Co-funded by the European Union

ERASMUS+ VET PROGRAMME

Project Number and Name: 101092160 - AgroTec

Project name:
AgroTechnology VET Centres to Network and Train Future Farmers in Jordan and Palestine

Project acronym: AgroTec

Deliverable D3.2	**AgroTec centres equipment**

AgroTec D3.2 Deliverable – AgroTec centers equipment

Work Package (WP)	WP3: AgroTec Development
WP Leader	Slovak University of Agriculture in Nitra
WP members	AgriWatch BV The University of Jordan National University College of Technology Mutah University Palestine Technical University - Kadoorie Palestine Polytechnic University Int@E UG
Due Date	30 June 2023
Issue Date	14 July 2023
Version/Status	V2.0

Beneficiary number	**Beneficiary name**
BE 001	AgriWatch BV
BE 002	The University of Jordan
BE 003	National University College of Technology
BE 004	Mutah University
BE 005	Palestine Technical University - Kadoorie
BE 006	Palestine Polytechnic University
BE 007	Slovak University of Agriculture in Nitra
BE 007	Int@E UG

Project Coordinator	Dr. Ali Abkar
Address	AgriWatch BV Weerninklanden 24 7542 SC Enschede The Netherlands
Phone	+31 642 648 220
Email	ali.abkar@agriwatch.nl
Project Website	https://nuct.edu.jo/agrotec/

Table of Contents

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	*Palestine* Technical University - Kadoorie
SUA	Slovak University of Agriculture in Nitra
ToT	Training-of-Trainers
WEF	Water-Energy-Food

1 Executive Summary

In this report, the required demonstration equipment to be purchased for the AgroTec training centres will be discussed. The required demonstration equipment is supported by the JO&PS Universities and approved by the Steering Committee of the AgroTec project.

The AgroTec training centres aim to enhance precision agriculture and smart farming through IoT sensors technology and related equipment, software, and dashboards.

The equipment procurement process has commenced after finalising the list, relevance, and specifications of the necessary items.

Initially, the equipment requirements were formulated based on suggestions from local partner universities, considering their relevance and descriptions. Subsequent online meetings were conducted to evaluate the proposed equipment's alignment with the courses to be developed, at both individual and Steering Committee/Consortium levels.

The selection of equipment was guided by an established purchase plan and criteria. These criteria were thoughtfully crafted by the project team to ensure the chosen equipment effectively serves the objectives of the AgroTec training centres and supports the courses on precision agriculture and smart farming:

1. It is expected that the IoT sensor technology and related equipment in the AgroTec project will support:

- Capacity development of all five university partners in Jordan and Palestine (JO&PS); purchase sensors and solutions, install in their research stations for staff/students training, test, and experimentation, and develop course materials based on these pieces of equipment.
- Five research stations and experimental fields for the transformation of digitization in the agricultural sector. The experimental fields test the use of digital technologies in agriculture intending to increase sustainability and efficiency. It also offers a contact point for other interested stakeholders in JO&PS and the region. As mentioned in the AgroTec proposal, these sensors will be also used as demonstration sensor networks for upscaling to other universities and organisations in JO&PS as well as other stakeholders and farmers.

2. Lack of experience and expertise and prices/tax/overheads of the local providers in JO&PS.

3. Based on section 1.3 in the AgroTec proposal, most of the equipment and IoT sensors network that will be used in the AgroTec centres are procured from entities across Europe. This will strengthen future collaboration between EU and Non-EU marketing and business relations.

4. Applications including relevant technical information, specifications, accuracy, connectivity, and battery life (e.g., solar panel).

5. Software, user interface, dashboard, and apps for an easy and quick overview.

6. IoT sensors are only relevant if they are part of a functional loop of a model, prediction, measurement, and cost-effective action (Services). The sensor packages must be documented and

especially functional in terms of operational and maintained hardware and software. Relevant Services include initial training (after purchase), installations and maintenance, crop models, and remote support for the interpretation of data for regular irrigation management, disease management, and nutrition management during the growing season, as well as integration with the course materials and technologies to be used in the AgroTec project.

7. Should be interesting for research at 5 universities.

8. Price information; Cost-effective for AgroTec Centres.

9. Competitive bidding process according to the Universities' rules (e.g., three bids for each piece of equipment to approve the purchase).

