



Methods for Irrigation and Agriculture
لتطوير أساليب الري والزراعة

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Listening to Innovation: Farmer Voices Shape the Future of AgriTech in the Jordan Valley



Picture 1: Project partners and the host farm representative during the field assessment mission in South Shouneh. From left to right: Eng. Waleed (GJU), Eng. Mohammed (GIZ), Abo Rashid (Farm Manager), Eng. Ammar (MIRRA), Jean (GIZ).

As part of the GAIN Project and MIRRA's ongoing Farmers' Needs Assessment, the project team continued its field engagement across the Jordan Valley through two additional assessment missions targeting different agricultural production systems. The visits focused on protected vegetable cultivation in Deir Alla and commercial date palm production in South Shouneh, providing valuable insights into the technological needs of two strategically important sectors.

Rather than promoting predefined technologies, the visits were designed to listen first. Through structured discussions and on-site observations, MIRRA worked closely with farmers to understand the practical challenges they face, identify opportunities where innovation can create real value, and ensure that future AgriTech solutions respond to genuine field needs.

Protected Agriculture: Precision Farming Begins with Trust

The first visit took place at the greenhouse farm of Mr. Naeem Abu Doush, a highly experienced producer exporting premium-quality peppers to European markets through the Jordanian Palestinian Company. ***“Operating at such high market standards requires exceptional precision in irrigation, fertilization, crop monitoring, and quality management”.***

Despite operating one of the region's advanced commercial farms, Abu Doush emphasized that significant opportunities still exist to modernize greenhouse management. His vision is to gradually ***transform conventional greenhouses into smart production systems capable of automating irrigation, fertigation, and environmental control***, allowing farmers to improve efficiency while reducing the burden of daily management.



Picture 2: An interactive dialogue where Naeem Abu Doush shared practical experiences and discussed the technologies that could make the greatest difference to their daily operations.

Picture 3: Examining pepper quality and discussing production practices during the field visit to the greenhouse farm in Deir Alla.



Post-harvest innovation was another key topic raised during the discussion. Abu Doush highlighted the need for practical solutions that add value to produce that cannot be exported or marketed fresh. Cooperative processing facilities capable of transforming surplus peppers into products such as pepper paste or other processed foods could significantly reduce losses while creating additional income streams for farmers.

While acknowledging the potential of modern agricultural technologies, he also pointed to one of the sector's biggest barriers: affordability. Large-scale commercial farms require integrated technological solutions, yet the high investment cost and the limited availability of locally manufactured systems remain major obstacles to wider adoption.

Interestingly, the discussion extended beyond technology itself to the issue of trust between farmers and technology providers. Although tools such as soil moisture sensors could improve irrigation management, many farmers remain hesitant because suppliers often focus on selling equipment without providing sufficient technical guidance, training, or long-term support. Farmers are looking for trusted partners—not simply equipment vendors.

Perhaps the most memorable moment of the visit came when Abu Doush described his relationship with his crops:

"I spend an hour every day inside one of my greenhouses. I try to feel the plants, listen to what they are telling me, understand their behavior, and identify what they need."

His words perfectly illustrate both the remarkable expertise farmers develop through years of experience and the opportunity for AgriTech to complement—not replace—that knowledge. Technologies capable of accurately monitoring plant health and identifying crop needs could fundamentally transform greenhouse management while preserving the farmer's central role in decision-making.



Date Palm Production: Technology Beyond the Field



Picture 4: Field observations of date palm fruit development as part of discussions on production practices, quality management, and future technology opportunities.

The second assessment mission was conducted at the date palm farm of Mr. Ra'fat Al-Kaswani in South Shouneh, where the team met with the farm manager, Abu Rashid, to explore the technological priorities of Jordan's growing date production sector.

Unlike greenhouse production, the date palm industry presents different operational challenges, with labor-intensive activities representing one of the most significant constraints. Abu Rashid explained that **introducing greater levels of mechanization** into production operations could substantially reduce labor requirements while improving operational efficiency.

The discussion also highlighted the critical importance of **post-harvest technologies**. Cooling systems, sorting, grading, and quality management technologies were identified as essential investments capable of improving product quality, increasing market value, and opening access to new domestic and international markets.

Technology for monitoring pests, diseases, and insect populations was another priority identified during the visit, together with smart irrigation solutions based on soil moisture sensing. Such technologies would support more efficient water management while helping farmers optimize irrigation scheduling under increasingly challenging climatic conditions.

Building Innovation Around Farmers

Although the two farms operate in very different production systems, both visits delivered a common message: farmers are ready to embrace innovation when technologies solve real problems, demonstrate clear economic benefits, and are supported by trusted technical guidance.

The information collected during these assessment missions will directly contribute to the design of MIRRA's AgriTech Field Lab and support the development, validation, and demonstration of technologies that are technically sound, economically viable, and genuinely responsive to farmers' priorities.

By placing farmers at the center of the innovation process, MIRRA continues to strengthen the bridge between research, technology developers, and the farming community—ensuring that future AgriTech solutions are developed with farmers, not only for farmers.



Picture 5: An in-depth discussion with the farm management team to better understand operational challenges, technology needs, and opportunities for improving the date palm production value chain.

