Master & Master of Science Programmes in Sustainable Agro-ecosystems and Resilience (SARe) Academic Year 2021 - 2022

DESCRIPTION

The Master of Science Programme in "Sustainable Agro-ecosystems 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 Master course focuses on farming and food systems evolution, identifying 1) the **agro-ecosystem** 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. Agro-ecosystems 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 behaviours. Solutions are proposed for their sustainable management with focuses on biodiversity, water, and soil resources, and in the frame of climate change. Attention is given to how to promote, at local level, stakeholders' participation and empowerment in agro-ecosystem planning and management, and on ways to establish agri-food networks driven by green and ethical principles, and for an agro-ecological transition. The course presents methodologies and tools for assessment and diagnosis of agroecosystem sustainability and community resilience, and how to design and implement projects for sustainable development of agri-food sector and communities.

During the Master of Science Programme, students will conduct research related to contents identified within the Master topics, through internships within selected institutions. Priority will be given to research carried out in the participants' home countries.

At the end of the course 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 analyse the complexity of agro-ecosystems, 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' knowledge gaps to facilitate transition to resilient agro-ecosystems;
- ✓ analyse and promote territorial networks promoting and supporting integrated land management approach, agroecology knowledge, innovation systems to support green economy processes;
- ✓ 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 - Nov 2021 distance learning; Dec 2021 – Jun 2022 at CIHEAM Bari)

Second Year: 60 ECTS
Diploma: Master of Science
Duration: 12 months

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 to 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 sent online by candidates to support their application
2. Online interview

Submission of applications through the online procedure
Deadline: 30 June 2021

COSTS

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

BENEFICIARIES

Master and MSc Programmes are open to candidates of any nationality.

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 and Middle Eastern Countries.

LANGUAGE OF INSTRUCTION: English

For further information and application procedure:
www.iamb.ciheam.org

MASTER PROGRAMME
OCTOBER 2021 – JUNE 2022

Distance learning stage

The course will start with a 2-month distance learning phase with teaching units aimed at developing students' knowledge and mindset on issues related to sustainability and resilience of agro-ecosystems.

Unit I – Sustainability and resilience in agriculture and food systems: 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 - Climate "smart" agroecology: agroecology is the discipline that studies the ecological processes at the base of the functioning of agroecosystems. The course aims to provide a widely applicable knowledge base to increase the resilience and production of agro-ecosystems, in a changing climate scenario. Students will learn how to assess the complexities and challenges of agroecosystems, and ways for sustainable planning of actions to mitigate and adapt to climate change and other global drivers of change.

Face-to-face stage

Students will attend courses and develop a project at CIHEAM Bari premises.

Unit III – Water and land resources: the unit describes the pressures on land and the main challenges for its sustainable use in agriculture, with focus on water and soil resources. Linkages between rainfall patterns, soil properties, land degradation, desertification, drought, and land use planning will be discussed. Practical examples of sustainable land and water management to reverse and mitigate land degradation in various ecosystems will illustrate a range of good management practices.

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 agro-ecosystems.

VI – Agri-food networks: stakeholders' networks are key tools for engaging 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.

Seminars and laboratories: as an integration to the teaching units, there will be a series of intensive training activities aimed at integrating students' competencies. Focuses will be on "Community resilience assessment", "Green Economies and local development", and "Participatory Project Design". A cycle of seminars and workshops will be also focusing on how agroecological approaches and practices address gender inequalities, contributing to the resilience of households, communities, and territories.

The Action Learning project

During the Master course, students will be engaged in a project development adopting the Action Learning approach. Once divided into work groups, students will be faced with real challenges in a multidisciplinary and intersectoral way. The groups will familiarise with a real territory where they will conduct an assessment of the agro-ecosystem resilience and of its status towards an agro-ecological transition. Activities will consist in the analysis of natural resources, farming activities, communities' actions, using a variety of tools for assessment, including SMART technologies, interviews, field visits, and focus groups. The project will develop students' capacities to observe, reflect and research on complex systems, through processes based on multi-actor dialogue, participation, and visioning.