2 Introduction

The introduction of the report provides an overview of the AgroTec project [1] and its objectives. It highlights the significance of addressing economic development in rural areas of Jordan and Palestine, where agriculture plays a vital role in supporting livelihoods, income, and food security. Both countries face challenges related to food deficit, high food prices, water scarcity, and overuse of groundwater, making the improvement of their agricultural sector crucial, especially under the expected future drought conditions.

To address these challenges, the AgroTec project brings together a consortium comprising six universities and two business partners. The project's main focus is the establishment of five "AgroTec'' centres in universities across JO&PS, which will be equipped with Demonstration Geo-ICT equipment, as discussed in this report. These centres will offer practical and innovative vocational education and training (VET) courses, fostering collaboration between companies, VET institutions, and stakeholders in the Agri-Food value chain.

The project aims to promote the use of smart tools like Earth Observation (EO) and Geospatial technologies, as well as IoT sensor networks for soil-crop monitoring, processing, marketing, and quality control. The curriculum will be designed to address the new skills required for these advancements, bridging gaps in traditional curricula.

Key project outputs include the purchase of equipment, the development of vocational courses, Training-of-Trainers (ToT) programs, and upskilling of VET and Higher Education Institution (HEI) staff, covering Geo-ICT solutions and Agrarian trade and marketing courses. Several courses will be piloted and tested to showcase smart farming and marketing techniques for research, training, and extension services.

Overall, the AgroTec project aims to enhance agricultural practices, strengthen vocational education, promote innovation, and empower various stakeholders in the Agricultural sector of Jordan and Palestine. By leveraging technology and expertise, the project seeks to drive sustainable growth and development in these vital sectors of the economy.

3 Objectives of the Deliverable

This section outlines the purpose of Deliverable D3.2 - AgroTec centres equipment, focusing on the required demonstration equipment for the AgroTec training centres. These centres play a crucial role within the AgroTec project by addressing knowledge and skill gaps in local organisations through comprehensive training and skills development for their staff, including future trainers from participating organisations (UJ, MU, NUCT, PPU, PTUK).

The primary aim of the AgroTec centres is to tackle the existing shortage of technical expertise and knowledge in geospatial technology. As part of their mission, these centres will prioritise training in various aspects of geospatial data, such as Remote Sensing, IoT sensor data utilisation, and Geospatial data collection, analysis, and interpretation.

The activities about the equipment procurement and establishment of these centres are carried out under WP3 (AgroTec Development). This section of the deliverable provides a detailed account of the activities undertaken in this context, which will be elaborated upon in the subsequent section.

4 Activities Undertaken

This section provides an overview of the progress made by the AgroTec project concerning the AgroTec training centre equipment activities conducted thus far.

Thorough Evaluation and Discussion: The project team engaged in extensive discussions and evaluations of the list of equipment and their specifications, which were prepared by the local partners. The primary aim was to ensure that the selected equipment aligns with the course objectives and avoids any duplication or overlap with existing resources.

Adaptation and Permissions: In cases where specific equipment needs were identified but not initially mentioned in the AgroTec proposal [1], the project team duly justified their necessity. Additionally, the required permissions for purchasing the “Digestion Unit” of PPU were obtained after seeking approval from the EU AgroTec Project Officer.

Finalisation of Equipment List: After careful consideration and consultation with relevant stakeholders, the equipment list, along with their relevance and specifications, was meticulously finalised, ensuring that it caters to the diverse needs of the AgroTec training centres.

Timeline and Considerations: The project team proactively set a clear timeline for equipment preparation and procurement, streamlining the process to meet project milestones efficiently. Furthermore, limitations and challenges faced by the local partners (especially the Palestinian partners) were openly discussed to develop effective strategies for overcoming potential obstacles.

Commencement of Procurement Process: The project has taken a significant step forward by initiating the equipment procurement process. The purchasing process involves central tendering for local universities, conducted in Euros to mitigate any potential issues related to exchange rates.

The list, relevance, and description of equipment per local university partner are as follows:

4.1 UJ Equipment List and Specifications

The necessary equipment list, relevance, and specifications are as follows:

Equipment 1: A handheld field hyperspectral sensor plus an RGB Camera

- Integrated RGB camera with a spectrometer (which are coaxial and synchronised) that acquires spectra registered with RGB images;
- Spectral Range: 350-1100 nm;
- Spectral channels: 2048;
- Spectral resolution: 0.35 nm;
- RGB Camera;
- Wi-Fi wireless control: out-of-box wireless connection;
- Platform independent: web application running on mobile, tablet, and desktop browsers;
- Simple to use in the field;
- Measurement browsers: an instant exploration of measurements after a data acquisition;
- Dedicated software.

