



Master & Master of Science Programmes in Sustainable Agroecosystems and Resilience (SARe) Academic Year 2022 - 2023

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 relations with agri-food policies and people’s behaviors. 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 program 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 the assessment and diagnosis of agroecosystem sustainability and community resilience, and to design and implement projects for sustainable development of agri-food sector and communities.

A consistent part of the program 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 program students will master the system thinking required to understand, assess, and promote agro-ecosystem resilience, and they will be able to:

- ❖ use different research methodologies and tools embedding multidisciplinary and intersectoral perspectives; promote multi-stakeholder participation, dialogue and vision building processes proficiently applying an action-oriented approach;
- ❖ comprehend and analyze the complexity of agro-ecosystems, their relations with food systems and people’s behaviors, 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’ knowledge gaps to facilitate transition to resilient agro-ecosystems;
- ❖ Analyze and promote multi-actors networks, and agricultural knowledge and innovation systems that support sustainable land management processes, green economy development; social inclusion and environmental protection;
- ❖ support community farms towards greater competitiveness and socio-economic sustainability in the agri-food system.

ORGANIZATION

First Year: 60 ECTS

Diploma: Master of CIHEAM Bari

Duration: 9 months (Oct 2022 – June 2023)

Second Year: 60 ECTS

Diploma: Master of Science

Duration: 12 months (July 2023 – June 2024)

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). Working experience and other study titles will be evaluated as an added value for selection. 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 documents part of the students’ application
2. Online interviews

APPLICATIONS through the online procedure (http://online-application.iamb.ciheam.org/users/sign_in)

Deadline: 31 May 2022

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

LANGUAGE OF INSTRUCTION: English

For further information and application procedure:

www.iamb.ciheam.org

FIRST-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 - Agroecology and climate change: the unit focusses on the ecological processes at the foundation of agroecosystem functioning as well as social processes of communities and smallholders to promote agroecological transition to sustainable food systems in the context of the current climate changes and global challenges. 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 III – Water and land resources: the unit describes land and water resource status in Mediterranean environments and the main challenges for their use in agriculture. Soil genesis and characteristics are discussed, introducing key concepts for resources classification and survey, accomplished by technical field visits and practical examples. Linkages between rainfall patterns, soil properties, land degradation, desertification, drought and land use planning will be discussed. Moreover, the unit focuses on conceptual and quantitative understanding of surface and groundwater hydrological processes and explores the practices, approaches and tools, with regards to an integrated surface and groundwater management in agricultural environments.

Unit IV – Sustainable farm management: the unit presents sustainable farm management as the process of making decisions about the allocation of scarce resources for agricultural production, matching with multiple management goals (economic, environmental, social, cultural). Methods for farm performances analysis are described as tools to drive farmers towards competitiveness and sustainability in the framework of the agri-food system challenges. Students will analyse organic and conventional farms, assessing sustainability levels.

Unit V – Knowledge and innovation development: 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 – 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.

Unit VII – Smart tools for the management of natural resources in agriculture: 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.

Individual project: the student is demanded to write an essay on a topic of his/her choice. The activity is aimed at developing students' capacities to select references and elaborate on research statements and questions.

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.

Seminars and laboratories: there will be a series of training activities aimed at integrating students' competencies on themes and topics related to Community resilience, Green Economies and food systems, Participatory Project Design, Gender issues in agriculture.

SECOND-YEAR PROGRAMME

Students who have successfully completed the 1st year will be admitted to participate in the 2nd year program. For the purpose they must develop a 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. Students will be back to CIHEAM Bari for finalizing the research report and attending additional trainings. 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 remote sensing, Geographic Information Systems, stakeholders' analysis, informants' interviews and questionnaires.