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**Deliverable
D3.1**

Training material

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BE 007	Slovak University of Agriculture in Nitra
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List of Acronyms

This table shows the acronyms used in this deliverable in alphabetical order.

Acronym	Description
AgriWatch	AgriWatch BV
EC	European Commission
EO	Earth Observation
EU	European Union
JO	Jordan
HE	Higher Education
HEI	Higher Education Institution
GA	Grant Agreement
MS	Milestone
PS	Palestine
Int@E	Int@E UG
WP	Work Package
WPL	Work Package Leader
UJ	The University of Jordan
NUCT	National University College of Technology
MU	Mutah University
MS	Milestone
PPU	Palestine Polytechnic University
PTUK	<i>Palestine</i> Technical University - Kadoorie
SUA	Slovak University of Agriculture in Nitra
ToT	Training-of-Trainers
WEF	Water-Energy-Food

1 Executive Summary

This report covers the progress of the AgroTec project's implementation about the Training-of-Trainers (ToT) within the framework of Task 3.1 (Training of Trainers) up to the end of June 2024, marking the first eighteen months of the project.

So far, two face-to-face ToT programs have been organised by European partner organisations in Nitra and Leipzig. The final ToT will be organised by AgriWatch company in April 2024 in the Netherlands. This is due to the local partners having spent more than 40% of the pre-financing received and thus lacking the budget for further travel. Additionally, the final ToT will provide an opportunity for local partners to ask questions and incorporate final changes into their training courses after finalising all training materials for the 12 vocational courses by the end of 2024.

The content of the ToT report includes the following:

1. The first AgroTec Training was held by the Slovak University of Agriculture (SUA) in Nitra from October 2nd to October 6th, 2024, in Slovakia.
2. The second AgroTec Training Workshop was held by Int@E UG (Int@E) in Leipzig, Germany, from April 22nd to April 26th, 2024.

2 Introduction

The AgroTec project aims to address the expansion of economic development in rural areas of Jordan and Palestine (JO&PS). With agriculture being a significant source of employment and economic importance in the region, it plays a crucial role in supporting income, food security, and livelihoods. Both countries face challenges such as food deficit, high food prices, water scarcity, and overuse of groundwater, which heavily affect their economic growth in general and their agricultural sector in particular, especially under expected future drought conditions.

To tackle these issues, a consortium of six universities and two business partners will establish **five "AgroTec" centres** in universities across JO&PS. These centres will offer practical and innovative vocational education and training (VET) courses, fostering cooperation between companies, VET institutions, and stakeholders in the Agri-Food value chain.

The project's focus includes promoting smart tools for data enrichment through Earth Observation (EO) and Geospatial technologies, IoT sensor networks for soil-crop monitoring, processing, marketing, and quality control. The curriculum will be developed to address the new skills required in these advancements, filling gaps in traditional curricula.

The main project's outputs include **12 vocational courses, 20 Training-of-Trainers (ToT) and upskilling of VET and HEI staff**, encompassing Geo-ICT solutions and Agrarian trade and marketing courses. The ToT activity aims to provide ToT for the AgroTec centres, focusing on teaching methodologies, developing a methodological framework for training, and designing and developing materials for 12 vocational courses (including teaching materials, exercises,

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and exams). At least 12 courses are currently under development based on the needs assessment, including Agrarian Marketing and Geospatial Foundations for Crop Monitoring. These 12 courses will be developed by the 5 local universities supported by the EU partners.

Overall, the project seeks to enhance agricultural practices, strengthen vocational education, foster innovation, and empower various stakeholders in the Agricultural sector of Jordan and Palestine.

3 Objectives of the Deliverable

This report covers the progress of the AgroTec project's implementation concerning the Training-of-Trainers (ToT) within the framework of Task 3.1 (Training of Trainers) up to the end of June 2024, marking the first eighteen months of the project.

4 Activities Undertaken

So far, two ToT programs have been organised by European partner organisations in Nitra and Leipzig:

1. The first face-to-face AgroTec Training was held by the Slovak University of Agriculture (SUA) in Nitra from October 2nd to October 6th, 2024, in Slovakia.
2. The second face-to-face AgroTec Training Workshop was held by Int@E UG (Int@E) in Leipzig, Germany, from April 22nd to April 26th, 2024.

4.1 AgroTec ToT at SUA in Nitra

The first AgroTec Training was held by the Slovak University of Agriculture (SUA) in Nitra from October 2nd to October 6th, 2024, in Slovakia.