Relevance: The device will be used in many courses to be developed by UJ, for example: in the "Sensor and Sensing", "Precision Farming", and "Model and Machine Learning in Precision Farming" courses. The sensor will be used for Remote Sensing, monitoring, data recording, and data transfer with wireless control for field and laboratory applications (Ground Truthing) using the simultaneously acquired "combination of RGB images and hyperspectral data".

Equipment 2: A Weather station

- Cheap sensors in a low-cost, low-power network;
- Wind Gauge (wind speed and direction);
- Rain Gauge;
- Air temperature;
- Option to connect to networks of weather stations;
- Connect to the internet and smartphone;
- Send real-time data to a cloud-based platform for storage and analysis.

Relevance: In the "Modern Agriculture Systems", "Sensor and Sensing", "Precision Farming", "Farm Management Information Systems (FMIS)", and "Model and Machine Learning in Precision Farming" courses at VET/Diploma level, we do not need the expensive weather sensor data. Weather forecasting is not accurate anyway! Moreover, cheap sensors in a low-cost, low-power network like NetAtmo are useful and practical.

Equipment 3: A Soil moisture sensors

- Soil moisture and salinity station

Relevance: In the "Modern Agriculture Systems", "Sensor and Sensing", "Precision Farming", "Farm Management Information Systems (FMIS)", and "Model and Machine Learning in Precision Farming" courses, we suggest a 'Soil moisture and salinity station' for Jordan climate and soil conditions to provide a more complete picture of saline soil conditions in Jordan. The data collected by these sensors can be used to optimise irrigation schedules, prevent overwatering or underwatering, and improve crop yields with a very good dashboard.

All these pieces of equipment will be used in the new **Diploma course in Smart Farming** (For details see the AgroTec D1.1 Deliverables – The 1st Progress Report), which will be jointly run by the School of Agriculture and Engineering. This is based on the existing infrastructure gaps in UJ - Agricultural / Engineering Schools.

4.2 NUCT Equipment List and Specifications

The necessary equipment list, relevance, and specifications are as follows:

Equipment 1: A Soil moisture sensors

- Soil moisture and salinity station

Relevance: In the "Modern Agriculture Systems", "Sensor and Sensing", "Precision Farming", "Farm Management Information Systems (FMIS)", and "Model and Machine Learning in Precision Farming" courses. We suggest a 'Soil moisture and salinity station' for Jordan's climate and soil conditions to provide a more complete picture of saline soil conditions in Jordan. The data collected by these sensors can be used to optimise irrigation schedules, prevent overwatering or underwatering, and improve crop yields with a very good dashboard.

Equipment 2: A Weather station

- Cheap sensors in a low-cost, low-power network;
- Wind Gauge (wind speed and direction);
- Rain Gauge;
- Air temperature;
- Option to connect to networks of weather stations;
- Connect to the internet and smartphone;
- Send real-time data to a cloud-based platform for storage and analysis.

Relevance: In the "Modern Agriculture Systems", "Sensor and Sensing", "Precision Farming", "Farm Management Information Systems (FMIS)", and "Model and Machine Learning in Precision Farming" courses at VET/Diploma level. We do not need expensive weather sensor data. Weather forecasting is not accurate anyway! Moreover, cheap sensors in a low-cost, low-power network like NetAtmo are useful and practical. There is already a NetAtmo network coverage in Jordan.

Equipment 3: A handheld field hyperspectral sensor plus an RGB Camera

- Integrated RGB camera with a spectrometer (which are coaxial and synchronised) that acquires spectra registered with RGB images;
- Spectral Range: 350-800 nm;
- Spectral channels: 1024;
- Spectral resolution: 0.35 nm;
- RGB Camera;
- USB cable for connecting to computer;
- Simple to use in the Field;
- Measurement browsers: an instant exploration of measurements after a data acquisition;
- Dedicated software.

Relevance: In the "Water Energy Food (WEF) Nexus" and "Consumer Behaviour" courses. Remote Sensing, monitoring, and data recording for field and laboratory applications (Ground Truthing, spectral analysis for WEF Nexus monitoring, and food/product quality control) using the combination of RGB camera and hyperspectral sensor.

