Report of the Training Courses on

Training of trainers (TOT)

Efficient Water Use Techniques for Agricultural in Jordan

Under the Project

Promoting Sustainable Irrigation Management and non-conventional water use in the Mediterranean (PROSIM)

Prepend by

Eng: Asmahan Fareed Hattar

Introduction:

The regions of Alkaramah and Alramah have been facing major challenges related to water scarcity and agricultural productivity. These challenges resulted from high water salinity, inefficient irrigation systems bad irrigation practices. High water salinity and inefficient irrigation systems have deteriorated the freshwater sources and created difficulties in meeting domestic and agricultural water demands. As a result, the PROSIM project was implemented in the Jordan Valley Area to address these challenges and provide sustainable solutions.

The PROSIM project aimed to focus on implementing advanced technological interventions in order to cope with water scarcity issues and improve agricultural productivity in the Alkaramah and Alramah regions. One of the key interventions of the PROSIM project was the installation of two reverse osmosis desalination plants in Balqa, Jordan. The installed desalination plants generate around 10 m^3/h and are powered by photovoltaic panels. The installation of desalination plants aims to reduce water salinity, prevent soil degradation, and provide sustainable water for agricultural irrigation to enhance productivity. Additionally, the PROSIM project included the implementation of nano-filtration and wastewater filtration systems, along with irrigation and control equipment. These technological interventions were implemented to enhance water use efficiency and improve the quality of agricultural products. The PROSIM project in Balqa,

Jordan was chosen due to its suitability as an arid area with limited rainfall but abundant solar radiation and brackish groundwater. Furthermore, the PROSIM project in Balqa, Jordan aligns with larger initiatives and projects that aim to address water scarcity and promote sustainable agricultural practices.

The collaboration between PROSIM and the Agricultural Research and Consulting Cooperative Association aimed to address the pressing challenges of water scarcity in Jordan by providing a comprehensive Training of Trainers program TOT on Effective Water Use Techniques for Agriculture in Jordan, especially in the Al Balqa Governorate. Water scarcity is a hot topic in Jordan, as the country's freshwater resources are limited and the demand is high, particularly in the agricultural sector.

These 3 days training program aimed to equip trainers with the advanced knowledge and skills to effectively manage water resources in agricultural practices, allowing for optimal water use and conservation while maximizing agricultural productivity. Each training day comprises four sessions, each lasting approximately 60 minutes. This training is delivered over the course of three days, starting with the theoretical portion followed by hands-on practical training. The training is conducted twice every three days and accommodates up to 25 participants in each training."

By merging of theoretical and practical components, the three-day Training of Trainers program provided a comprehensive understanding of effective water use techniques.

Participants have gained deep insights into the current challenges and trends in water management in Jordan, as well as the importance of water productivity in agricultural environments. Additionally, the training will cover topics such as advanced irrigation techniques, water governorate, and the use of advanced technology to utilize freshwater from non-conventional water resources

Training course implementation: -

Training objectives:

- Provide participants with a comprehensive understanding of Reverse Osmosis (RO), Nano-filtration (NF) desalination, and CDI captive deionized desalination principles, design, operation, and applications.
- Foster a deep knowledge of Decision Support Systems for water mixing, including their principles, technologies, and practical applications.
- Introduce best management practices for irrigation to enhance water use efficiency in agriculture.
- Explore various interventions for irrigation efficiency, such as Evaporation pans for ET0 calculation, Moisture sensors, Irrigation Systems, and Meteorological stations.
- Blend theoretical knowledge with practical exercises to ensure participants gain hands-on skills and insights into these critical water treatment technologies.

Training program: -

In consultation with the various resource persons and taking the initial draft training outline as the basis, AGRECO developed the training Program for the training course. Annex (1)

- Desalination and Water treatment is a critical process in supplying of clean and safe water for various applications such as domestic, industrial processes, and agricultural activities. In this technical plan of the training, we focused on three specific areas of water treatment: reverse osmosis, nanofiltration destination, and captive deionized system, all followed by a decision support system for water mixing for the Water Governorate.
- Reverse Osmosis and Nano-filtration Destination: Reverse osmosis RO and nano-filtration NF are membrane-based filtration processes that are widely used for water purification. These processes are particularly effective for treating daily drinking water, seawater and brackish water desalination, and producing high-purity industrial water. The following methodologies were implemented:
- Training Materials: Based on the training TOR, comprehensive training materials that cover the theoretical and practical aspects of reverse osmosis and nanofiltration are developed. These materials included information on the principles of reverse osmosis, nanofiltration and CDI, the operation and maintenance of membrane

systems, troubleshooting common issues, and best practices for maximizing system performance.

- The training also included both theoretical sessions and hands-on practical exercises. During the theoretical sessions, trainers were provided with detailed explanations of the concepts and principles behind reverse osmosis and nanofiltration and CDI
- -Case studies and real-life examples were presented to illustrate the application of these technologies in different settings.
- During the hands-on practical sessions, participants were able to have the basic knowledge to operate and maintain reverse osmosis and nanofiltration systems. They were guided through each step of the process, from pre-treatment to membrane cleaning and system troubleshooting.

Each Training Day consist of four sessions, each approximately 60 minutes in length. The first two sessions were held on the first day, starting at 10:00 am and ending at 2:30 pm. During the training day, there was a break for participants to refresh and recharge. The second day was also consisted of two sessions, again starting at 10:00 am and ending at 2:30 pm, with a break in between. Theoretical content covered during the first two days sessions, while the last day was focused on practical training in the filed were the interventions where implemented.

Training methodology

This training program is composed of 3 days at which theoretical and practical parts are conducted in parallel lines.