This training was held by the SUA in Nitra, with the participation of the Jordanian and Palestinian partners (See Figures 1 – 9):

1. National University College of Technology (NUCT);
2. The University of Jordan (UJ);
3. Mutah University (MU);
4. Palestine Technical University Kadoorie (PTUK);
5. Palestine Polytechnic University (PPU).

The training topics covered were mainly about marketing in the agriculture sector. The training included the following topics:

- Agrarian Marketing;
- Global marketing;
- Food Marketing & Consumer Behaviour.

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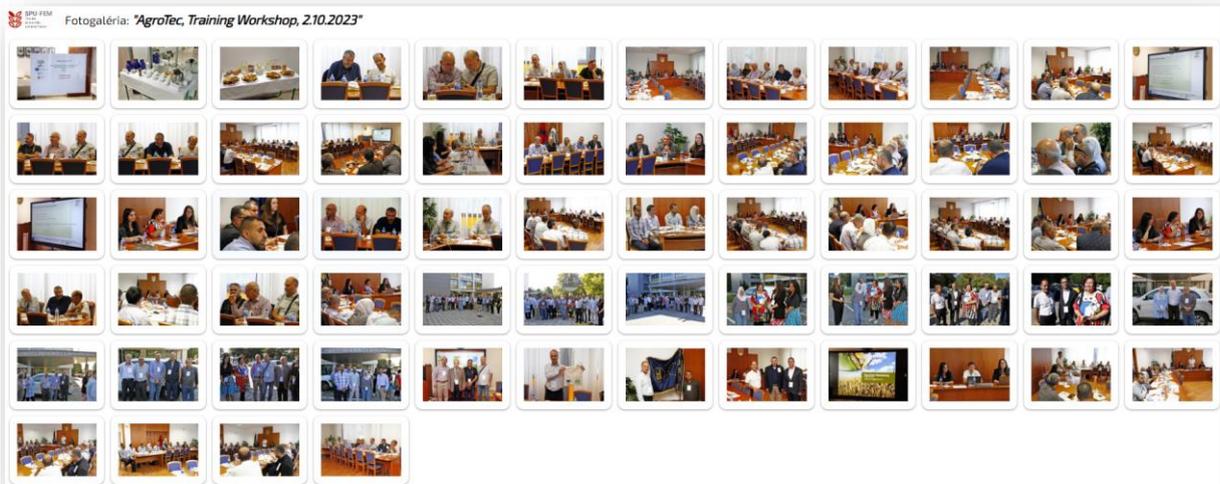


Figure 1: The first AgroTec Training Workshop was held by the Slovak University of Agriculture (SUA) in Nitra from October 2nd to October 6th, 2024, in Slovakia.



Figure 2: AgroTec Training in Nitra, Slovakia (Workshop participants)



Figure 3: First AgroTec Training in Nitra, Slovakia



Figure 4: AgroTec Training in Nitra, Slovakia

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Figure 5: The final meeting of the first AgroTec Training Workshop, SUA, Nitra, October 6th, 2024.



Figure 6: The first AgroTec training at the Slovak University of Agriculture in Nitra (Certificates of the participants from the Jordanian and Palestinian partners).

Additionally, there was a lecture on the projects of doctoral students at the College of Engineering in

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the field of agriculture, along with a tour of the laboratories at the Faculty of Engineering and Agriculture.

Furthermore, the Faculty of Economics and Management introduced a new educational format called the Knowledge Cafe, designed specifically for students of international business and international economics and development. They leveraged the presence of educators from the Middle East to organize an intercultural dialogue (Figure 7).



Figure 7: The Knowledge Café at SUA during the AgroTec training workshop at the Faculty of Economics and Management of the SUA.



Figure 8: The Knowledge Café at SUA during the AgroTec training workshop at the Faculty of Economics and Management of the SUA.



Figure 9: The Knowledge Café at SUA during the AgroTec training workshop at SUA in Nitra.

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Photos are available at:

[Photos by JG and AM](#)

https://foto.fem.uniag.sk/Fakulta/projekty/2023_10_02_agrotec_training_workshop/

https://foto.fem.uniag.sk/Fakulta/projekty/2023_10_03_agrotec_knowledge_cafe/

https://foto.fem.uniag.sk/Fakulta/projekty/2023_10_06_agrotec_final_meeting/

4.2 AgroTec Training in Nitra – Dissemination

Promotion, marketing, and dissemination activities were also organised during the training workshop in Nitra. Additionally, the AgroTec website (<https://nuct.edu.jo/agrotec/>) is utilized as a platform for dissemination.

