



UNIVERSITÀ DI PISA



CIHEAM  
BARI

# Master in Sustainable Development and Agroecosystem Resilience (SARe)

Academic Year 2025-2026

Jointly organized by Università di Pisa and CIHEAM Bari



## DESCRIPTION

The Master in “Sustainable Development and Agroecosystem Resilience (SARe)” provides an innovative educational path that aims at preparing professionals to tackle the complex challenges to sustain food production in rural areas.

The course focuses on farming and food systems evolution, identifying 1) the agroecosystem as the unit for action, a complex system with economic, social, and ecological components; 2) the local community as the main stakeholder relying on the agroecosystem functions and aiming to conserve and improve its ability to resist and respond to changes. Agroecosystems are studied as farm and landscape systems delivering important services to societies, and that evolve in relation to agri-food policies and people behaviours. Solutions are proposed for their sustainable management with a focus on biodiversity, water, soil resources, and inputs, also in response to challenges related to climate changes. With a view to agroecological transition, the study programme gives attention to ways to promote stakeholders’ participation and empowerment in agroecosystem planning and management; to develop knowledge and innovation systems in rural areas; to establish agri-food networks driven by green and ethical principles. The course presents methodologies and tools for analysing agroecosystems and designing projects for sustainable development of agri-food sector and communities.

A consistent part of the programme is devoted to students’ projects (individual and team works).

At the end of the programme students will master the system thinking required to understand, assess, and promote agroecosystem resilience, and they will be able to:

- ❖ comprehend and analyse the complexity of agroecosystems, their relations with food systems and people’s behaviours, the nature of their development challenges;
- ❖ design and drive community development processes according to agroecological principles to build up resilience against bio-physical and socio-economic stresses;
- ❖ identify and fill stakeholders’ gaps to facilitate transition to resilient agroecosystems;
- ❖ analyse and promote multi-actors’ networks, and agricultural knowledge and innovation systems that support sustainable land management processes, green economy development and social inclusion;
- ❖ support community farms towards greater competitiveness and socio-economic sustainability in the agri-food system.
- ❖ implement action-research and learning approaches through participation, dialogue and vision building processes; use a range of tools for quantitative and qualitative research in rural areas.

## ORGANIZATION

**Duration: October 2025 – October 2026 (60 ECTS)**

**Diploma: First-level University Master**

**LANGUAGE OF INSTRUCTION: English**

## CANDIDATES’ PROFILE

The course is addressed to candidates who have motivations in working in research or services domains, as well as in development programs, oriented to the empowerment of rural communities in sustainable agroecosystem management and who wish to be actively engaged in interdisciplinary and multisectoral challenges.

Candidates shall hold university degrees related to agricultural, environmental, social, and economic sciences, with diplomas awarding at least 180 ECTS (three-year bachelor’s degree). Other study titles and working experience are considered as an added value for selection. Applicants shall have a good knowledge of spoken and written English and easy access to computer facilities.

## ADMISSION

Selection of students is based on:

1. Screening of application-supporting documents
2. Online interviews

**Applications: through the online procedure**

<https://www.iamb.it/education/application/>

**Deadline: 31 May 2025**

## COSTS

**Registration fee:** 200.00 €

**Tuition fee:** 4,000.00 €

## SCHOLARSHIPS

CIHEAM Bari grants full and partial scholarships according to a ranking list. Priority is given to students coming from CIHEAM Member Countries and other Mediterranean, African, Western-Balkan and Middle Eastern Countries.

For more details about SARe:

[www.iamb.it/education/masters/sare](https://www.iamb.it/education/masters/sare)

## Master programme

Unit I – Sustainability and resilience in agriculture and food systems (delivered in distance learning): it frames the concepts of sustainability and resilience applied to agriculture and food sectors. It provides elements for understanding the main agricultural challenges to design solutions and actions towards sustainable and resilient agri-food systems. The multi-dimensions nature of sustainability challenges will be thoroughly analysed, preparing students to reflect on processes for sustainability transitions in agri-food systems.

Unit II – Principles in Sustainable Land Management: the unit describes land and water resources in the frame of farming, highlighting the challenges for their exploitation and conservation. Linkages between rainfall patterns, soil properties, land degradation, desertification, drought and land use planning will be discussed. Students will understand the nature of different agricultural landscapes and will learn how to approach their analysis through multidisciplinary approaches.

Unit III - Agroecology: the unit focusses on the ecological processes at the foundation of agroecosystem functioning to promote agroecological transition to sustainable food systems. It motivates students to comprehend the complexity of the factors and processes that influence the sustainability of agroecosystems. It describes the range of ecosystem services from an agroecosystem perspective, framing them in the farming activities and introducing practices with a special focus on biodiversity management.

Unit IV - Life Cycle Assessment in the Agrifood sector: the unit presents Life Cycle Assessment (LCA) that is one of the main framework, used for the analysis of the environmental impact of a production system within an agrifood sector and the assessment of the environmental sustainability of a product, concerning the use of scarce and natural resources, as well as limited inputs (Finally, raw materials) for agri-food production, matching with multiple management goals.

Unit V - Climate Change and Agriculture: the unit aims to enhance the knowledge of students about the climate change - agroecosystem interaction and ways of adoption of smart, innovative, and integrated mitigation/adaptation strategies and measures. It aims to present the challenges imposed by climate change on agricultural sector and sustainable development of rural area.

Unit VI – Smart technologies and Natural Resource Management: it provides students with basic knowledge on the use of smart tools important for driving decisions towards more sustainable ways of natural resource management in agriculture. Specific focus will be on Remote Sensing, Precision Agriculture, Geographic Information Systems, and Global Position Systems tools for the acquisition, management, processing, analysis and display of spatial data and information.

Unit VII – Innovation and markets in the agrifood system: the existence of services that facilitate the generation and dissemination of knowledge, information, technologies, and experiences is functional for increasing farmers and agri-food actors' capacities. The unit will present how research, extension services, market actors and civil society organisations may work for promoting innovations in rural areas, facilitating the shift towards more sustainable agroecosystems.

Unit VIII – Agrifood networks development : stakeholders' networks are key tools for engaging rural communities in processes for agroecological transition. These can be of different nature such as food value chain, farmers' cooperatives, environmental or social associations. The unit presents the kind of networks important for the sustainability of agroecosystems and resilience of communities, guiding on ways for their analysis and promotion.

Internship: as last commitment of the course, students must undertake an internship in their home country, within an organization working in the field of agriculture and rural development, such as governmental departments, universities or research centers, NGOs, private companies. In this framework, students must implement a practical activity, such as explorative research, rural survey, rapid assessment on specific challenges, relevant for the hosting organization. In conclusion, students will prepare a report on the results of this activity, presenting it to an international board as a final step of their studies. Options for the internship can be proposed by CIHEAM Bari or by students themselves.