At the end of training all trainees will be given a certificate of participation issued by National Agricultural Research Center (NARC)

Work Methodology:

The methodology promotes active engagement, practical application, and collaborative learning, ensuring participants are well-equipped with both theoretical understanding and practical skills .it involves a tailored approach to achieve optimal learning outcomes:

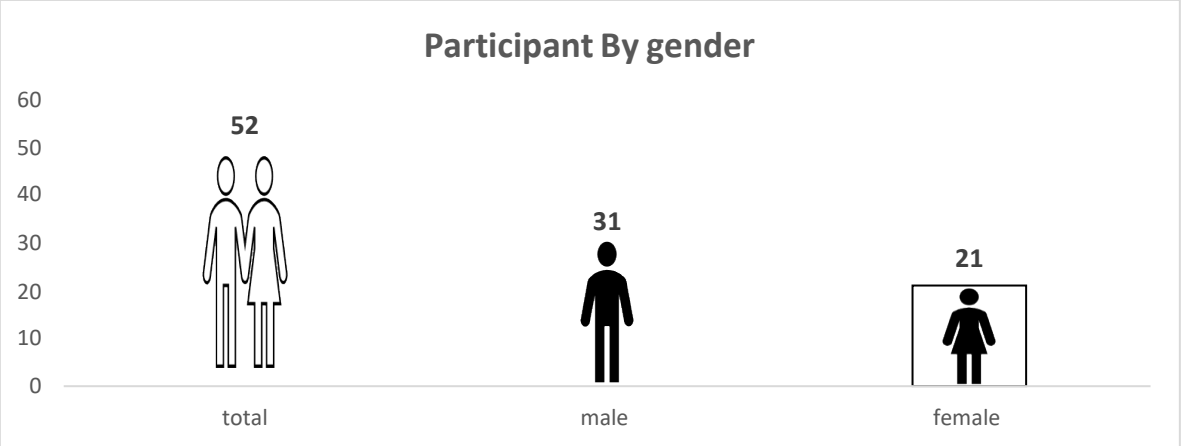
- **Assessment of Existing Knowledge:** Initial assessments gauge participants' understanding of **innovative solutions**. Pre-assessments determine knowledge levels, with post-evaluations measuring progress.
- **Tailored Content and Expert Delivery:** Training content and methods are aligned with objectives, audience, and available resources. Senior-training leaders and specialized team members will guide each topic, supported by their CVs.
- **Lectures:** Expert presentations on each topic to provide foundational knowledge

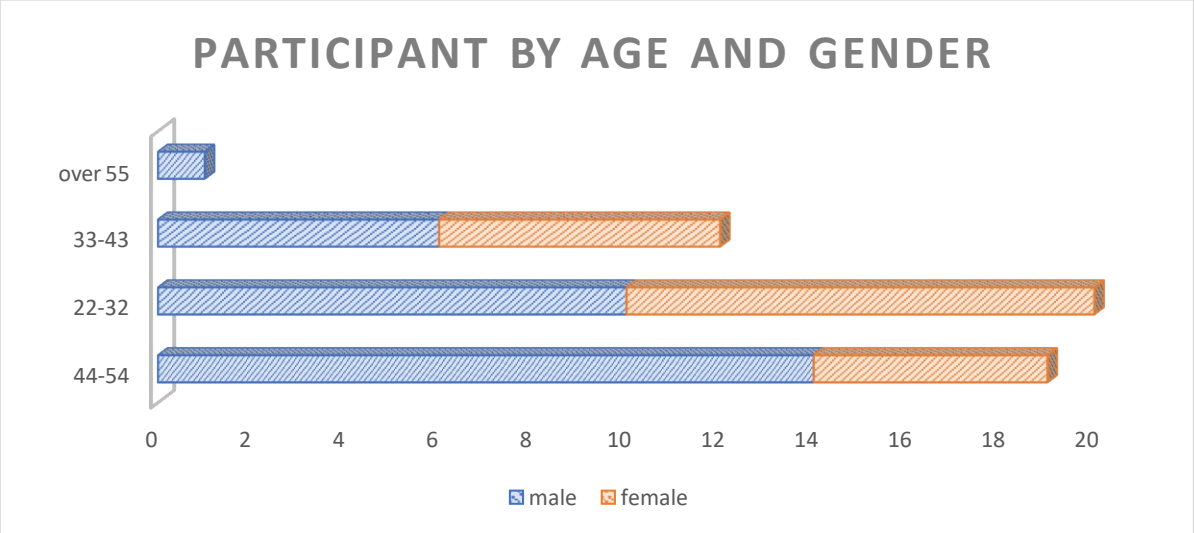
- **Visual Aids:** Visual materials like slides, images, and videos to enhance understanding.
- **Active Engagement:** discussions, and practical exercises ensure participants are actively involved in the learning process.
- **Team Collaboration:** Teamwork is encouraged to foster communication, teamwork, and collective problem-solving among participants.
- **Feedback and Guidance:** Regular constructive feedback and personalized guidance ensure ongoing progress and skill refinement.
- **Interactive Q&A Sessions:** Regular sessions facilitate open dialogue and address participants' queries.
- **Practical Day: Hands-on Workshops:** Participants engage in practical sessions to apply the concepts learned.
- **Field Visits:** Visits to areas where the discussed solutions are implemented to observe their real-world impact.

Training participant: -

52 *participants* from ministry of agriculture, Agricultural Credit Corporation, Agricultural Cooperative Corporation, University of Jordan, Hashemite University of Jordan, Al-

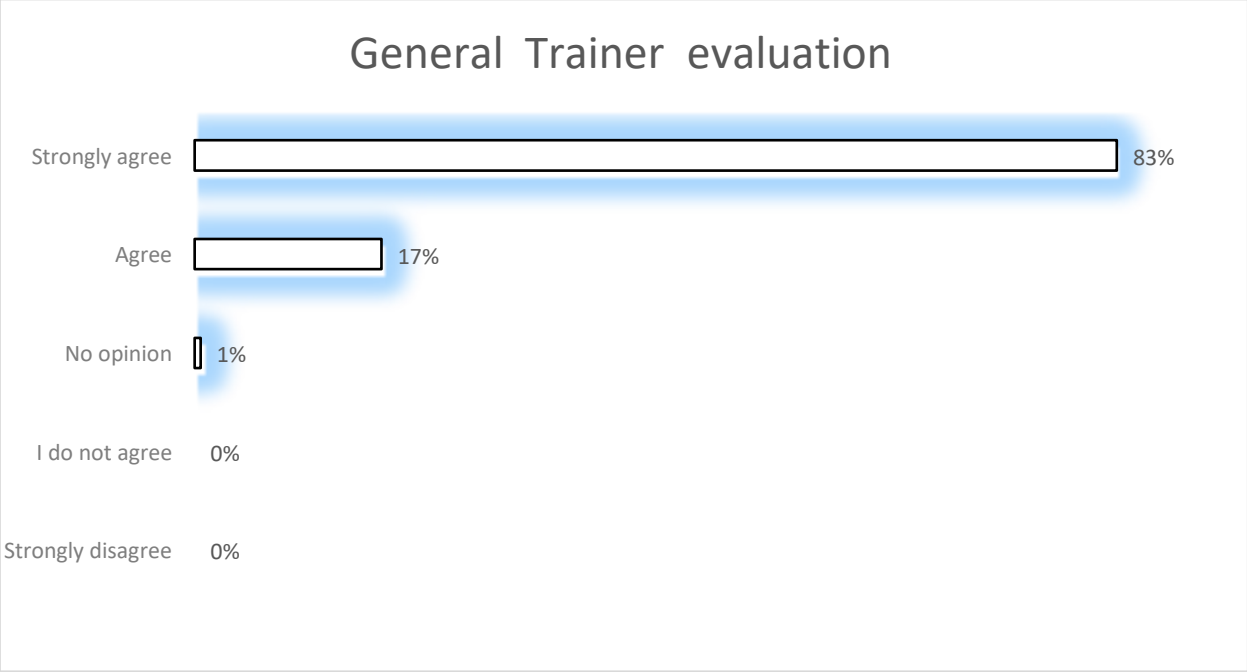
Balqa Applied University, Municipality of Irbid, Ajloun, and JerashJordan and agricultural engineers from private sector (attendance sheets) attached