MIRRA Participates in the NUSTALGIC Annual Meeting of the PRIMA-Funded Project in Rabat, Morocco, Hosted by ICARDA

Picture 1: Consortium partners gathered during the NUSTALGIC Annual Meeting to review project progress, exchange knowledge, and coordinate the next phase of implementation.



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participated in the NUSTALGIC Annual Meeting, held in Rabat, Morocco, from 30 June to 2 July 2026. MIRRA joined project partners from across the Mediterranean to review progress during the first year of the project, strengthen regional collaboration, and contribute to planning the next phase of implementation.



Picture 2: Rafaela Geraldo, Researcher at Universidade Católica Portuguesa, presenting updates and insights during one of the technical sessions of the NUSTALGIC Annual Meeting.



Picture 3: Alexandros Kandarakis, Head of Communications at Global Water Partnership-Mediterranean (GWP-Med), addressing project partners during the annual meeting and highlighting communication and stakeholder engagement activities.

Over the course of the three-day meeting, consortium partners reviewed achievements across the project's different work packages, shared experiences from the different demonstration sites, and discussed technical, scientific, and implementation updates. The meeting provided an important opportunity to exchange knowledge, evaluate progress, and align future activities that support climate-resilient agriculture, sustainable water management, and the promotion of neglected and underutilized species (NUS) across the Mediterranean region.



Picture 4: A chickpea Mechanical demonstration at the Merchouch Experimental Station.

Beyond the technical sessions, the programme included a series of field visits that enabled participants to observe the project's activities on the ground. The delegation visited the ICARDA's Merchouch Experimental Station, where they explored water harvesting systems, demonstration plots, agricultural machinery, and field trials showcasing innovative practices that contribute to improving the resilience of farming systems under changing climatic conditions. Participants also met with local farmers to exchange experiences and discuss practical approaches for strengthening sustainable agricultural production.

Picture 5: The ICARDA logo displayed at the Merchouch Experimental Station, one of the key locations visited during the field programme of the NUSTALGIC Annual Meeting.



The meeting also featured a Recipe Day, bringing together local women's cooperatives to prepare traditional dishes using neglected and underutilized crops. The event highlighted how these crops can contribute to healthier diets, preserve culinary heritage, and create new market opportunities while encouraging greater consumer awareness of sustainable food systems.



Picture 6: Traditional Moroccan couscous prepared during the Recipe Day,

As an active partner in the NUSTALGIC consortium, MIRRA continues to support the project's implementation in Jordan through the promotion of innovative water harvesting practices, sustainable agricultural solutions, stakeholder engagement, and knowledge exchange. Participation in the annual meeting reaffirmed MIRRA's commitment to working with regional partners to advance practical, climate-smart solutions that strengthen the resilience of farming communities across the Mediterranean.

Second Recipe Day Inspires Youth to Rediscover the Neglected and Underutilized Barley Crop

MIRRA welcomed adolescents and staff from SOS Children's Villages for a NUSTALGIC Recipe Day at the Royal Academy of Culinary Arts, led by Executive Chef Yousef Iqleim. The event aimed to bring neglected and underutilized species (NUS), including barley, lentils, and chickpeas, back onto Jordanian tables. The Recipe Day highlighted how disconnected many young people in Jordan have become from the crops their grandparents grew up eating. For many participants barley was an unfamiliar ingredient.



Picture 1: On the left is a group photo with chefs (in white), serving staff (in gray), the supervisor of the chefs and serving staff, and MIRRA staff. On the right is a group photo with children and staff from the SOS Children's Villages in Amman and MIRRA staff.

The day started with a welcome session led by Eng. Sewar Saleh from MIRRA, who introduced the activities planned for the event. Participants also received a pamphlet outlining the goals of the NUSTALGIC project, the recipes they would prepare, and where to learn more about the project.

The event continued with an interactive discussion aimed at raising awareness among adolescents about traditional crops and their nutritional value. The discussion revealed just how unfamiliar some participants were with these ingredients. Questions such as, "What is barley?" and "Is barley the same as wheat?" highlighted the need to increase awareness of traditional crops among younger generations.



Picture 2: Eng. Sewar Saleh from MIRRA leading a discussion and teaching adolescents about NUS crops and their nutritional value.



Picture 3: Attendees enjoying the event and reflecting on cooking and gender roles.

MIRRA also invited participants to reflect on their perceptions of cooking and gender roles. Many participants expressed the view that cooking is an important skill that everyone should learn, regardless of gender.

The day concluded with participants sharing their enjoyment of the event and expressing their appreciation for the opportunity to learn about traditional crops and prepare new dishes using locally relevant ingredients. Many left with a greater appreciation for the value of neglected and underutilized crops and their potential to become part of everyday meals once again.



Picture 4: The dishes of the evening showcased how to use barley, lentils, and chickpeas. The four-course meal included a salad, soup, lamb, and a dessert.



The heart of the event came next, as participants explored dishes featuring barley, lentils, and chickpeas. These crops were once staples of the Mediterranean diet but have become increasingly overlooked in recent decades. The cooking demonstration featured four courses: a spinach salad with chickpeas, mushroom soup with barley, lamb shank served over a bed of lentils, and, for dessert, ice cream and a small cake made with barley.



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