



Master of Science in Agroecology Postgraduate Institute of Agriculture University of Peradeniya



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Abstract – A collaborative effort among six Asian universities has resulted in the creation of the Master of Science in Agroecology degree program. With the aim of bridging the knowledge and skill gap in sustainable agriculture, this initiative, backed by the Erasmus+ program, will be available through Postgraduate Institute of Agriculture (PGIA) from October 2023 onwards. The program's comprehensive curriculum is designed to empower human resources in the field of sustainable agriculture, fostering expertise and innovation for a resilient and sustainable future.

BACKGROUND

The Curriculum Development in Agroecology (CDAE) project is an innovative approach in creating a much-needed Master of Science in Agroecology degree program, a specialized academic field with limited presence in partner Higher Education Institutions' (HEI) graduates and postgraduate offerings. This project aims to bridge this gap by addressing the region's needs and developing an M.Sc. program that integrates ecological principles and knowledge into the study of cropping and farming systems. By incorporating ecological rationality and methods into agriculture, the program seeks to reduce reliance on chemical inputs and associated costs, while complementing watershed and field conservation efforts. It emphasizes planning systems according to local resources and capabilities, optimizing the efficient use of water, nutrients, and genetic resources. The ultimate goal is to equip professionals with the skills and knowledge necessary to design and manage sustainable agriculture practices, making them well-prepared for the challenges and opportunities of the future. Through the CDAE project, a forward-looking M.Sc. program in Agroecology will contribute to the advancement of sustainable agricultural practices and address critical regulatory and policy issues in the region.

APPROACH

A Consortium was established to collaboratively recognize and tackle challenges within agroecology higher education. The partnership comprises institutions such as the University of Peradeniya and Rajarata University of Sri Lanka, Hue University (Coordinator) in Vietnam, Vietnam National University of Agriculture, Benguet State University, and Central Luzon State University in the Philippines. Additionally, Mendel University in Brno of Czech Republic, Polytechnic Institute of Coimbra (IPC) in Portugal, and Novel Group in Luxembourg joined forces. Their combined efforts were dedicated to formulating a comprehensive curriculum and resources. Extensive evaluation of existing curricula, both regionally and globally, was carried out by the Consortium to ensure a tailored and quality-assured program for each participating university. The project's objectives encompass the establishment of virtual agroecology knowledge hubs and agroecology labs in partner countries, facilitating the exchange of information and research. With specialized training, both academic and administrative staff members have been equipped to deliver M.Sc. program content that aligns with 21st-century demands. This collaboration aspires to amplify agroecology education, responding adeptly to the dynamic requirements of sustainable agriculture and environmental stewardship.

GOALS

The goals of the agroecology program encompass addressing significant challenges in developing sustainable agricultural and food systems in Sri Lanka, Vietnam, and the Philippines. Agroecology assumes a pivotal role in achieving the overarching project objective: the creation of enduringly sustainable agricultural and food systems. By advocating for biodiversity promotion and minimizing external inputs, agroecology fosters responsible farming and food systems that reflect societal concerns. It strives to optimize the harmonious interactions among plants, animals, humans, and the environment, with a mindful integration of social dimensions crucial for establishing equitable and sustainable food systems. The agroecology program is designed to achieve the following objectives: (i) enhance ecological resilience of agricultural systems, (ii) promote health and nutrition for both farmers and consumers, (iii) conserve biodiversity and natural resources of farming unit, (iv) strengthen economic stability of farmers, and (v) Mitigate Climate Change Effects. Through the integration of agroecology as a central tenet in sustainable agricultural and food systems, Sri Lanka, Vietnam, and the Philippines can effectively address immediate challenges while concurrently shaping a future characterized by agricultural resilience, public health, and environmental stewardship.

