



Methods for Irrigation and Agriculture
لتطوير أساليب الري والزراعة

NEWSLETTER

JUNE 2026 | ISSUE NO.38



TABLE OF CONTENTS

1

PAGE 02

RESEARCH AND DEVELOPMENT



Listening First: MIRRA Meets Farmers in Azraq to Shape the Future of AgriTech Adoption

2

PAGE 04

FACT SHEET



Lentil: Building Climate Resilience through Underutilized Crops

3

PAGE 06

RESEARCH AND DEVELOPMENT



From Soil Data to Smarter Farming: MIRRA and Doktor Empower Farmers through Digital Agriculture

Listening First: MIRRA Meets Farmers in Azraq to Shape the Future of AgriTech Adoption

As part of the GAIN Project and the establishment of the AgriTech Field Lab, the MIRRA team recently conducted a field visit to Azraq, where they met with local farmers to better understand the realities of agricultural production, the challenges they face, and their willingness to adopt innovative agricultural technologies.



Picture 1: From right to left: Ammar from MIRRA, Mohammed Khataybeh who owned the farm, Jean-Eudes from GIZ, and Waleed from German Jordanian University, taking a tour of the farm while observing sustainable and climate resilient agriculture.

The visit forms part of MIRRA's ongoing Farmers' Needs Assessment, a key activity designed to ensure that future AgriTech solutions are developed based on field conditions and the priorities of farmers themselves. Rather than assuming what technologies are needed, MIRRA is engaging directly with farming communities to place their voices at the center of the process.

During the visit, the team conducted structured interviews with farmers using the project's assessment tools, covering a wide range of topics related to farm management, irrigation practices, production systems, technology adoption, and post-harvest challenges. Discussions also explored farmers' current use of agricultural technologies, the effectiveness of these solutions in meeting their needs, and the practical barriers limiting wider adoption.

Picture 2: Farmers discussing agricultural realities in Azraq and sharing their experiences.





Picture 3: Mohammed Al-Fays discussing subsurface irrigation, which is a highly efficient method that delivers water and nutrients directly to the plants roots.

Particular attention was given to understanding farmers' willingness to invest in AgriTech solutions, the factors influencing their investment decisions, and the types of technical and support services required to increase confidence in adopting new technologies. Farmers shared valuable insights into issues such as water management, irrigation efficiency, production costs, labor availability, market access, post-harvest losses, and the need for reliable technical support.

The discussions highlighted that successful technology adoption goes beyond introducing new equipment. Farmers emphasized the importance of practical, affordable, and easy-to-use solutions that respond directly to their day-to-day challenges and deliver measurable economic benefits. Building trust through demonstration, technical guidance, and continuous follow-up was also identified as a critical factor in encouraging wider adoption.

Picture 4: Farmers participating in the discussion while filling out the GIZ assessment survey.



The information collected during the Azraq visit will contribute to the comprehensive needs assessment being conducted across the project's target regions. The findings will guide the design, validation, and demonstration of AgriTech solutions within the AgriTech Field Lab, helping create technologies and services that respond to real agricultural needs while supporting the sustainable development of Jordan's farming sector.

Through initiatives such as these, MIRRA continues to promote farmer-centered innovation, ensuring that agricultural technologies are developed not only for farmers, but together with them.

FACT SHEET

Lentil: Building Climate Resilience through Underutilized Crops

Picture 1: Lentil seedlings at the early growth stage at the MIRRA Climate-Smart Farm, Jordan (8 February 2026).



Overview

Lentil (*Lens culinaris Medik.*) is one of the neglected and underutilized crops promoted by the NUSTALGIC project due to its high nutritional value, low water requirements, and positive impact on soil health. Traditionally cultivated across the Mediterranean region, lentil is well adapted to dryland farming systems and can play an important role in improving the resilience of agricultural systems facing increasing water scarcity and climate change

Why Lentil Matters

Lentil is considered one of the most nutritious legume crops and an affordable source of plant-based protein.

Nutritional Benefits

- High protein content (22–28%)
- Rich in dietary fiber
- Excellent source of iron and folate
- Low fat content
- Suitable for healthy and balanced diets

Food Security Value

- Provides affordable protein for rural communities
- Can be stored for long periods without significant quality loss
- Supports diversification of local food systems

Quick Facts



Crop type

Legume



Water needs

Low-moderate



Main Advantage

Nitrogen fixation



Growing Season

90–130 days



Farming system

Rainfed Agriculture

Environmental Benefits

Improving Soil Fertility

Lentil naturally fixes atmospheric nitrogen through symbiosis with soil bacteria, reducing the need for synthetic fertilizers and improving soil fertility for subsequent crops.



Efficient Water Use

Lentil can be grown successfully under rainfed conditions and requires less water than many other protein-producing crops.



Climate Change Adaptation

- Tolerant to drought conditions
- Suitable for marginal lands
- Supports sustainable low-input farming systems



Lentil in the NUSTALGIC Project

Within the NUSTALGIC framework, lentil is promoted as a strategic crop for:

Diversifying agricultural systems in dry and semi-arid regions.