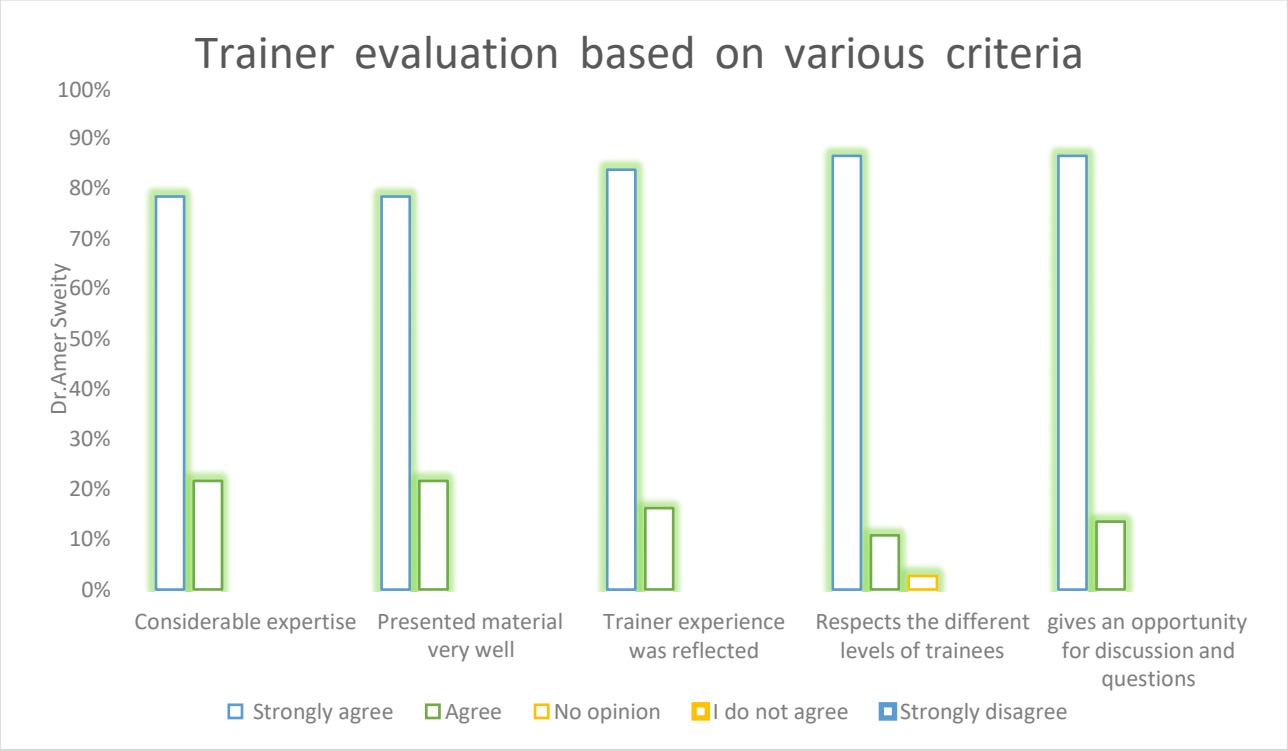




Resource persons / trainers: -

AGRECO mobilized the best available resource person and expert as trainer to conduct the training course. CV attached




Trainer evaluation based on various criteria
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dr.Amer Sweity
Considerable expertise
Presented material very well
Trainer experience was reflected
Respects the different levels of trainees
gives an opportunity for discussion and questions
Strongly agree
Agree
No opinion
I do not agree
Strongly disagree

