



Progress Report

Realizing Sustainable Agriculture and Efficient Water Management in the Azraq Basin in Jordan through the Adaptation and Integration of Proven Technology and Community Partnership

Management Team		
Project Director MIRRA	Dr. Samer Talozzi	<ul style="list-style-type: none"> • Overall supervision • Financial affairs
Focal Point/Water and Environment Engineer MIRRA	Alham Al-Shurafat	<ul style="list-style-type: none"> • Logistics/Focal point • Stakeholder analysis and follow up • Managing the youth training program/trainer • Supervising the policy paper production
Senior Water and Irrigation Engineer MIRRA	Maram Zaid	<ul style="list-style-type: none"> • Designing and installing the irrigation systems. • Managing all the agronomy aspects (e.g crop selection). • Field data collection and analysis. • Producing the research documents and paper. • Managing the farmers training program. • Trainer within the youth program.
Coalition Advisor RFS	Omar Shoshan	<ul style="list-style-type: none"> • MEDIA aspects • Local stakeholders' outreach in Azraq • Advocacy missions in favor of the project
Support Staff		
Water Engineer/MIRRA	Weam Mehdawi	Support the training programs
Agriculture Engineer/MIRRA	Khalil Bani Mustafa	Support the training programs
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1. GENERAL PROJECT INFORMATION

Implementing agency:	Methods for Irrigation and Agriculture (MIRRA)	Reporting Period:	9 Apr 2019 - 9 July 2019
Agreement Number:	N.A.	Project Duration:	14 months
Country/Region:	Jordan	Submitted by:	Alham Al-Shurafat
Funding Spent (during reporting period):	19155.106	Date of submission:	30 July 2019
Funding (Total):	49775 USD	Funding Spent (Cumulative):	19155.106



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1a. Brief description of the project:	The main challenges that faces the Azraq community in Jordan are: groundwater depletion and salinization, soil salinization, climate change, and lack of awareness and extension support for farmers and communities. The previous mentioned challenges caused a reduction in livestock production, increased desertification and loss of wetlands. The project aims to overcome the challenges facing the local community in Azraq through an integrated sustainable packaged capacity building program , which includes modules on: Irrigation Systems Design and Management, Salinity Management, Sustainable Agriculture (Saline Tolerant Species + Organic Agriculture + Adaptation to Climate Change) and Advocacy and Capacity Building program. These modules will be designed and implemented by MIRRA and RFS and will target youth and farmers in the Azraq area.
1b. Collaboration and partnerships:	*MIRRA and the Rural Family Society (RFS) formed a partnership to facilitate the various project activities in Azraq. RFS is native to Azraq area. This partnership has identified the challenges and designed the solutions that we are implementing. *Additionally, MIRRA and two Azraq farmers formed a partnership to cooperate on implementing, monitoring and research on the entire packaged solution inside the two selected farms.

2. EXECUTIVE SUMMARY

● Technical applications:

- Two farms have been selected; one for a male farmer and the other for a female farmer (she is the only female farmer in Azraq).
- Low energy irrigation systems have been installed at the two farms. (Annex a-1)
- Data collection forms have been prepared. (Annex a-2)
- Magnetic devices to handle irrigation water high salinity have been installed. (Annex a-3)
- The selected crop has been planted in the two farms.

● Literature Review:

- Agronomy: Literature review on Panicum crop completed. (Annex b-1)
- Agronomy: Previous study on Panicum feasibility and applicability in Azraq by local association called Association of Sheep Breeders. (Annex b-2)
- Water Management: a literature review on magnetic treatment of saline irrigation water. (Annex b-3)

● Stakeholder Analysis:

- Stakeholders mapping and the stakeholder management plan. (Annex c-1)
- Inventory of Azraq farmers. (Annex c-2) *This is confidential information for our own use only and is not for publication and sharing with any other party.*

● Advocacy and Building Capacity:

- MIRRA Summer School in Azraq Application Announcement. (Annex d-1)
- MIRRA selected the 15 youth among 40 applicants. (Annex d-2)
- MIRRA youth training agenda. (Annex d-3)
- MIRRA announced for a local research assistant. (Annex d-4)

● Official Approvals:

- MIRRA has obtained the Prime Ministry approval. (Annex e-1)
- MIRRA has obtained the Ministry of Social Development Approval. (Annex e-2)

By these approvals, MIRRA and RFS can do all the activities stipulated in the project agreement.