Knowledge Café – Day 2 – 2023_10_03

The TV interview published on the local TV Nitrička's Facebook site (Oct. 11)

<https://fb.watch/nDGqelRjto/>

The TV interview published on the local TV Nitrička's website (Oct. 10)

<https://tvnitricka.sk/fem-hostila-akademikov-z-blizkeho-vychodu/>

Post sharing the TV's post published on the Facebook page of the FEM SUA in Nitra (Oct. 11)

<https://www.facebook.com/femspuvnitre/posts/pfbid036dE6UAunB453k2nURN2mkirJAxGKy5LEFx8BJHwEPnfMsxAEQ3sbk5CxeDsxHQULI>

Post published on the Facebook page of the FEM SUA in Nitra (Oct. 3)

<https://www.facebook.com/femspuvnitre/posts/pfbid0AQjvqyj74HpcwvtvyLxQV8ugLu6NKkUaaMXijE6kYYfTvzdM9XqUrXFoS45aA9u8I>

Post published on the Facebook page of the FEM SUA in Nitra (Oct. 3)

<https://www.facebook.com/femspuvnitre/posts/pfbid02AQdXzZ5AhTRWhjaLkDtTdCiM9r55VEesAxAeyaSL5DmUHEBo1CazexFTCxDq5m6AI>

Post published on the Facebook page of the SUA in Nitra (Oct. 12)

<https://www.facebook.com/SPUNitra/posts/pfbid0276K1SRLx112zNWYsr5T3aLkA4M2wQkYjoBjUWgwhywAxMTQaRzUH1Rbj7U1FPhq3I>

Dissemination

Post published on the Facebook page of the FEM SUA in Nitra (Oct. 2)

<https://www.facebook.com/femspuvnitre/posts/pfbid03bjBEvrH9Y1CMitCftmZkM8PMrVhHa52JPLu62u5vVMNHfpozpeKbM5MbKv4EqI>

Article on the university website in Slovak (Oct. 4)

<http://www.uniag.sk/sk/aktualne-informacie/vedomostna-kaviaren-na-fem-ponukla-interkulturny-dialog>

Assembly Hall

<https://www.register-architektury.sk/en/objekt/280-agricultural-university>

Also, see the 2nd AgroTec Newsletter about the training workshop in Nitra:

<https://nuct.edu.jo/agrotec/wp-content/uploads/2024/06/AgtoTec-2nd-Newsletter-1.pdf>

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For the list of participants, invitation letters, attendance sheet, agenda, photos, certificates, and training event evaluation report, as well as relevant dissemination activities please refer to the link in the shared Google Drive folder below:

Link: https://drive.google.com/drive/folders/198h8_mWOaLs3X1txuRw2jkuSMI3OtHbK?usp=sharing

The agenda of the training workshop in Nitra is also enclosed.

4.3 ToT at Int@E UG in Leipzig

The second AgroTec Training Workshop was held by Int@E UG (Int@E) in Leipzig, Germany, from April 22nd to April 26th, 2024. The training was held with the participation of the local project partners: The University of Jordan, National University College of Technology, Mutah University (Jordan), Palestine Technical University Kadoorie, Palestine Polytechnic University (Palestine) and the organising partner Int@E UG. 23 participants attended the training workshop (See Figure 10 - 16). The training topics included:

- The smart farming foundations.
- The use of drones and robotics in agriculture.
- The use of sensors in agriculture.
- Blockchain and Marketing.
- The use of Augmented and Virtual Reality in agriculture.
- Field visits.

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Day 1: April,22, 2024		Day 4: April 25, 2024	
Time	Topic	Time	Topic
08:30 – 08:50	Registration	09:00 – 09:30	Registration
08:50 – 09:00	Welcome Int@E- Dr. Riyadh Qashi, Dr. Ahmed Ashour	09:30 – 10:30	Augmented and Virtual Reality
09:00 – 10:00	Transfer to LFG Oberholz	10:30 – 11:00	Recap of all Smart Farming Technologies
10:00 – 11:00	Smart Farming Foundations	11:00 – 13:00	Workshop (Lunch Break included)
11:00 – 12:30	Drones in Agriculture	15:00 – 15:30	Presentations
12:30 – 13:30	Lunch Break	15:30 – 16:00	End of the day
13:30 – 15:00	Robotics in agriculture		
Day 2: April 23, 2024		Day 5: April 26, 2024	
Time	Topic	Time	Topic
09:00 – 09:30	Registration	09:00 – 09:30	Registration
09:30 – 11:30	Sensors in agriculture	09:30 – 15:30	Visit Agriculture and Food Department F at the University of Leipzig Visit the Deutsche Nationalbibliothek (German National Library)
11:30 – 12:30	Lunch Break	15:30 – 16:00	End of the day
12:30 – 13:00	Transfer		
13:00 – 15:00	Visit at Vertical Farming Startup		
15:00 – 15:30	Transfer		
15:30 – 16:00	End of the day		
Day 3: April 24, 2024		Location:	
Time	Topic	Smart Farming Lab	
09:00 – 09:30	Registration	Institut für Wirtschaftsinformatik	
09:30 – 11:30	Blockchain and Marketing	Room IZ03	
11:30 – 12:30	Lunch Break	Grimmaische Str. 12	
12:30 – 13:30	Transfer	04109 Leipzig	
13:30 – 15:00	Visit at dairy farm		
15:00 – 16:00	Transfer		
16:00 – 16:30	End of the day		