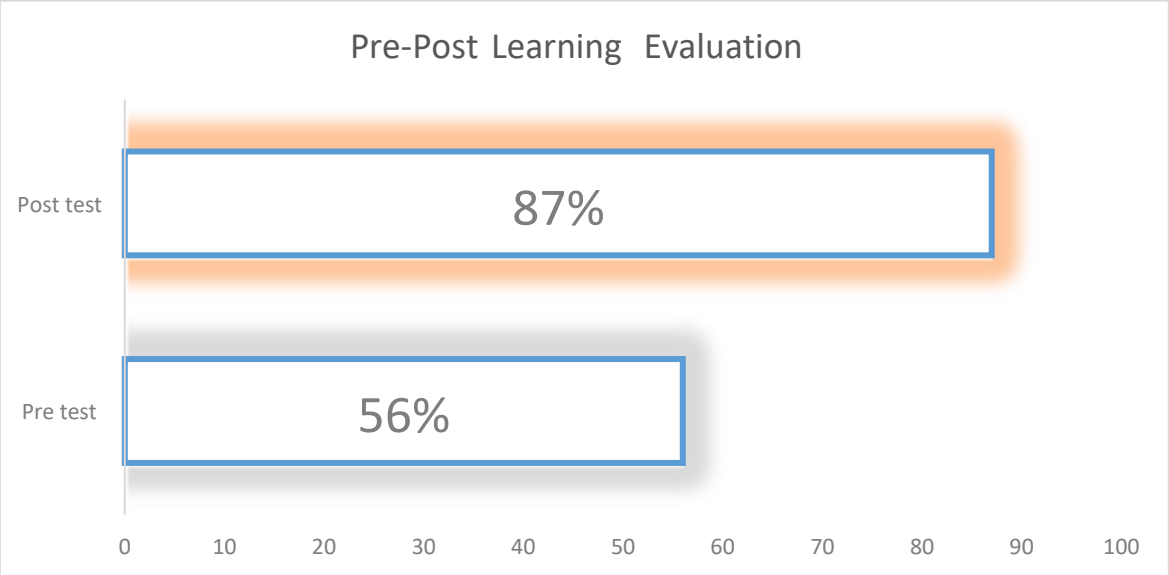
Training course Evaluations: -

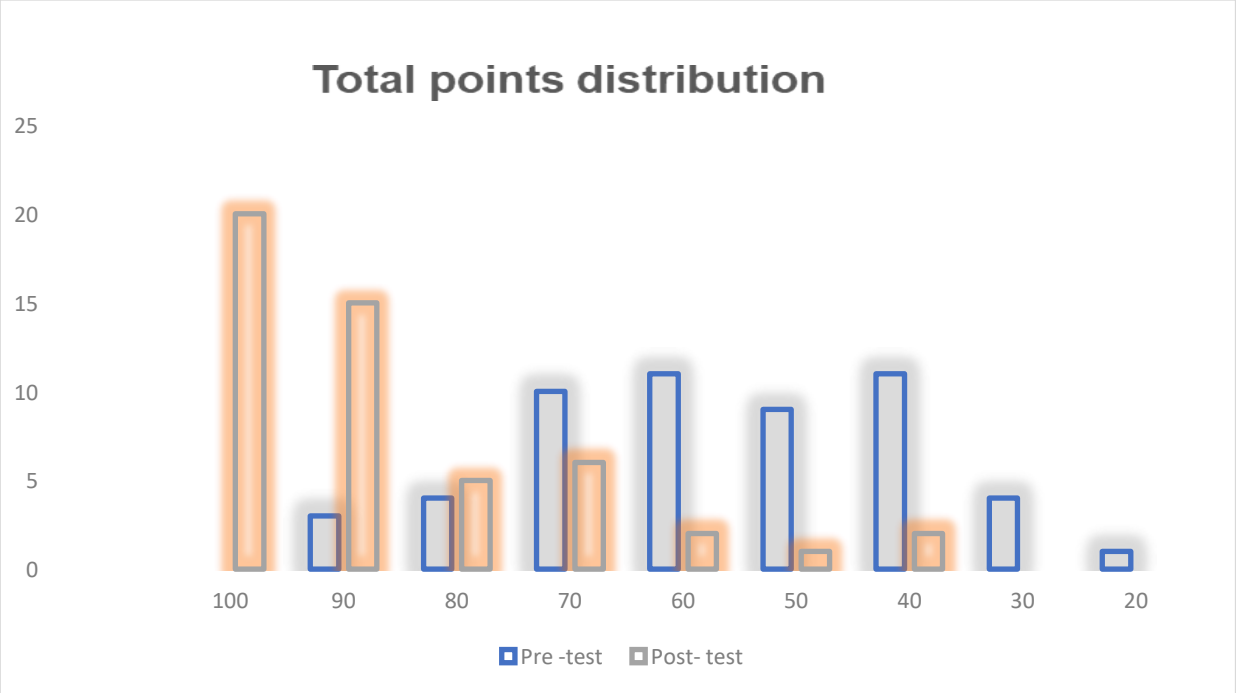
Written Pre- Post-test: -

A Google Forms test was done to determine the trainees' previous knowledge and post knowledge and skills gained from participating in the training course. The test consisted of (10) questions for the training course. Annex (2)

The evaluation shows the big knowledge and skills differences between Pre and post-test for the training topics which means that the participant attains a comprehensive understanding and proficiency in various areas, acquiring a broad range of valuable knowledge and skills. Through active engagement and dedicated participation, they developed a strong foundation and expertise that can be applied effectively in practical situations.

The evaluation results are summarized below in the following graphs.


Pre-Post Learning Evaluation
Post test
87%
Pre test
56%
0
10
20
30
40
50
60
70
80
90
100


Total points distribution
25
20
15
10
5
0
100
90
80
70
60
50
40
30
20
Pre -test
Post- test

Overall Evaluation: -

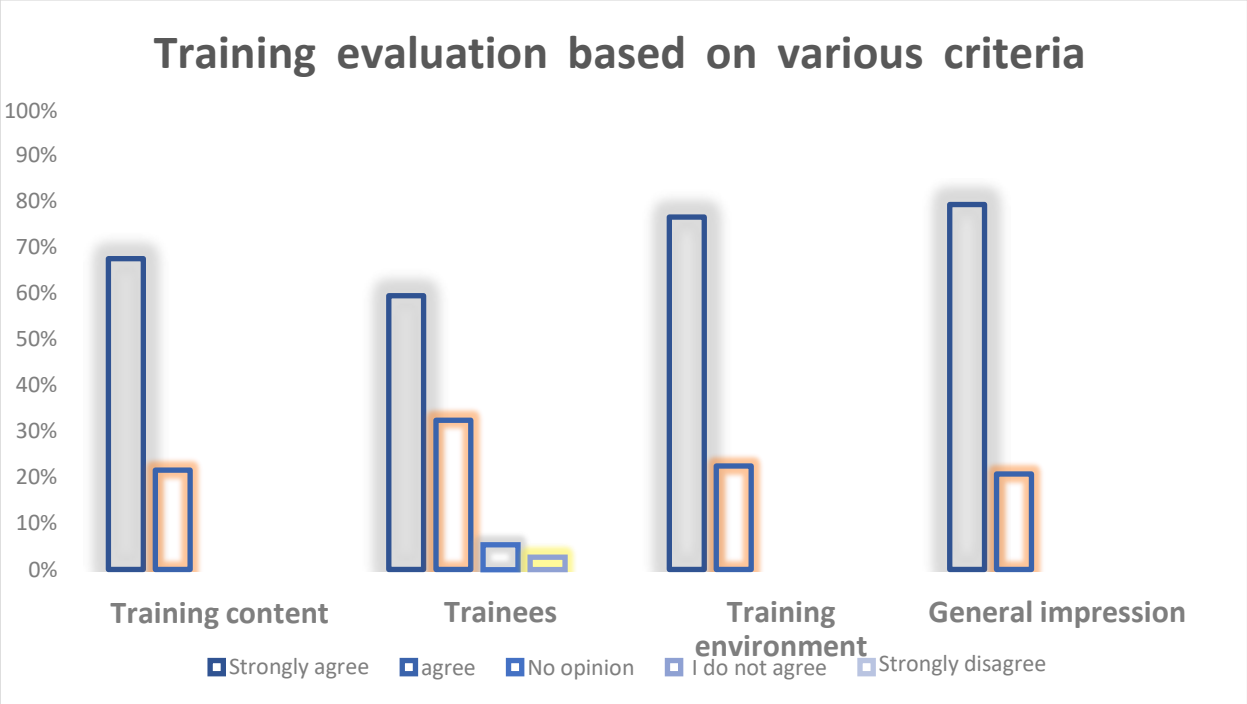
An evaluation session was conducted, before the farewell luncheon, A form was used for evaluating the training course by trainees. The Form contained questions that required "ticking" by trainees based on their judgment. Annex (3) filled form of the evaluation.

