Radiant

Realising Dynamic Value Chains for Underutilised Crops

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Radiant is an Horizon 2020 project involving 28 partners across Europe focusing on agrobiodiversity.

Aim: implementing a suite of strategic and inclusive multi-actor engagement methods to co-develop solutions and tools to ensure that agrobiodiversity in the form of Underutilised Crops (UCs) is supported, enhanced and realised via Dynamic Value Chains (DVCs).

This will be achieved via 8 work packages including activities such as: identify, collect, and multiply the genetic resources of core UCs for breeding and farming; widen UC recognition by capturing their ecosystem services; enhance their processing by co-creating novel food and non-food products.

The project focuses on **Underutilised crops**: spanning from legumes to cereals, edible flowers, vegetables or fruit trees.

Underutilised crops are neglected but valuable species, landrace, variety or cultivar that has limited current use in a given geographic, social, and economic context and that holds great promise to diversify agricultural systems, create resilient agroecosystems, diversify diets, and create economically viable dynamic value chains (for feed, food, and non-food uses).

The **Aurora farms** are 20 case studies of farms adopting one or more underutilised crops and participate in the project to charaterise and replicate Ucs, providing agronomic, economic and socio-cultural data about these Ucs and collaborate in developing Ucs products.

We are involved, as UNISG, in carrying out tasks in mainly 3 work packages:

Improving Performance Through Innovative Breeding & Agronomy — WP 2

Objectives:

T2.1 - Identify, collect and multiply the genetic resources of RADIANT core Ucs

T2.2 - Characterising collections of Ucs

T2.3 - Participatory breeding approaches

T 2.5 - Evaluation of innovative and sustainable agroecological practices for increased UCs value

T2.1 In 2021/22 the UNISG House of Biodiversity collected 23+29 accessions of Common wheat; 12 accessions of Durum wheat; 2 accessions of Barley; 3 accessions of Emmer.

In 2022/23 we plan to multiply more resources of cereals and leguminous from RADIANT partners.

T2.2 In 2021/22 we conducted screening collections for adaptation to different pedoclimatic conditions, sources of resistance to stress of wheat and leguminous crops

T2.3 Selecting within segregating populations:

2 wheat segregating populations are tested *at Il Papaverorosso*, Piedmont- Italy, for intercropping with clover for different years.

T2.5 UNISG is carrying out agronomic trials on wheat to test agroecological practices in organic farms: intercropping with trifolium and other leguminous crops and minimum tillage.

Widening Value Recognition — WP 3

Objectives:

T3.1 promoting the role and work of farmers and farming communities in expanding the value of UCs

T3.2 evaluating the role of ecosystem services delivered by UCs to identify resilience and benefits of Ucs

T3.3 developing a toolkit for fast assessment of ecosystem services by farmers (from 2023)

Methodologies:

T3.1 Shooting videos featuring AURORA farmers and farms (from 2021 to 2023)

T3.2 7 AURORA farms' visits and assessments. Analysis of practices (46 indicators) at farm level and food system level to evaluate 25ecosystem services connected to the adopted UCs (from 2022 to 2025)

3 Aurora Farms visited so far in 2022 (2 more will be visited in 2022, and 2 will be assessed online)

Dikotylon farm
Feneos, Greece

Visit: June 2022
UCs: Vanilla beans, Giant beans, Fava beans, Lentils
Interviews: 4 farmers and 2 managers

Carried out a workshop on the methodology as well in Athens

Bere Barley farms in Orkney
Scotland, UK

Visit: July 2022
UCs: Bere barley
Interviews: 5 farmers and 2 researchers

Carried out a workshop on the ecosystem services assessment methodology at the University of Orkney

Freixo do Meio
Portugal

Visit: August 2022
UCs: Acorn oaks, fruit trees
Interviews: 2 farmers

Farm carachterised by the *montado* agroforestry system where livestock graze the pastures underneath forests of oaks and other fruit trees

Enabling Transformations: Sociocultural Evaluations and Policy Incentives — WP 5

Objective:
Developing a new labelling concept that showcase UCs multifunctional attributes

From 2023 to 2025

Results

The interviews highlighted a variety of practices connected to UCs: some of them don't differ much from those applied with other crops, others imply innovative, sustainable and ecological practices.

The agricultural system in which the UCs are included play a major role in determining ECs: the choice of combining the use of UCs (genetic diversity) with practices such as intercropping, rotation.

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