).
2. Drafts of the two tenders. One for WWTPs, GWS, and Sanitation facilities maintenance, the second for SPSs.
3. Draft of the workplan.
4. Water quality testing of influent water

Section Four: Evaluation

The overall project is progressing in terms of accomplishing the objectives and adhering to the overall timeline.

Section Five: Risks, Issues, and Challenges

- The implementation of hygiene promotion and soft activities may face timeline restrictions to due to the school schedule and final exams. The schools are available during the dates between mid-February through mid-June. Furthermore, there is a month-long period from mid-July to mid-August the students from the the agricultural branch at the Irhab Secondary School for Girls have a mandatory training period at the school.
- Decentralization projects are still being tested in Jordan, this may cause challenges in terms of the distribution of tasks to fully ensure the projects sustainability.

Section Six: Collaboration

Thus far there have been no collaborations.

Section Seven: Financial Statement

MIRRA received the first installment of 70,016 Jordanian Dinars on 17 December 2018. A number of bureaucratic roadblocks, however, initially complicated MIRRA's collection of the funds. The Jordan Kuwait Bank refused to accept the withdraw of funds until it received official written approval from the Ministry of Environment. Meanwhile, the Ministry of Environment notified MIRRA that is was unable to give approval until the Prime Ministry also granted official approval. After numerous conversations the Jordan Kuwait Bank agreed to allow MIRRA to withdraw it funds on the condition that the Ministry of Environment would send its approval letter in early 2019.

Section Eight: Official Requests

- Mira asks if you can send an official letter to the Ministry of Finance asking for exemption from sales tax for the project because it is a development project.

Section Ten: Next Steps

Briefly listed below are the activities planned and additional relevant information next month (Jan 2019) of the project.

- Finalizing two tender offers: 1) A tender offer for WWTPs, GWS, and Sanitation facilities maintenance and 2) A tender offer for SPS.
- Finalizing the design and the timeline for the reorganization of agriculture (~ 3 dunums) and cultivation of empty spaces (~ 3 dunums) inside the three schools.
- Starting the purchasing process of all required materials for the reorganization of agriculture (~ 3 dunums) and cultivation of empty spaces (~ 3 dunums) inside the three schools.
- Tender announcements in a Jordanian newspaper for the two tenders.
- Making project brochures on the project and announcements about the project on all MIRRA media channels.

Note: It's important to have the crops and planting zones fully prepared by the end of January because It is well known that saplings or seed dispersal should be extended from mid-February to mid-March in Mafraq.

Section Eleven: List of Equipment

No equipment was purchased from the budget of this project yet.

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