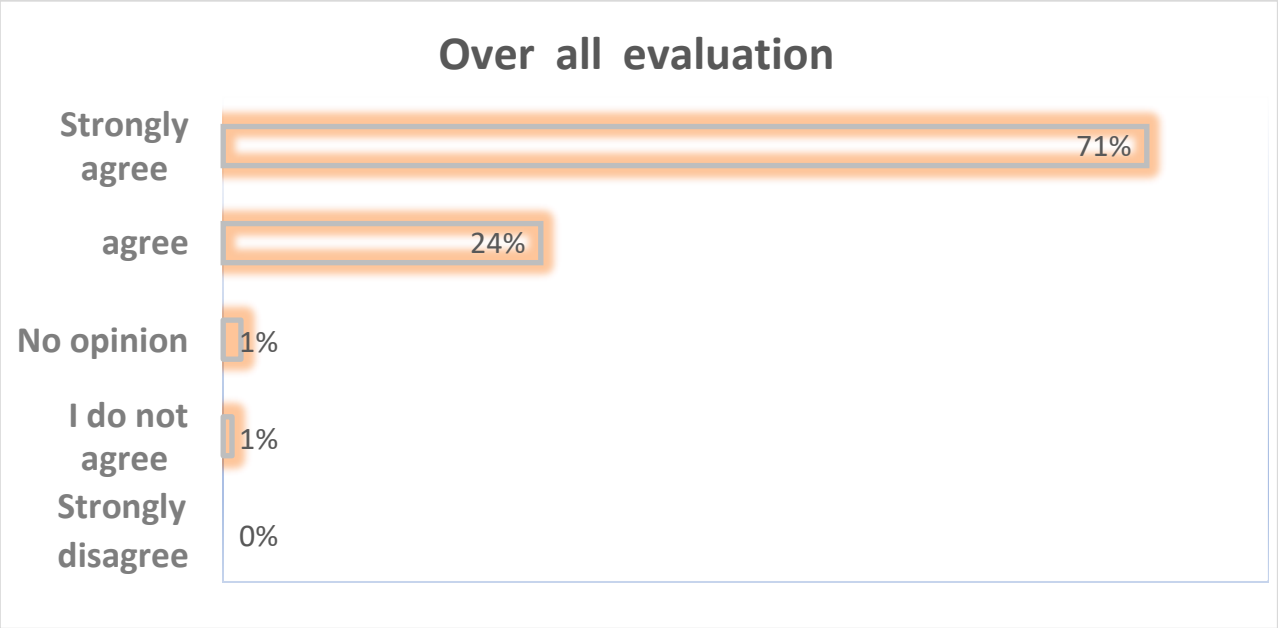
All the trainees participated in the evaluation and based on the results, we conclude that:

a) The trainees were strongly satisfied with the training course.

b) The training course was successfully conducted and delivered.

The trainees expressed a high level of satisfaction and contentment with the training course. Their feedback and evaluations consistently indicated strong approval and appreciation for the course content, methodologies, and overall learning experience. The trainees found the course to be valuable in terms of the knowledge and skills they gained, and they felt that it effectively met their expectations and needs. Their positive satisfaction serves as a testament to the quality and effectiveness of the training course.


Training evaluation based on various criteria
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Training content
Trainees
Training environment
General impression
Strongly agree
agree
No opinion
I do not agree
Strongly disagree



Training outcome:

The outcomes of the training program reflect the comprehensive knowledge, skills, and competencies that participants gain in the domains of desalination technologies and decision support systems for water mixing. These outcomes empower participants to drive operational excellence and sustainability in their respective roles.

Upon successful completion of the training program, participants achieve the following outcomes:

- Comprehensive Understanding of Desalination Technologies:

- Gain in-depth knowledge of Reverse Osmosis (RO), Nano-filtration (NF), and Capacitive Deionization (CDI) processes.
- Understand the principles, mechanisms, and operational aspects of each desalination technology.
- Desalination System Design and Operation:
- Acquire the skills to design and operate RO, NF, and CDI systems efficiently.
- Learn best practices for system configuration, membrane selection, and optimization of operational parameters.
- Ability to Integrate Decision Support Systems (DSS) for Water Mixing:
- Understand the concept of Decision Support Systems (DSS) and their role in water mixing optimization.
- Learn how to integrate DSS with water treatment processes for informed decision making.
- Practical Application of DSS and Simulation Tools:
- Gain hands-on experience in using simulation tools to optimize desalination processes and water mixing strategies.
- Apply acquired knowledge to real-world scenarios and enhance decision-making skills.
- Knowledge about plant water requirements
- knowledge about surface and subsurface drip irrigation systems and their importance role in saving water for maximum productivity
- knowledge about precision agriculture and the uses of sensors in modern agriculture

- the importance of metrological data for calculating plant water requirements

Closing and certificates

Closing was done in present of DR.Nizar Haddad and Dr. Luna Alhadidi from NARCand Eng. Sameer sulieman AGRECO President along with Eng . Asmahan hattar, from AGRECO

DR.Nizar Haddad thanked and congratulated all participants for their active attendance and success. He also thanked the trainers and staff members who made the training possible.