Equipment 4: A laptop

- HP Pavilion 15 Laptop, 11th Gen Intel Core i7-1165G7 Processor, 16 GB RAM, 512 GB SSD Storage, Full HD IPS micro-edge Display, Windows 10 Pro, Compact Design, Long Battery Life (15-eg0021nr, 2020).

Relevance: to support various aspects of the centre's operations and objectives for data collection, processing, and analysis, as well as training, capacity building, and skill development.

Equipment 5: ARDUINO UNO KIT

- Arduino UNO R3
- Motion Sensor PIR
- BREADBOARD WIRES 30PCS
- Relay Module 1 channel
- MINI SERVO MOTOR SG90 9G
- Ultrasonic Sensor HC-SR04
- Breadboard 830 tie-point
- Transistor 2n2222 (NPN)
- Transistor 2n3906 (PNP)
- Diode (1n4001)
- Buzzer 5V
- LED 5mm Red
- LED 5mm Blue
- LED 5mm Green
- LED 5mm Yellow
- RGB led
- Potentiometer 50k ohm
- Potentiometer 10k ohm
- LCD 16x2
- BREAK AWAY MALE HEADERS
- LM35 TEMPERATURE SENSOR
- Light Sensor LDR(3mm) Sensor
- Resistor 330 ohm
- Resistor 1k ohm
- Resistor 10k ohm
- Push Button 4 pin
- 10K OHM POTENTIOMETER / TRIMPOTS
- Wires Female - Male

Relevance: Low-cost solutions, Prototyping and Sensor Integration, IoT Connectivity, Training, and Skill development.

4.3 MU Equipment List and Specifications

The necessary equipment list, relevance, and specifications are as follows:

Equipment 1: A Soil moisture sensors

- Soil moisture and salinity station

Relevance: In the “Fundamentals of Remote Sensing (RS) data acquisition and mapping” and “Marketing Management” courses, we suggest a 'Soil moisture and salinity station' for Jordan’s climate and soil conditions to provide a more complete picture of saline soil conditions in Jordan. The data collected by these sensors can be used to optimise irrigation schedules, prevent overwatering or underwatering, and improve crop yields with a very good dashboard.

Equipment 2: A Weather station

- Cheap sensors in a low-cost, low-power network;
- Wind Gauge (wind speed and direction);
- Rain Gauge;
- Air temperature;

- Option to connect to networks of weather stations;
- Connect to the internet and smartphone;
- Send real-time data to a cloud-based platform for storage and analysis.

Relevance: In the "Fundamentals of Remote Sensing (RS) data acquisition and mapping" and "Marketing Management" courses, we do not need the expensive weather sensor data. Weather forecasting is not accurate anyway! Moreover, cheap sensors in a low-cost, low-power network like NetAtmo are useful and practical.

Equipment 3: A handheld field hyperspectral sensor plus an RGB Camera

- Integrated RGB camera with a spectrometer (coaxial and synchronised) that acquires spectra registered with RGB images;
- Spectral Range: 350-1100 nm;
- Spectral channels: 2048;
- Spectral resolution: 0.35 nm;
- RGB Camera;
- Wi-Fi wireless control: out-of-box wireless connection;
- Platform independent: web application running on mobile, tablet, and desktop browsers;
- Simple to use in the Field;
- Measurement browsers: an instant exploration of measurements after a data acquisition;
- Dedicated software.

Relevance: In the "Fundamentals of Remote Sensing (RS) data acquisition and mapping" and "Marketing Management" courses, Remote Sensing, monitoring, data recording, and data transfer with wireless control for field and laboratory applications (Ground Truthing, spectral analysis, and quality control) using the combination of RGB camera and hyperspectral sensor.

Equipment 4: IoT solution package for hydroponics system; If the budget allows it.

- Wireless electrical conductivity sensor;
- Wireless pH sensor;
- iConnector IoT gateway;
- Server;
- IoT Globiots software system.

Relevance: The IoT solution package for hydroponics systems is a solution (hardware and software) that applies IoT technology and Sub-GHz wireless technology to monitor water quality of hydroponics systems in smart agriculture applications. The system uses iConnector IoT gateway to collect data from Sub-Ghz wireless water quality sensors (pH and electrical conductivity) and transmit the data to an on-premise server or remote cloud server for storing, analysing, reporting, alarm, monitoring, and managing water quality of hydroponics system.