- In Annex f-1, attached are the MIRRA and RFS staff field missions in Azraq report.



3. PROJECT PROGRESS

Objective 1: Achieving sustainable decentralized models of farms in Azraq

To ensure sustainability, equity and gender balance, MIRRA applied fully the proposed packaged solution at two small demonstration farms in Azraq (one for a female farmer and one for a male farmer). The female farmer is the only one in Azraq and is considered a role model for other women in need in Azraq. Cooperation/partnership agreements have been signed with these two farmers. The cooperation includes the farmers' contribution in terms of labor, harvesting, research measurement and full cooperation to disseminate the project knowledge and outputs at the local and national levels. With this, MIRRA fulfilled the indicator "Number of Farms" with the target of 2 farms.

Objective 2: Reducing the electricity bills required for pumping from the artesian wells

MIRRA installed an ultra-low energy drip irrigation system in conjunction with magnetic water devices to irrigate relatively new fodder crops with saline water - as a mechanism for improving water management (currently surface irrigation is used) and mitigating the impact of soil and groundwater salinity. The previous electricity bills have been collected and monitoring system have been included in the installation. Also, MIRRA formulated a data collection sheet on energy consumption for irrigation monitoring. MIRRA irrigation engineer will monitor the energy consumption throughout the project period to measure the indicator "Percent of electricity bills change".

Objective 3 Reducing water consumption for fodder irrigation:

MIRRA replaced the traditional surface irrigation system with a modern ultra-low energy drip irrigation system. Also, MIRRA provided an accurate irrigation schedule based on engineered calculations (based on several parameters as yield, soil and water characteristics). MIRRA installed flow meters all over the irrigation network to measure water consumed for irrigation at all corners of the irrigation network. Also, MIRRA formulated a data collection sheet on water consumption for irrigation monitoring during the project period. The MIRRA team also started collecting data about previous irrigation methods for later on water conservation estimation process. All this together will enable MIRRA team to measure the indicator "Percent of water consumption change".

Objective 4: Increasing food production annually to meet the local needs without a need for expensive imports from other regions or countries

MIRRA planted relatively new forage crops in the two demonstration farms. The selection of the new forage crops as Panicum was based on recent successful demonstrations on new crops in Azraq, literature review of local case studies, local farmers feedback and thoughts, and local relevant association experience and ideas. Most of these new crops are characterized with higher protein content and more frequent harvests in comparison with common forage crops. The MIRRA team, in cooperation with the two farmers, will measure the yield as well as other parameters at each harvest to measure the indicator "Percent of production change". MIRRA formulated a data collection sheet on yield production monitoring during the project period. The MIRRA team also started collected data about previous harvests using the old agriculture methods.



Objective 5: Equipping farmers with knowledge, farming skills and advocacy training on the application of sustainable rural agriculture

A database of all farmers in Azraq has been obtained. The project team will focus on the forage farmers and relevant associations to attend an advocacy building capacities program over 4 field training days. The target is to have 80 farmers equipped and convinced with the new applied packaged solution.

Objective 6: Creating a youth team specializing in sustainable rural agriculture and members in RFS

MIRRA and RFS announced for advocacy and building capacity program for youth called “MIRRA Summer School of Sustainability 2019”. An application form has been distributed online and by hand to the local community. 40 applicants have applied and 15 have been selected. The selected youth have been informed and a WhatsApp group has been established to communicate and start the outreach and training. Each selected youth had sent his/her personal picture and CV and signed a pledge to commit to the training program. The target of the indicator is to have 15 youth fully trained on advocacy and with abilities regarding the application on the proposed packaged solution.