Certificates were distributed to all participants and took a group picture.

Annexes

Training Program

Annex(1)

" Efficient Water Use Techniques for Agricultural in Jordan"

Day	Training topic	Session
1	Fundamentals of RO and NF Desalination	Session 1: Introduction to Desalination • Principles of Reverse Osmosis (RO)
		Session 2: Nano-filtration (NF) Overview • Membrane Materials and Types
		Session 3: Pre-treatment and Feed-water Quality • System Design and Operation • Energy Efficiency and Recovery
		Session 4: Applications of RO and NF Desalination • Real-world applications of RO and NF: • Environmental and Economic Considerations • Future Trends and Innovations
2	Captive Deionized System for Desalination	Session 1: Fundamentals of Deionization • Introduction to Captive Deionized Systems • Components of Captive Deionized Systems • Ion Exchange Process
		Session 2: System Design and Configuration • Operation and Monitoring • Regeneration and Maintenance

		• Applications of Captive Deionized Systems • Advantages and Limitations • Case Studies • Environmental Considerations • Future Trends and Innovations • Fundamentals of Water Mixing and Decision Support Systems
		Session 3: Importance of Water Mixing • Basics of Decision Support Systems (DSS) • Data Collection and Monitoring • Water Mixing Technologies • Implementing Decision Support Systems for Water Mixing • Data Analysis and Interpretation
		Session 4: Modeling and Simulation • Designing Water Mixing Strategies • Integration of DSS in Water Mixing • Decision Making and Optimization • Environmental and Cost Considerations • Case Studies and Best Practices • Future Trends and Innovations
Day 3	Field visit to interventions in Alakrama and Alrama	○ Operating of RO system. ○ Operating of Nano-filtration system. ○ Field training on Evaporation pans. ○ Field training on adjusting irrigation networks. ○ Field training on dealing with sensors.

Annex(2)

Pre -Post Evaluation
Training of trainers (TOT)
" Efficient Water Use Techniques for Agricultural in Jordan"

ماذا تعني اختصارات RO , NF في التحلية؟

1. Nanofiltration وReverse Osmosis
2. Natural Filtration وRenewable Operation
3. Nano Filtration وRapid Osmosis
4. Non-Filtration وRemote Osmosis

ما هو الفرق الرئيسي بين غشاء RO , NF في عملية تحلية المياه؟

1. قطر المسام
2. الضغط الالزم
3. التكلفة
4. جميع ما ذكر

ما هي عملية Reverse Osmosis (RO) تحديداً؟

*

1. تصفية المواد العالقة في الماء
2. إزالة الأملاح والشوائب من المياه
3. تحلية المياه باستخدام الأشعة فوق البنفسجية
4. تحلية المياه باستخدام التسخين

ما هي ميزة استخدام تقنية Nanofiltration (NF) في تحلية المياه؟

1. انخفاض استهلاك الطاقة مقارنة بـRO
2. تنقية المياه بشكل أنضل منRO
3. تحلية المياه بسرعة أكبر منRO
4. جميع ما ذكر

كيف يعمل غشاء RO في تحلية المياه؟

1. يستخدم الضغط لدفع الماء من خلال غشاء مسامي
2. يستخدم الشعاع الكهرومغناطيسي لتحلية المياه
3. يعتمد على الترشيح الطبيعي للمياه
4. يستخدم تبخر الماء وتكثيفه

ما هو الغرض الرئيسي الستخدام تقنية تحلية المياه باستخدام غشاء NF ؟

1. إزالة الشوائب الكبيرة فقط
2. إزالة الأملاح والشوائب الصغيرة
3. تنقية المياه من البكتيريا فقط
4. تحلية المياه باستخدام الشمس

ما هي واحدة من التطبيقات الشائعة لتقنية تحلية المياه باستخدام غشاء RO ؟

1. انتاج المياه الصالحة للشرب
2. توليد الكهرباء
3. تصفية المياه
4. إنتاج الوقود الحيوي

ما هي عملية تحلية المياه بواسطة غشاء NF؟ تحديدًا

1. تركيز الملح باستخدام مسام صغيرة جدًا
2. تسخين المياه وتبخيرها
3. إزالة الشوائب الكبيرة فقط
4. تنقية المياه من الكلور

ما هي مشكلة تقنية تحلية المياه باستخدام غشاء NF بالمقارنة مع RO ؟

1. ارتفاع التكلفة
2. ضعف أداء إزالة الأملاح
3. ارتفاع استهلاك الطاقة
4. لا توجد مشكلة

ما هي العوامل التي تؤثر على كفاءة تقنية تحلية المياه باستخدام غشاء RO ؟

1. درجة حرارة الماء والملوثات الكيميائية فيه
2. الوقت اللازم لتحلية المياه
3. لون الماء ورائحته
4. جميع ماذكر

Annex (3)

Training Course Evaluation

Training Course Evaluation

Training Course	" Efficient Water Use Techniques for Agricultural in Jordan"

Training elements	)5(Strongly agree	)4(Agree	)3(No opinion	)2(I do not agree	)1(Strongly disagree
Trainer: DR.					
The trainer had considerable expertise in her/his field and was well prepared.	78%	22%	0%	0%	0%
The trainer presented the training materi very well	78%	22%	0%	0%	0%
The trainer's experience was reflected in hi performance	84%	16%	0%	0%	0%
The trainer takes into account and respects the different levels of trainees	86%	11%	3%	0%	0%
The trainer allows discussion and questions	86%	14%	0%	0%	0%

Training elements	**)5(Strongly agree**	**)4(Agree**	**)3(No opinion**	**)2(I do not agree**	**)1(Strongly disagree**
Training content					
The training material is integrated and coherent.?	84%	16%	0%	0%	0%
The training material is simple and clear.	65%	35%	0%	0%	0%
The training material is appropriate for 5the trainees and their needs?	57%	43%	0%	0%	0%
fitting the training period with the training content?	68%	22%	5%	5%	0%