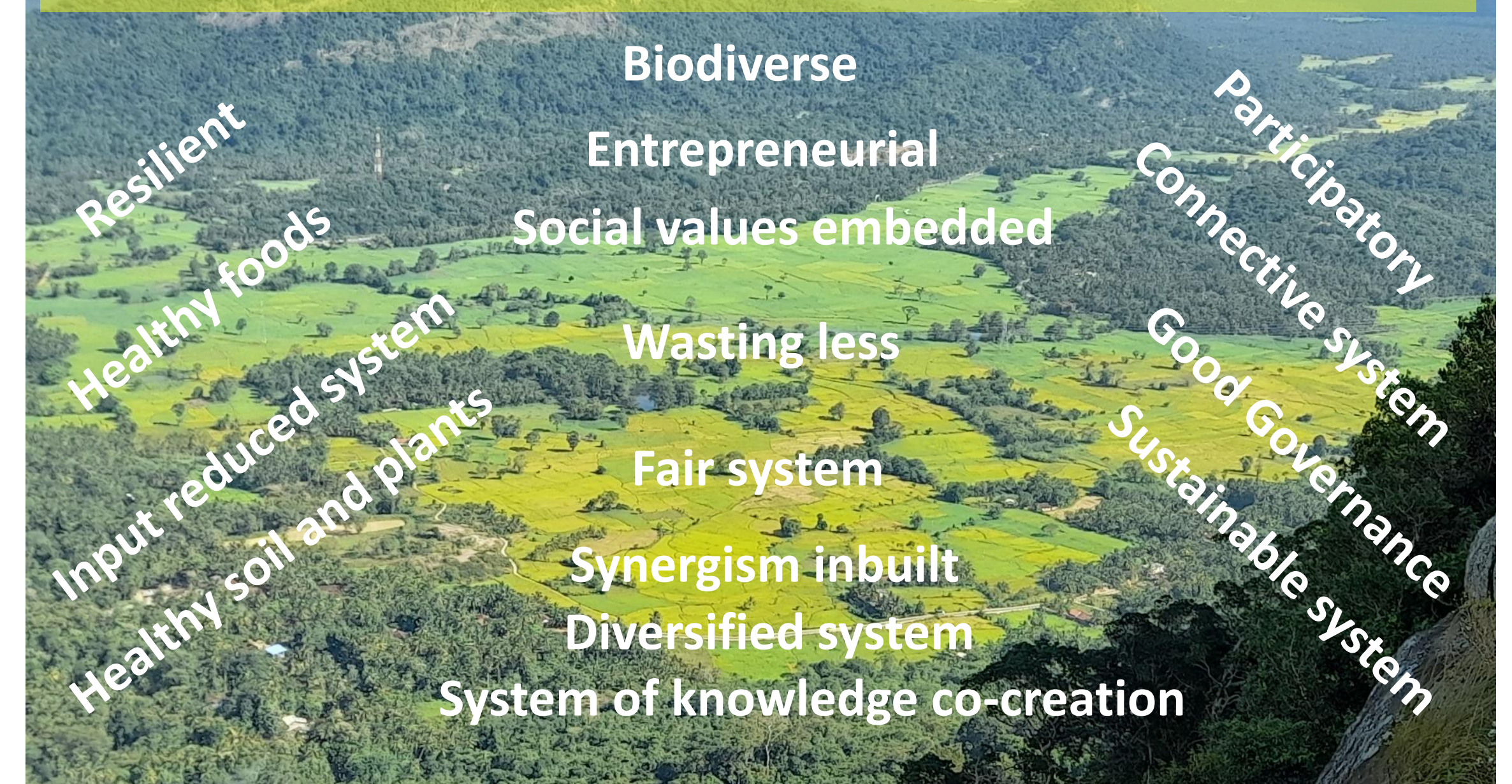
OBJECTIVES

- To educate professionals with essential knowledge, transferable skills and experiences via the developed M.Sc. programme
- To increase their employability skills through the acquisition of specialized knowledge and the participation in integration and internship programmes
- To increase the capacity of academic staff of partner HEIs, improve the level of competencies and skills through the development of a programme customized to their needs of the 21st century
- To develop the professional capacity of the administration staff of partner HEIs through provision of vocational training
- To promote cooperation, exchange of know-how and good practices in the subject area between partner countries, EU, HEIs, farmers, agriculture professionals, policy makers and agricultural industries

OUTPUTS

- Professionals possessing finely honed expertise and advanced skills, nurtured by a groundbreaking Master of Science program, are ready to innovatively address modern challenges within agroecosystems.

Starting in September 2023, the PGIA will provide a two-year M.Sc. program comprising 60 credits, aimed at fostering the development of resilient agroecosystems.



Consortium Partners

Structure of the M.Sc. Programme

Semester	Course Code	Course Unit Name	Credit Value	Status	Existing / New
1	AEC 5101	Agroecology	3	Compulsory	New
1	AEC 5102	Climate Smart Agroecosystems	1	Compulsory	New
1	AEC 5103	Soil Health & Management	3	Compulsory	New
1	AEC 5104	Ecohydrology (Water in Landscape)	2	Compulsory	New
1	AEC 5105	Agroecology Practices for Farming Systems	2	Compulsory	New
1	AEC 5106	Landscape Ecology	2	Compulsory	New
1	AEC 5107	Landscape & Spatial Planning	3	Compulsory	New
1	AEC 5108	Environmental Laws, Policies & Regulations	2	Compulsory	New
1	AEC 5109	Climate Change & Climate Smart Agriculture	2	Optional	Existing
1	AEC 5110	Agroforestry	2	Optional	Existing
1	AEC 5111	Tropical Biodiversity	2	Optional	Existing
2	AEC 5201	Precision Agriculture	2	Compulsory	New
2	AEC 5202	Design & Analysis of Agroecological Experiments	3	Compulsory	New
2	AEC 5203	Environmental Security & Valuation	2	Compulsory	New
2	AEC 5204	Communication for Landscape Ecology	2	Compulsory	New
2	AEC 5205	Managerial Economics	3	Compulsory	New
2	AEC 5206	Scientific Methods in Agroecological Research	2	Compulsory	New
2	AEC 5207	Environmental Aspects of Waste Management	2	Compulsory	New
2	AEC 5208	Ecological Entrepreneurship	2	Compulsory	New
2	AEC 5209	Human Ecology	2	Compulsory	New
2	AEC 5210	Simulation & Modelling of Landscape & Agroecological Systems	2	Optional	Existing
2	AEC 5211	Organic Agriculture	2	Optional	Existing
3	AEC 6101	Group Study on Integration	1	Compulsory	New
3 & 4	AEC 6201	In-Plant Training in Agroecology	2	Compulsory	New
3 & 4	AEC 6202	Research Study	15	Compulsory	New

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