4. INDICATORS

Indicators	Baseline Data	Target	Result this Period	Cumulative Data
Objective 1: Achieving sustainable decentralized models of farms in Azraq				
Number of farms	0	2	2	2
Objective 2: Reducing the electricity bills required for pumping from the artesian wells				
Percent of electricity bills change	0 %	40- 50% reduction in electricity consumption	-	-
Objective 3: Reducing water consumption for fodder irrigation				
Percent of water consumption change	0 %	30%- 40% reduction in water consumption	-	-
Objective 4: Increasing food production annually to meet the local needs without a need for expensive imports from other regions or countries				
Percent of production change	-	Increase of 20% to 30%	-	-



Objective 5: Having farmers with knowledge, farming skills and advocacy training on the application of sustainable rural agriculture in Azraq				
Number of farmers	-	80 Farmers (Men and Women)	-	-

Objective 6: Having a youth team specializing in sustainable rural agriculture and members in rfs.				
Number of youths	-	15 Youth	-	-

5.1 DESCRIPTION OF ONGOING ACTIVITIES DURING THE PERIOD OR COMPLETED Activities

Name of activity	Ongoing / completed	Short Description
Under objective 1: Achieving sustainable decentralized models of farms in Azraq		
Installation of irrigation systems	Completed	The irrigation systems have been installed at the two identified farms. At each farm a controller is installed to control the operation of the irrigation system according to a pre-set schedule.
Installation of the magnetic water devices to manage water salinity	Completed	One magnetic device has been installed in one farm, in which the water salinity reaches 8500 ppm.
Cultivation of salinity and drought tolerant crops species	On-going	Literature review on Panicum has been done. Literature review will be done on the other two crops: Atriplex and White sorghum.
Under objective 2: Reducing the electricity bills required for pumping from the artesian wells		
Installation of on-farm low-pressure irrigation systems	Completed	Low-pressure drip irrigation systems have been installed.
Electricity consumption reduction calculations	On-going	Collection of old electricity bills is being done. Comparing the electricity bills from previous periods and the current electricity bills will be done.
Under objective 3: Reducing water consumption for fodder irrigation		
Installation of water flow totalizers	Completed	Water flow totalizers have been installed to record water consumption for every irrigation event.
Preparation of data collections forms	Completed	Excel sheet forms are prepared for data collection.
Under objective 4: Increasing food production annually to meet the local needs without a need for expensive imports from other regions or countries		
Planting the Panicum crop	On-going	Panicum has been planted at the two farms. According to literature and previous studies, this crop has higher protein content and production in comparison with other conventional fodder crops in Azraq.
Under objective 5: Having farmers with knowledge, farming skills and advocacy training on the application of sustainable rural agriculture in Azraq		
Identifying the farmers matrix in Azraq	Completed	A database of all the farmers in Azraq has been obtained. The database includes the farms' locations, crops, area, irrigation methods and contact information.



Under objective 6: Having a youth team specializing in sustainable rural agriculture and members in RFS.		
Stakeholder analysis	Completed	A stakeholder analysis has been formed and a stakeholder map has been produced.
Youth selection	Completed	MIRRA Summer School of Sustainability in Azraq was announced and the youth applied via online submission and the participants were identified.

5.2 DESCRIPTION OF UPCOMING ACTIVITIES FOR THE NEXT PERIOD

Name of activity	Expected dates	Short Description
Under objective 1: Achieving sustainable decentralized models of farms in Azraq		
Planting Panicum	August	Completion of planting seedlings at the two farms.
Under objective 2: Reducing the electricity bills required for pumping from the artesian wells		
Measurements of energy consumption	August- November	Comparison between old electricity bills and new ones.

