

IT-ARGF

Innovative Training - Augmented Reality for Green Food

Project result 2

Final report for VET educators

- summary of key findings -



Project. Reference no. 2021-1-MK01-KA220-VET-000025293

The Commission in its EU biodiversity strategy to 2020 individualized a set of Actions towards the preservation of biodiversity. Among those the Action 9 “Better target Rural Development to biodiversity needs and develop tools to help farmers and foresters work together towards biodiversity conservation” highlights the necessity to develop rural strategies and programmes tailored for regional and local levels. Most of the countries have adapted EU regulations for biodiversity protection.

Human activities have an impact on natural regions, and the preservation of biodiversity and the production of organic food are linked. The ultimate goal is to boost knowledge and abilities in the fields of organic food production and improve biodiversity through collaborative action.

Sustainable organic food production and organic farming are a vital part of preservation, food production and supply, and farming, and their uptake and development are essential for a well-functioning, safe and sustainable economy and society.

When considering the challenges in this area, it should be noted that, as production processes, these activities involve human intervention in the natural environment to produce food, and that the main challenge is therefore to raise awareness among farmers and consumers. Sustainable agriculture means farming using sustainable methods based on an understanding of the ecosystem.

Farmers need to be educated to prevent farmland biodiversity disappearing and maximize crops capacity by providing tools and knowledge through technology. The lack of training in the biodiversity sector is a major issue, and there is a need for system-based change in education to increase creative and practical training. To make the needs assessment more tangible, a delimitation of the study aspects has been carried out.

Nature conservation, biodiversity conservation, environmental protection, and conservation of Based on the information provided, we can conclude that digital learning tools and opportunities including the availability of e-learning materials, online training and best practices in the field of food production and biodiversity conservation vary significantly between the countries Hungary, Greece, Turkey, North Macedonia and Spain. Variations between partner countries may exist due to factors such as climate, natural resources and government policies, but the commitment and the path taken by the countries involved to contribute to European policies regarding the digitisation of the agricultural sector and the promotion of sustainability, especially from the education and training of farmers or other stakeholders, is appreciated.

The inclusion of augmented reality in different fields means having the advantages related to its use, as it is a technology that allows virtual elements to be superimposed on the real world through technological devices such as smartphones or smart glasses. Specifically in the field of organic food, augmented reality offers a number of opportunities and tools for digital learning, so this project aims to increase the level of skills in the fields of organic food production and contribute to the improvement of biodiversity through a technological framework for joint action, where augmented reality will be included.

Some of the best ways in which augmented reality can be used for learning about organic food are:

- Identifying organic food,
- Visualisation of production processes,
- Carbon footprint education

In general, augmented reality, by allowing users to interact with virtual information and visualisations in real time, helps to improve understanding and informed decision-making on organic



food.



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From the research in the project partner's countries it is obvious that there is a need for training of the farmers. Some of the useful topics for training : Introducing of new Innovative Technology and Technical skills improvement; Business and Managerial skills improvement; Improvement of the quality, quality standards and quality system implementation; Sustainable Management of Natural resources, Landscape conservation and Environment protection. Most attractive topics are: New agriculture production technologies, Good Agricultural Practice, Entrepreneurship, Alternative energy sources, Farm Management and the introduction of farm accounting, Farmer forms of association-cooperatives, new technologies for processing and packaging, Effect of climate change on future agricultural production, Organic production-regulative and practical experience and Development of new products in food industry.

Each country of the project partners has described the used mentoring instruments and strategies in their country. Measuring each country's organic production system, questioning its action plan and practices for organic food production provides a reflection of each country to the readers.

In Turkey, there are VET centers that deliver training for farmers in accordance with environment protection and protection of biodiversity, there are many governmental and nongovernmental organizations that provide digital literacy to farmers. However, most of them are related to organic farming and good farming practices.

In Greece, there is a national strategy for agriculture and food, which prioritizes organic food production in Greece, and gives support of lower taxes to farmers and producers but hasn't mentioned any digital learning curriculum.

In N.Macedonia, there is a low level of implementation of non-formal education by adult education centers, employment centers, etc. in each of the agricultural areas in the country. Also, there is lack of educational materials in the field of organic production and lack of exchange of information from the region. The categories of educational activities are divided into two as Non-formal education (training, courses, and seminars) and Formal education (postgraduate and doctoral studies).

In Hungary, agricultural training which was only focused on higher education as an independent organic farming course is no longer available. There are no forms of independent training and curriculum and regarding the digital curriculum, there are no specific tools developed.

In Spain, there are numerous Spanish organizations offering online training in the agricultural sector. However most of them provide online trainings without providing the digital curriculum privately and at a cost. Currently, organic and sustainable agriculture seems to be on the rise in Spain, so there are variety of training courses on the subject.

Based on the research conducted by project partners, we can conclude that digital learning tools and opportunities including the availability of e-learning materials, online training and best practices in the field of food production and biodiversity conservation vary significantly between the countries Hungary, Greece, Turkey, North Macedonia and Spain.

Variations between partner countries may be due to factors such as climate, natural resources and government policies, but the commitment and the path taken by the countries involved to contribute to European policies regarding the digitisation of the agricultural sector and the promotion of sustainability, especially from the education and training of farmers or other stakeholders, is appreciated. There is therefore a wide range of e-learning materials available in the five countries participating in the project, including videos, manuals, courses and online training programmes. In general, these materials are designed to help farmers and food producers improve their farming practices and protect biodiversity. Spain and Hungary appear to have a broader and more developed offer in this area, with specific courses and programmes for different agricultural sub-sectors. Countries also have different approaches to best practices in food production and biodiversity conservation. For example, North Macedonia has developed a certification system for





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organic products, while Greece has a strong focus on organic olive and olive oil production. Hungary and Spain have a wide variety of agricultural crops and sub-sectors, which is reflected in the diversity of their online training materials. Overall, we can conclude that each country has its own strengths and weaknesses in terms of

offering e-learning materials, online training and best practices in food production and biodiversity conservation.

However, all countries are committed to improving agricultural practices and protecting the environment, and are making significant efforts to promote online education and training in this area.