Reducing dependence on synthetic fertilizers through biological nitrogen fixation.

Supporting the development of innovative food products based on underutilized crops.

Improving soil health through crop rotations with cereals such as barley.

Strengthening climate resilience and sustainable farming practices.

The integration of lentil into crop rotations contributes to better soil fertility, improved water-use efficiency, and increased sustainability of farming systems.

Key Message

Lentil is more than a traditional crop—it is a climate-smart solution for sustainable agriculture. Through its nutritional value, ability to improve soil fertility, and adaptation to water-limited environments, lentil contributes to building resilient farming systems and supports the NUSTALGIC vision for a more sustainable Mediterranean agriculture.



Picture 2: Continued growth and development of the lentil crop at the MIRRA Climate-Smart Farm, Jordan (15 March 2026).

From Soil Data to Smarter Farming: MIRRA and Doktor Empower Farmers through Digital Agriculture

Picture 1: Farmers and stakeholders participating in the technical training session, exchanging field experiences and discussing practical solutions for improving irrigation and farm management.



As part of the Water Replenishment Program, MIRRA, in collaboration with Doktor,

successfully organized the second technical training workshop at the MIRRA Climate-Smart Farm in the Northern Jordan Valley. The workshop brought together local farmers, technical experts, and representatives from the Jordan Valley Authority to strengthen farmers' capacity in adopting climate-smart agricultural practices and digital farming technologies.

Picture 2: Eng. Ammar Namarneh from MIRRA delivering the agricultural practices training session, focusing on farm water management, agrochemical use, and practical challenges faced by farmers.



The training focused on three main themes: agricultural best management practices, efficient fertigation and interpretation of laboratory soil analysis results, and the application of digital technologies to improve irrigation and farm management. Throughout the workshop, farmers openly discussed the main challenges they face in their fields, including irrigation management, fertilizer application, and maintaining crop productivity under increasing water scarcity. These discussions provided an opportunity for technical experts to address practical concerns and recommend field-based solutions tailored to local conditions.



Picture 3: Eng. Fadi Abu Sahyoun, Director of the Northern Water Directorate / Jordan Valley Authority, discussing irrigation water sector challenges and ongoing efforts to support farmers in the Jordan Valley.

“

A special contribution was made by **Eng. Fadi Abu Sahyoun**, *Director of the Northern Water Directorate at the Jordan Valley Authority*, who presented the current challenges facing the irrigation water sector in Jordan. He highlighted the ongoing efforts of the Directorate to improve water management across the Jordan Valley and reaffirmed its commitment to supporting farmers through sustainable water management initiatives and continuous technical cooperation.

One of the workshop's key activities was reviewing the laboratory soil analysis conducted for participating farmers. Rather than simply providing laboratory reports, MIRRA and Doktor experts explained the results and discussed how soil characteristics directly influence irrigation scheduling, fertilizer efficiency, and crop performance. Based on these findings, and in combination with field data collected through the installed Filliz soil moisture sensors, customized fertilization programs were developed for each participating farm. These recommendations are designed to improve nutrient use efficiency, reduce unnecessary fertilizer applications, optimize irrigation practices, and ultimately increase farm productivity while conserving natural resources.

The workshop also introduced farmers to Doktor's precision agriculture technologies through a live field demonstration. The Doktor team showcased the **Soil Scanner**, an innovative digital solution capable of providing rapid, on-site assessments of key soil properties and nutrient indicators, allowing farmers to make faster and more informed fertilization decisions without waiting for conventional laboratory turnaround times. Participants witnessed how digital soil intelligence can support more accurate nutrient management and improve overall farm productivity.

Picture 4: Doktor team presenting the Soil Scanner technology and demonstrating its role in supporting rapid soil assessment and data-driven fertilization decisions.



An important part of the workshop was the introduction of the Doktor mobile application. Farmers learned how the platform combines weather information, crop monitoring, irrigation planning, activity records, and agronomic recommendations into a single decision-support tool. The team emphasized that farmers can benefit from many of the application's features even without installing field sensors, while those equipped with devices receive additional real-time insights from their farms. During the workshop, the application was installed on participating farmers' mobile phones, allowing them to immediately begin using the platform in their daily farm management activities.

The workshop reflects MIRRA's commitment to promoting climate-smart agriculture by connecting scientific knowledge, digital innovation, and practical field experience. Through partnerships with organizations such as Doktor and collaboration with national institutions, MIRRA

continues to support Jordanian farmers in adopting sustainable agricultural practices that improve water productivity, optimize resource use, and strengthen resilience to climate change.

Picture 5: MIRRA and Doktor teams after the successful training session, celebrating a productive day of knowledge exchange and collaboration to support sustainable water management and precision agriculture.





 <https://mirra-jo.org>

 info@mirra-jo.org

 941454 Amman 11194 Jordan

 [Methods for Irrigation and Agriculture - MIRRA](#)

 7 Abdelaziz Al-Thaalibi Street, Shmeisani, Amman, Jordan.

MIRRA 
Methods for Irrigation and Agriculture
لتطوير أساليب الري والزراعة