Master of Science Programme in
Sustainable Agroecosystems and Resilience (SARe)
Academic Year 2024 - 2025

DESCRIPTION

The Master of Science Programme in "Sustainable Agroecosystems and Resilience" (SARe) provides a two-year curriculum and is 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 will be studied as farm and landscape systems delivering important services to societies, and that evolve in relation with 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 how to promote the 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 development (individual and team works) and to a research thesis implementation (during the 2nd year).

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

First Year: 60 ECTS
Diploma: Master
Duration: October 2024 – June 2025

Second Year: 60 ECTS
Diploma: Master of Science
Duration: July 2025 – May 2026

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 may hold different university degrees related to agricultural, environmental, social, and economic sciences, with diplomas awarding at least 180 ECTS (three-year Degrees), or they must have completed four out of five years of studies, upon agreement between the sending university and CIHEAM Bari (the year attended at CIHEAM Bari is recognized as final to graduate at the university of origin). Work experience and other qualifications will be evaluated and are considered as an added value in the selection process. Applicants must have a good knowledge of spoken and written English and access to computer facilities.

ADMISSION

Selection of students is based on:

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

Applications: through an online procedure
Deadline: 31 May 2024

COSTS

Registration fee: 200.00€/year.
Tuition fee: 500.00€/month (travel, accommodation and insurance expenses not included).

SCHOLARSHIPS

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

LANGUAGE OF INSTRUCTION: **English**

For more details about SARe:
www.iamb.it/education/masters/sare

For further information about the application procedure:
www.iamb.it/education/application

1st year 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 – Land and water resources in agriculture: 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 – Smart technologies: 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 V – 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 VI – Agriculture and environment: the unit aims at presenting the footprint of farming on the environment and students will learn how to use Life Cycle Assessment to assess the impacts of farms. In addition, it will introduce climate change patterns and their effects on agroecosystems, discussing ways of adoption of smart, innovative, and integrated mitigation/adaptation strategies and measures.

Unit VII – Agri-food 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.

Individual project: the student is demanded to undertake an explorative research on a specific challenge related to the course topics, based on literature review and semi-structured interviews to key actors. The research aims at developing students' capacities to identify research questions, collect primary and secondary data, analysing and discussing findings, write a thesis report.

Action Learning project: the Action Learning approach sees students divided into groups and working in a real territory to assess how local actors contribute to agroecosystems sustainability. Activities will consist in observation visits, meetings and interviews with key stakeholders. The project will develop students' capacities to observe, reflect and research on complex systems.

2nd year programme

Research: students must develop a field research thesis related to contents identified within the course topics, under an academic supervision. Priority is given to research activities implemented in the students' home countries, possibly through internships in third organizations. Researches might be oriented to analyse specific landscapes/agroecosystems, food value chains, Knowledge and innovation systems for farmers, using a range of investigation tools that may include informants' interviews and questionnaires, stakeholders' analysis, remote sensing, Geographic Information Systems.

Unit 1 - Socio-economic research: the unit aims at presenting methodologies and tools for implementing qualitative and quantitative research in rural areas. It will focus on the use of structured and semi-structured interviews, and participatory approaches. The unit will include a practical exercise on questionnaire administration.

Unit 2: Project Cycle Management: the unit drives students to deeply comprehend the nature of projects for agricultural development with an agroecosystem perspective. The different phases of designing, implementation, monitoring and evaluation will be deeply described. Students will get practical skills through the analysis of projects and the designing of proposals.