4.4 PPU Equipment List and Specifications

The necessary equipment list, relevance, and specifications are as follows:

Palestine Polytechnic University (PPU), has selected a "Digestion Unit" for purchase, which was not specifically mentioned in the AgroTec project proposal [1]. However, the other selected equipment by PPU is directly linked to the proposal.

Equipment 1 - Digestion Unit
Brand and link:

- Kjeldahl digester: Link to the product
- Brochure: Link to the brochure

Estimated price (Euro): approximately 9000

As the equipment was not mentioned in the proposal [1], the AgroTec Project Coordinator communicated the required "Equipment Adaptation" with the AgroTec Project officer and got the confirmation on 6th of July 2023 from the EU Project Officer if PPU can proceed with the purchase of this equipment (see below email)?

Project: 101092160 — AgroTec, Equipment

STELZ Alexander <Alexander.STELZ@ext.ec.europa.eu> Thu, Jul 6, 2023 at 12:09 PM
To: Ali Abkar <ali.abkar@agriwatch.nl>

Dear Ali,

Of course, sure; I forgot you mentioned that the AMD was just a test from earlier this year.

All good then; please mention this adaption of purchased equipment when preparing the periodic reporting.

The same applies for the related Deliverable.

Wishing you a good continuation of the project!
Alexander

[Quoted text hidden]

PPU adapted the course from what was originally envisaged in the proposal and agreed to prepare this course as part of the main theme related to disease diagnosis (of crops). A part of the course involves going through some of the crop plant disorders and their effect on nutrient composition. Here this equipment becomes vital to allow proper student and farmer training. Originally, this part was not included, but PPU decided to rather include it to meet a standing issue in Agri-Food problems in Palestine.

Without this equipment, this part of the course would only be approached and covered theoretically, something will add no new things to what originally existed in PPU.

The budget allocated to equipment is located under two categories, but both are under WP3. The first part (which corresponds to Part 4 in the course) is € 9000. The second part allocates € 6000. Both will be used to enhance an existing Center at PPU that serves the Agri-Food sector. The equipment will bring new capabilities to PPU and help transfer new technologies in Agri-Food to Palestine.

The allocated budget will be enough as it is bringing new technologies to an existing centre equipped with all other standard infrastructure (For example, PPU currently has two weather stations, a drone package, and a high-resolution multispectral camera).

In conclusion, the exact equipment name, price, and relevance for three pieces of equipment at PPU (total allocated budget for equipment is € 15000) are:

Equipment 1: Digestion Unit (Kjeldahl digester)

- Estimated price (Euro): approximately 9000
- **Relevance**: key equipment in the diagnosis course, will be used for the nutritional and physiological plant status analysis.

Equipment 2: Agrilive monitoring system, including gateway, the node, and set of sensors

- Estimated price (Euro): 4000
- **Relevance**: Monitoring and data recording and data transfer with IoT for field and soil physical conditions. The needed sensors are 1) soil moisture sensor, 2) water pH, 3) water EC, 4) air temperature sensor, and 5) water level sensor (in the water tank).

Equipment 3: Chlorophyll meter

- Estimated price (Euro): 2000
- **Relevance**: In the diagnosis course, very helpful to measure chlorophyll and nitrogen status in the plant. These two measurements are very useful for the nutritional and physiological plant status.

4.5 PTUK Equipment List and Specifications

The necessary equipment list, relevance, and specifications are as follows:

Equipment 1: Monitoring system Including installation and training

- Gateway:
  - For collecting data and relaying actions
  - High local storage for up to 3 years.
  - Long-range wireless connectivity with the Nodes (Sensors) or over 3G/4G.
  - Supported with real-time Dashboards using Website & Mobile APP.
  - Multi-user authentication levels (User, Admin, and Super Admin).
  - Ability to connect multi nodes.
- Node:
  - collecting data from sensors and sending it to the gateway
  - Powered by solar energy and rechargeable batteries
  - Long-range wireless data transmission
  - Ability to control actuator
- Sensors:
  - soil moisture sensor to measure moisture at 10cm, 20 cm, and 30 cm - for Greenhouse
  - soil EC - for greenhouse
  - soil temperature (-10 to 80c, to measure soil temperature at 10cm, 20cm, and