Figure 10: The agenda of the 2nd AgroTec Training Workshop at the Int@E UG, Leipzig Germany, from April 22nd to 26th 2024.

The training also included a workshop on introducing a new idea of smart agriculture using drones, robotics, sensors, etc. The trainees divided into four groups; each group introduced a new idea of using technologies in agriculture (Figure 11-12).



Figure 11: 2nd AgroTec Training in Leipzig, Germany



Figure 12: Second AgroTec Training in Leipzig, Germany

In addition, the training included field visits to the Botanical Garden in the University of Leipzig and the Dairy Farm in Leipzig, including the drone data acquisition (Figure 13-16).



Figure 13: Second AgroTec Training in Leipzig, Germany



Figure 14: AgroTec Training in Leipzig, Germany



Figure 15: Drone data acquisition training during the second AgroTec Training in Leipzig, Germany



Figure 16: Second AgroTec Training in Leipzig, Germany

For the list of participants, invitation letters, attendance sheet, agenda, photos, certificates, and training event evaluation report, as well as relevant dissemination activities please refer to the link in the shared Google Drive folder below:

Link: https://drive.google.com/drive/folders/198h8_mWOaLs3X1txuRw2jkuSMI3OtHbK?usp=sharing

The agenda of the training workshop in Leipzig is also enclosed.

Also, see the 3rd AgroTec Newsletter about the training workshop in Leipzig:

<https://nuct.edu.jo/agrotec/wp-content/uploads/2024/06/AgtoTec-3rd-Newsletter.pdf>

5 Conclusions

As discussed above, during the 1st eighteen months of the AgroTec project implementation phase, two Training-of-Trainers (ToT) workshops were held to train VET staff of the local partner organisations in Jordan and Palestine, thereby strengthening the organisational capacity of the organisations involved.

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During these workshops in Nitra (2-6 October 2023) and Leipzig (22-26 April 2024) a number of ToT training activities were organised, including:

- Introducing specific vocational skills relevant to the courses they will be teaching and new idea of smart agriculture using drones, robotics, sensors, etc.
- Trainers learnt various teaching methodologies to effectively convey information, engage learners, and facilitate practical exercises.
- Trainers were guided on how to design and develop vocational course materials, including lesson plans, exercises, and assessment tools.
- Trainers learnt the use of smart farming technologies and agrarian marketing, including field visits for data collection and the Knowledge Café;
- Awareness raising in smart farming and agrarian marketing to cover the local and regional needs.

Therefore, ToT in the AgroTec capacity-building program involved equipping selected VET staff and trainers with the skills, knowledge, and methodologies they need to effectively train future farmers and others relevant stakeholders. This process is crucial for creating a sustainable and scalable training ecosystem.

For the list of participants, invitation letters, attendance sheet, agenda, photos, certificates, and training event evaluation report, as well as relevant dissemination activities please refer to the link in the shared Google Drive folder below:

Link: https://drive.google.com/drive/folders/198h8_mWOaLs3X1txuRw2jkuSMI3OtHbK?usp=sharing

The agenda of the training workshop in Nitra is also enclosed.

The results of the evaluation questionnaires for the two training event in Nitra and Leipzig show that the training workshops were successful and participants were satisfied. Partners are eager to communicate, cooperate and support every aspect of the project. The evaluation forms were prepared in the Google platform and shared.

Some comments were gathered to be considered in the organization of next training sessions. Topics Such as ICT in Agriculture, hands on modelling sensors, drones, and robotic, require more training in this project especially practical activities about these topics.

In general, it can be concluded that the training events were very efficient and accomplished planned aims. Issues obtained in the deficiencies of the trainings will be taken into account in the further trainings, and it will contribute to increasing the quality and effectiveness of the following events.