Trainees					
Group participation and interaction dominated the training atmosphere?	59%	32%	5%	3%	0%
Training environment					
The training location is convenient and comfortable?	73%	27%	0%	0%	0%
The facilities provided were at the required level?	81%	16%	3%	0%	0%
Are equipment needed for the course available and appropriate?	76%	24%	0%	0%	0%
What is the general impression of the training program					
Does the training program meet your expectations?	73%	27%	0%	0%	0%
I will take similar courses in the future?	78%	22%	0%	0%	0%
In general, it can be said that the course was successful.	86%	14%	0%	0%	0%

Efficient Water Use Techniques for Agricultural in Jordan PROSIM

تدريب المدربين Training of Extension and technical staff

"التدريب المتقدم للمدربين على تقنيات الاستخدام الفعال للمياه لأغراض الزراعة في الاردن"

Info: Signature

Day # 1 اليوم الاول

Info: Place of work

Info: Name of participant

الرقم	الاسم	الجهة	التوقيع
.1	م. شروق أحمد حسين الوخيان	مديرية زراعة البلقاء	
.2	م. إبراهيم محمد سعيد رضا عمايرة	وزارة الزراعة	
.3	م. أحمد عارف أحمد الجرايدة	مديرية زراعة الكرك	
.4	م.غيداء عبد الرحمن السكسك	مديرية زراعة جرش	
.5	م. نداء مصباح أبو صبح	مديرية زراعة مادبا	
.6	م. إلهام محمود الزيود	مديرية زراعة الزرقاء	
.7	م. عبير المحارب	مديرية زراعة المفرق	
.8	م. خليل يوسف العدوان	مديرية زراعة اللواء الجنوبي	
.9	م. سوزان قاسم ذيب الهناندة	امانة عمان	
.10	خولة علي احمد ملكاوي	امانة عمان	
.11	م.ابراهيم خالد صالح	مؤسسة الاقراف الزراعي	
.12	م.بسام عيسى مدانات	مؤسسة الاقراف الزراعي	
.13	م.احمد سعود عبد القادر	مؤسسة الاقراف الزراعي	
.14	م.محمد عبدالله الكركي	مؤسسة التعاون الدولي	
.15	م.عمر عبدالله موسى	المؤسسة التعاونية	
.16	م.ايمن موسى ابو زيتون	المؤسسة التعاونية	
.17	م.ا شرف علي عبيد العلاوين	امانة عمان الكبرى	
.18	م. يزيد محمد خلف الرقاد.	الجامعة الاردنية - عقبة جبر	
.19	م.بكر اسحق لبزو	جامعة البلقاء التطبيقية	
.20	م. رنيم صلاح النسور.	جامعة البلقاء	
.21	م. محمد الشبول	الجامعة الهاشمية	
.22	م. عبدالله الحليمي	الجامعة الاردنية	
.23	م. سندس النعيمي	الجامعة الاردنية	

المركز الوطني للبحوث الزراعية
National Agricultural Research Center

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

PROSIM

دورة تدريب المدربين

"التدريب المتقدم للمدربين على تقنيات الاستخدام الفعال للمياه لأغراض الزراعة في الاردن"

اليوم الثاني Day # 2

الرقم	الاسم Info: Name	الجهة Info: Place of work	التوقيع Info: Signature
.1	م. شروق أحمد حسين الوخيان		
.2	م. إبراهيم محمد سعيد رضا عمايرة		
.3	م. أحمد عارف أحمد الجرايدة		
.4	م.غيداء عبد الرحمن السكسك		
.5	م. نداء مصباح أبو صبح		
.6	م. إلهام محمود الزيود		
.7	م. عبير المحارب		
.8	م. خليل يوسف العدوان		
.9	م. سوزان قاسم ذيب الهناندة		
.10	خولة علي احمد ملكاوي		
.11	م.ابراهيم خالد صلاح		
.12	م.بسام عيسى مدانات		
.13	م.احمد سعود عبد القادر		
.14	م. اياد فهد الفقهاء		
.15	م.عمر عبدالله موسى		
.16	م.ايمن موسى ابو زيتون		

المركز الوطني للبحوث الزراعية
National Agricultural Research Center

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

PROSIM

.17	م.ا شرف علي عبيد العلاوين	اعانة عمان	
.18	م. يزيد محمد خلف الرقاد	الجامعة الأردنية - المشاريع البحثية	
.19	م.بكر اسحق لبزو	جامعة البلقاء التطبيقية	
.20	م. رنيم صلاح النسور.	جامعة البلقاء	
.21	م. محمد عوض الشبول	الجامعة الهاشمية	
.22	عبدالله محمود محمد التميمي	الجامعة الأردنية	
.23	م.سندس يحيى الزعبي	الجامعة الأردنية	
.24	م.ايلاف فوزي عبيدات	NARC	
.25	م. هبه حماد الشوابكة	NARC	
٢٦	علي بسام أبو شهاب	الجامعة الأردنية	
٢٧			
٢٨			

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دورة

تدريب المدربين Training of Extension and technical staff

"التدريب المتقدم للمدربين على تقنيات الاستخدام الفعال للمياه لأغراض الزراعة في الاردن"

اليوم الثالث Day # 3

الرقم	الاسم Name	الجهة Place of work	التوقيع Signature
.1	م. شروق أحمد حسين الوخيان	مديرية زراعة البلقاء	
.2	م. إبراهيم محمد سعيد رضا عمايرة	زراعة اربد الكورة	
.3	م. أحمد عارف أحمد الجرايدة		
.4	م.غيداء عبد الرحمن السكسك	زراعة جرش	
.5	م. نداء مصباح أبو صبح	مديرية زراعة عاصمة	
.6	م. إلهام محمود الزيود	مديرية زراعة الزرقاء / الأزهار	
.7	م. عبير المحارب		
.8	م. خليل يوسف العدوان	مديرية زراعة القوة الجوية	
.9	م. سوزان قاسم ذيب الهناندة	امانة عمان	
.10	خولة علي احمد ملكاوي	امانة عمان	
.11	م.ابراهيم خالد صلاح	مؤسسة الاقراف الزراعي	
.12	م.بسام عيسى مدانات	مؤسسة الاقراف الزراعي	
.13	م.احمد سعود عبد القادر	مؤسسة الاقراف الزراعي	