30cm depths) - Greenhouse
- air humidity (10-100) - greenhouse
- wind speed (0-45m/s)
- wind direction (0-360)
- a rain gauge (3 mil accuracy)
- solar radiation up to 100K lux, 0-2000w/m2, 350-1100 nm spectral range) - one for outdoor and one for the greenhouse
- air temperature and relative humidity (-20c to 100c, 0-100% rh) - one for outdoor and one for greenhouse
- CO2 sensor

Relevance:
The equipment and devices were selected carefully to fit with the project objectives and courses that will be developed during the project. PTUK will focus on the topics: modern agriculture technologies, ICT in agriculture, sensor networks in farming systems, and data mining in agriculture. As shown in the equipment list, a system consisting of sensors, nodes, and gateways will be installed for experiments and demonstration to Palestinian farmers. PTUK team consists of researchers from Agriculture, computer, and communication departments. The use of sensors will be highly utilised by the team because the monitoring system includes a communication unit and needs computer analysis of Agriculture data. The team will put their experience into the development of the courses, they will ask the EU partner to provide training on these units, and they will transfer the training to the PS farmers.

Equipment 4: Colour Printer Laser/multifunction printer

- Print, copy, scan, fax, email
- Print speed black, colour: Up to 27 ppm
- Print quality black: 600 x 600 dpi
- Print quality colour: 600 x 600
- Copy resolution (colour text and graphics): Up to 600 x 600 dpi
- Memory:512 MB
- Paper handling: 50-sheet multipurpose tray
- (Tray 1)
- Tray 2 (250-sheet capacity)

Relevance: The printer will be used by the AgroTec centre for printing the dissemination materials because Palestinian farmers prefer hard copies of training materials and working guides. Training materials will also be printed in the centre to be used for training local staff and local farmers. The printer will be used for administrative services.

5 Next Steps

With the AgroTec training centre equipment activities undertaken so far, the AgroTec project is now set to embark on the equipment procurement process. This phase involves engaging reputable vendors and suppliers to acquire the identified demonstration equipment with a focus on meeting high-quality standards and specifications.

To ensure a smooth procurement process, the local universities and project team will initiate a request for proposal (RFP) to potential vendors, outlining the specific requirements and technical details. This RFP will be carefully crafted, adhering to industry best practices considering the local universities' rules, regulations and conditions, and distributed to qualified suppliers through a transparent and competitive bidding process.

Upon receiving proposals, the project's procurement committee (including the AgroTec Steering Committee), will review and evaluate each submission against pre-established criteria. These criteria will encompass not only technical capabilities and compliance with project goals but also considerations for cost-effectiveness and long-term support.

Once the evaluation process is complete, the project team will proceed with selecting the most suitable vendors and negotiating contractual terms. During this phase, clear communication and collaboration will be maintained with chosen suppliers to ensure timely delivery of equipment and adherence to project timelines.

Furthermore, as part of the next steps, the AgroTec project will plan for equipment installation, testing, and validation processes. These essential steps will involve close coordination between the project team, university partners, and relevant stakeholders to guarantee seamless integration of the demonstration equipment into the training centres.

By managing the procurement process and subsequent equipment deployment, the AgroTec project aims to establish state-of-the-art training facilities that empower agricultural experts with cutting-edge skills and knowledge.

6 Conclusions

In conclusion, the initial six months of the AgroTec project implementation phase witnessed a thorough assessment of the existing infrastructure at local university partners, alongside extensive discussions and evaluations of the necessary demonstration equipment for the AgroTec training centres. The selection process for the required sets of equipment was meticulously conducted, prioritising competence, professionalism, and adherence to best practices.

Having finalised the list, relevance, and specifications of the necessary items, the equipment procurement process is now underway. This marks a significant step towards equipping the AgroTec training centres with cutting-edge tools and technologies.

Overall, the AgroTec project is diligently progressing towards acquiring the essential equipment to facilitate quality training and advancements in the field of agriculture, promoting sustainable and efficient practices in precision farming.

References

[1] AgroTec proposal Number 101092160, AgroTechnology VET Centres to Network and Train Future Farmers in Jordan and Palestine (AgroTec), Erasmus+ Programme, ERASMUS-EDU-2022-CB-VET (Capacity building in the field of Vocational Education and Training (VET)).

[2] EU Funding & Tenders portal, Research Participant Portal (SygMa); https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home