Under objective 3: Reducing water consumption for fodder irrigation		
Data collecting on water consumption	August-November	Data to be collected from flow totalizers.
Under objective 4: Increasing food production annually to meet the local needs without a need for expensive imports from other regions or countries		
Data collection on growth		Yield monitoring based on harvest.
Under objective 5: Having farmers with knowledge, farming skills and advocacy training on the application of sustainable rural agriculture in Azraq		
Conducting two field days		Description on Panicum, irrigation system, magnetic water treatment will be included in the field days.
Under objective 6: Having a youth team specializing in sustainable rural agriculture and members in RF.		
Conducting MIRRA Summer School of Sustainability 2019	1/8/2019- 20/9/2019	To educate the youth on sustainability advocacy, climate change adaptation, sustainable agriculture and solution development.

6. SUCCESS STORIES

- Fifteen ambitious youth are now undergoing training at the MIRRA Summer School of Sustainability in Azraq. The training of the first module on lobbying/advocacy and training of trainers was initiated by Mr. Omar Shoushan, the President of Jordan Environmental Union (JEU) in Amman and president of Rural Family Society (RFS) in Azraq. Mr. Omar interactively covered the following topics.
 - Gaining support for environmental issues.
 - The role of lobbying in local decision-making.
 - The role of lobbying in environmental human rights.
 - Using media and social media to gain support.



7. CHALLENGES, LESSONS LEARNED AND BEST PRACTICES RELATED TO YOUR PROJECT

a) Identify the specific challenges related to any of the activities in overall implementation:
<ul style="list-style-type: none"> - Weather conditions. - In Jordan, Panicum Maximum is considered a new crop, so there is lack of research papers on the use of such forage crop in Jordan.
b) If relevant, identify lessons learned and/or recommendations for future action:
c) Identify unexpected results (positive or negative) if any:
d) If relevant, what activity needed to be changed? What results or indicators needed to be modified?
e) Describe any delays or milestone deviations in the implementation calendar:
<ul style="list-style-type: none"> - Delay in the progress of the kick-off meeting and the building capacity programs due to the delay in getting the Jordanian Ministries' approval and the first money advance.

8. BUDGET UTILIZED FOR THE PERIOD

Line item	Activity/Component Budget Breakdown, as per Implementation Plan	Amount Agreed to in Implementation Plan	Utilized this Period	Cumulative Utilized
		US\$	US\$	US\$
Domestic Travel	Traveling	6000	147.118	147.118
Equipment	Irrigation Systems	10000	11498.022	11498.022
	Magnetic Devices	3600	1906.779	1906.779
	Others	0	0	0
Supplies	Seeds (bags)	120	0	0
	Seeds (Trays)	500	607.344	607.344
	Others	0	0	0
Tests	Water	1000	0	0
	Soil	1650	884.745	884.745
	Others	0	0	0



Capacity Building, Training & Dissemination	Field Days	3600	0	0
	Youth Training Days	6000	0	0
	Videograph	1500	0	0
	Youth Awards	2250	0	0
	Kick-off Meetings	500	0	0
	Closing Ceremony	2000	0	0
	Manuals, Booklets, fact sheets to be produced	1100	423.531	423.531
Personnel	Staff salaries and social security	3200	0	0
	9 months (355.5 per month total cost)	0	0	0
Direct Costs	Office rent (~7,000 US/year)	3600	2500	2500
	Office Utilities (electricity, water, Internet, and phone bills (~3400 US/year)	1155	367.466	367.466
	Office other running costs such as: guard, cleaning, sanitary supplies and maintenance (~4,000 US/year)	2000	820.101	820.101
Total Programmatic Budget		49775	19155.106	19155.106
In-Kind Contributions and Funding Leveraging				
	Leveraged this period		Cumulative since project inception	
	US\$	Other	US\$	Other
Amount of funding/other type of contribution leveraged from the Government of Jordan	N.A	N.A	N.A	N.A
Amount of funding/other type of contribution from non-Governmental sources	N.A	N.A	N.A	N.A