Advanced Specialised Course on

Precision Agriculture for the Mediterranean Region

Third edition

8 September – 5 November 2025

Precision Agriculture (PA) is a management strategy that gathers, processes and analyses temporal, spatial and individual data and combines them with other information to support the management of decisions according to the estimated variability for improved resource use efficiency, productivity, quality, profitability, and sustainability of agricultural production.

CIHEAM Bari, in collaboration with academia, research institutions and companies (technology developers and service providers) is launching the third edition of the international Advanced Specialized Course on "Precision Agriculture for the Mediterranean Region" to lead the transition from traditional to precision agriculture. The course is funded by the Italian Ministry of Foreign Affairs and the Italian Agency for Development Cooperation.

Objectives

The course aims at strengthening the capacity and awareness of the technical staff of ministry administrations, research institutions, and producers' associations in implementing precision agriculture applied to crops in the Mediterranean context.

The course covers the main technology applications for PA with a multiscale and multisectoral approach, providing the basics on processes and tools (e.g., Internet of things-IOT, remote sensing, Geographic Information System-GIS, modelling) that are integrated into spatial and temporal Decision Support Systems (DSSs) intended for administrations and producers.

Learning outcomes

By the end of the course participants:

- ✓ learn to apply a multiscale (at landscape and farm level) and multisectoral approach of PA.
- ✓ can identify the strengths and limitations of PA with reference to the country cropping environment.
- ✓ become familiar with relevant methodologies and technologies to apply spatial and temporal decision making at both land and farm scales.

- ✓ learn how to dialogue with Companies for the identification and use of the most feasible technology and service.
- ✓ develop project proposals to promote planning and application of PA at land and farm scales (depending on the participant' professional role) to improve resource use efficiency, productivity, quality, profitability, and sustainability.

Course structure

The course is organized in 5 Units for a total duration of 8 weeks. Unit 1 is delivered in a blended modality (face-to-face and online learning).

Units include frontal lectures and interactive activities integrated with field visits and discussion sessions with experts from academia and companies (service providers and technology developers), and with farmers.

In addition, a visit to the International Agrilevante trade fair, to be held in Bari, is planned to offer participants the opportunity to engage in the latest innovations in the agro-mechanical sector and to establish direct contact with companies, experts, and internationally renowned professionals.

At the end of the course participants present their projects by an international evaluation committee.

Beneficiaries & Admission Procedures

The course is addressed to technical staff from ministry administrations, research institutions, and producer associations from Mediterranean, Balkan and African countries.

They will be nominated by the competent Ministries, producers' associations and research institution in which they are employed, who will appoint the pre-selected candidates to apply for this course. After the selection made by CIHEAM Bari staff, through the evaluation of files and personal interviews (call conference), at least one participant per country will be selected to attend the course.

The final participants will benefit of a full scholarship covering registration and tuition fees, round air ticket, board and lodging, health insurance, *per diem*.

Programme

Unit 1. **Introduction to PA: a multiscale and multisectoral approach**

The Unit provides the general PA concepts, the data collection processes, methods & tools, the opportunities, applications and constraints.

Unit 2. **Measurement & interpretation of environmental data at territory and farm scale**

The knowledge on the spatio-temporal variability is associated with all aspects of agricultural production through the acquisition of environmental data at territory and farm levels and their processing using different methodologies and technological tools.

Unit 3. **Spatial and Temporal Decision Support System (DSS)**

Environmental data are integrated with the forecasting models in a spatial and temporal DSS with the objective of rationalizing and optimizing the resources and agronomic inputs.

Unit 4. PA Profitability: an economic approach

The economic aspects of PA are structured in a form, through the planning, evaluation, monitoring and development of the actions necessary for the transition from traditional farming systems to evolved systems.

Unit 5. **Project**

Project proposals are prepared based on SWOT analysis and simulation of different scenarios of PA applications in specific territorial farm contexts.

Closing events

Project proposals are presented and evaluated before an international committee. The certificate awarding ceremony will take place at CIHEAM Bari.

Certificate

Participants are awarded a Certificate of Attendance.

Course location

The course is held at CIHEAM Bari and on the farms applying technologies presented in the lectures.

Language of instruction: English