.14	م.اياد فهد الفقهاء		
.15	م.عمر عبدالله موسى		
.16	م.ايمن موسى ابو زيتون		
.17	م.ا شرف علي عبيد العلاوين		
.18	م. يزيد محمد خلف الرقاد.		
.19	م.بكر اسحق لبزو		
.20	م. رنيم صلاح النسور.		
.21	م. محمد عوض الشبول		
.22	عبدالله محمود محمد التميمي		
.23	م.سندس يحيى الزعبي		
.24	ايلاف فوزي عبيدات		
.25	هبة حماد الشوابكة		

٢٦. علي بسام أبو شهاب الجامعة الأردنية

٢٧ سندس الزعبي الجامعة الأردنية

دورة تدريب المدربين (2)

Info: 26 Participants

"التدريب المتقدم للمدربين على تقنيات الأستخدام الفعال

للمياه لأغراض الزراعة في الاردن"

Info: Signature

Info: Place of work

اليوم الاول

Info: Day #1

Info: Name of participants

الرقم	الاسم	الجهة	التوقيع
1	المهندس اسامة خريس	بلدية اربد	
2	المهندس محمد عبابنة	بلدية اربد	
3	المهندس سفيان محمد عرسان	بلدية جرش	
4	المهندس علاء طنطاوي	بلدية جرش	
5	المهندس يونس البطوش	بلدية عجلون	
6	المهندس حابس احمد علي عمارات	بلدية عجلون	
7	المهندسة اماني دعابس دعيبس	INWRDAM	
8	المهندس اسامه محمد العمارات	NARC	
9	المهندس حمزه هشام ساري	NARC	
10	المهندس علاوي عبد العرايضه	NARC	
11	المهندس غسان حسين السالم	NARC	
12	الدكتور حسان خريسات	NARC	
13	المهندسة دعاء اسماعيل ابو حمور	NARC	
14	المهندسة لجين خضر الحجازين	NARC	
15	المهندسة ميصبحي ذياب مي صبحي ذياب	NARC	
16	المهندسة فرح احمد الخواجا	NARC	
17	المهندسة اسراء فايز الجرايرة	NARC	
18	المهندسة الاء ثلجي السعودي	NARC	
19	علي "محمد نعمان" نهاد هاشم	طالب	
20	قصي جاد الله الرواجفة	متدرب	
21	عبد الرحمن عايد عفيفي	متدرب	
22	كميل معين السلمان	متدرب	
23	المهندسة شيماء غوشه	متدرب	
25	المهندس كريم جميل ابو شاويش	I Plant	
26	المهندسة دانا رائد قطناني	متدربة	
27	المهندس هديل بشير رحاحلة	متدربة	

المهندس يوسف ابراهيم قاسم حوسى متدرب

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دورة تدريب المدربين (2)

"التدريب المتقدم للمدربين على تقنيات الأستخدام الفعال

للمياه لأغراض الزراعة في الاردن"

اليوم الثاني Info: Day#2

الرقم	الاسم	الجهة	التوقيع
1	المهندس اسامة خريس	بلدية اربد	
2	المهندس محمد عبابنة	بلدية اربد	
3	المهندس سفيان محمد عرسان	بلدية جرش	
4	المهندس علاء طنطاوي	بلدية جرش	
5	المهندس يونس البطوش	بلدية عجلون	
6	المهندس حابس احمد علي عمارات	بلدية عجلون	
7	المهندسة اماني دعيبس	INWRDAM	
8	المهندس اسامه محمد العمارات	NARC	
9	المهندس حمزه هشام ساري	NARC	
10	المهندس علاوي عبد العرايضه	NARC	
11	المهندس غسان حسين السالم	NARC	
12	الدكتور حسان خريسات	NARC	
13	المهندس يوسف ابراهيم قاسم موسى	متدرب	
14	المهندسة لجين خضر الحجازين	NARC	
15	المهندسة مي صبحي ذياب	NARC	
16	المهندسة فرح احمد الخواجا	NARC	
17	المهندسة اسراء فايز الجرايرة	NARC	
18	المهندسة الاء ثلجي السعودي	NARC	
19	علي "محمد نعمان" نهاد هاشم	طالب	
20	قصي جاد الله الرواجفة	متدرب	
21	عبد الرحمن عايد عفيفي	متدرب	
22	كميل معين السلمان	متدرب	
23	المهندسة شيماء غوشه	متدرب	
24	المهندس كريم جميل ابو شاويش	I Plant	
25	المهندسة دانا رائد قطناني	متدربة	
26	المهندس هديل بشير رحاحلة	متدربة	

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دورة تدريب المدربين (2)

"التدريب المتقدم للمدربين على تقنيات الأستخدام الفعال

للمياه لأغراض الزراعة في الاردن"

Info: Day#3 اليوم الثالث

الرقم	الاسم	الجهة	التوقيع
1	المهندس اسامة خريس	بلدية اربد	
2	المهندس محمد عبابنة	بلدية اربد	
3	المهندس سفيان محمد عرسان	بلدية جرش	
4	المهندس علاء طنطاوي	بلدية جرش	
5	المهندس يونس البطوش	بلدية عجلون	
6	المهندس حابس احمد علي عمارات	بلدية عجلون	
7	المهندسة اماني دعيبس	INWRDAM	
8	المهندس اسامه محمد العمارات	NARC	
9	المهندس حمزه هشام ساري	NARC	
10	المهندس علاوي عبد العرايضه	NARC	
11	المهندس غسان حسين السالم	NARC	
12	الدكتور حسان خريسات	NARC	
13	المهندس يوسف ابراهيم قاسم موسى	متدرب	
14	المهندسة لجين خضر الحجازين	NARC	
15	المهندسة مي صبحي ذياب	NARC	
16	المهندسة فرح احمد الخواجا	NARC	
17	المهندسة اسراء فايز الجرايرة	NARC	
18	المهندسة الاء ثلجي السعودي	NARC	
19	علي "محمد نعمان" نهاد هاشم	طالب	
20	قصي جاد الله الرواجفة	متدرب	
21	عبد الرحمن عايد عفيفي	متدرب	
22	كميل معين السلمان	متدرب	
23	المهندسة شيماء غوشه	متدرب	
24	المهندس كريم جميل ابو شاويش	I Plant	
25	المهندسة دانا رائد قطناني	متدربة	
26	المهندس هديل بشير رحاحلة	متدربة	