ORGANIC.EDUNET – A PROJECT OF EUROPEAN INITIATIVE THAT AIMS TO RAISE AWARENESS ABOUT ORGANIC AGRICULTURE AND AGROECOLOGY IN AGRICULTURAL UNIVERSITIES AROUND EUROPE

ORGANIC.EDUNET – UN PROIECT INIȚIAT DE UE CARE ÎȘI PROPUNE SĂ SPOREASCĂ INTERESUL PENTRU AGRICULTURĂ ECOLOGICĂ ŞI AGROECOLOGIE ÎN UNIVERSITĂȚILE AGRICOLE DIN ÎNTREAGA EUROPĂ

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***Abstract**: Organic.Edunet is an international project which will help universities and schools across Europe and beyond to make easier and better use of Internet technologies in order to enhance their educational offerings in the field of Organic Agriculture and AgroEcology (more information: http://www.organic-edunet.eu.). It will deploy a multilingual online environment (the Organic.Edunet Web portal) that will facilitate end-users' search, access and use of the content in the learning repositories. In this way, digital content that can be used to educate European Youth about the benefits of OA and Agroecology, will become easily accessible, usable and exploitable.*

***Rezumat:** Organic.Edunet este un proiect internaţional care îşi propune să ajute universităţile şi şcolile agricole din Europa în utilizarea uşoară şi performantă a tehnologiilor de Internet în vederea îmbunătăţirii ofertelor educaţionale în domeniul agriculturii ecologice şi agroecologiei. El va dezvolta un mediu multilingual on-line (Organic.edunet Web portal) care va facilita utilizatorilor căutarea, accesul şi utilizarea unui conţinut educaţional digital pentru învăţare. Pe această cale, conţinutul digital poate fi utilizat pentru educarea tineretului european despre beneficiile agriculturii ecologice şi agroecologiei, care vor deveni mai uşor accesibile, utilizabile şi exploatabile.*

***Key words:** Organic.Edunet project, organic agriculture, agroecology, Internet*
***Cuvinte cheie**: proiectul Organic.Edunet, agricultura ecologică, agroecologie, Internet*

INTRODUCTION

The agroecology is defined as the application of ecological concepts and principles to the design and management of sustainable agroecosystems, provides a framework to assess the complexity of agroecosystems.

From a management perspective, the agroecological objective is to provide a balanced environment, sustained yields, biologically mediated soil fertility and natural pest regulation through the design of diversified agroecosystems and the use of low-input technologies. In essence, the optimal behavior of agroecosystems depends on the level of interactions between the various biotic and abiotic components. By assembling a functional biodiversity it is possible to initiate synergisms which subsidize agroecosystem processes by providing ecological services such as the activation of soil biology, the recycling of nutrients, the enhancement of beneficial arthropods and antagonists.

Agroecology provides guidelines to develop diversified agroecosystems that take advantage of the effects of the integration of plant and animal biodiversity such integration

enhances complex interactions and synergisms and optimizes ecosystem functions and processes, such as biotic regulation of harmful organisms, nutrient recycling, and biomass production and accumulation, thus allowing agroecosystems to sponsor their own functioning. The end result of agroecological design is improved economic and ecological sustainability of the agroecosystem, with the proposed management systems specifically in tune with the local resource base and operational framework of existing environmental and socioeconomic conditions. In an agroecological strategy, management components are directed to highlight the conservation and enhancement of local agricultural resources (germplasm, soil, beneficial fauna, plant biodiversity, etc.) by emphasizing a development methodology that encourages farmer participation, use of traditional knowledge, and adaptation of farm enterprises that fit local needs and socioeconomic and biophysical conditions.

Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.

Organic agriculture can be defined as an approach to agriculture where the aim is to create integrated, humane, environmentally and economically sustainable agricultural production systems. Maximum reliance is placed on locally or farm-derived renewable resources and the management of self-regulating ecological and biological processes and interactions in order to provide acceptable levels of crop, livestock and human nutrition, protection from pests and diseases, and an appropriate return to the human and other resources employed.

Reliance on external inputs, whether chemical or organic, is reduced as far as possible. In many European countries, organic agriculture is known as ecological agriculture, reflecting this reliance on ecosystem management rather than external inputs. The popularity of organic farming is gradually increasing and now organic agriculture is practiced in almost all countries of the world, and its share of agricultural land and farms is growing. As per a recent report of International Federation of Organic Agriculture Movements (IFOAM) the total organically managed area is more than 24 million hectares world-wide Organic farming is practiced in approximately 130 countries of the world and the area under organic management is continually growing.

MATERIAL AND METHOD

Organic.Edunet project (http://www.organic-edunet.eu) is a European initiative that aims to raise awareness about organic agriculture and agroecology in agricultural universities around Europe. Organic.Edunet wants to facilitate access, usage and exploitation of digital educational content for teaching relevant topics.

This project is funded under the *e*Content*plus* programme, a multiannual Community programme to make digital content in Europe more accessible, usable and exploitable.

The consortium project consists of 15 contractor organizations from 10 countries: Greece (The Greek Research and Technology Network - coordinator, The Agricultural University of Athens, Ellinogermaniki Agogi), Spain (The University of Alcalá), Sweden (The Royal Institute of Technology), Norway (The Norwegian University of Life Sciences), Austria (Austrian Federal Ministry of Education, The Arts and Culture, BG&BRG Schwechat), Estonia (The Miksike Learning Folders, Estonian University of Life Sciences), United Kingdom (The University of Nottingham), Hungary (Corvinus University of Budapest, Association for Hungarian Organic Farming), Romania (The University of Agronomic Sciences and Veterinary Medicine Bucharest), Germany (The University of Duisburg-Essen).

RESULTS AND DISCUSSIONS

The main objectives of the Organic.Edunet project are the following: to support stakeholders producing content about Organic Agriculture (OA) and Agroecology to publish it in an online federation of learning repositories, described according to multilingual, standard-complying metadata; to deploy a multilingual online environment (the Organic.Edunet Web portal) that will facilitate end-users' search, retrieval, access and use of the content in the learning repositories; to study educational scenarios that will introduce the use of the Organic.Edunet Web portal and the content in the repositories, in order to support teaching of the relevant topics, in high-schools and agricultural universities; to evaluate project results in the context of both focused pilot trials and open validation events which will take place in various European schools and universities; to create organisational structures that will reinforce the cooperation of stakeholders in this particular content area and will support the sustainability of project results.

Organic.Edunet aims to enhance and support current educational practices in formal education settings (such as national or cross-European teaching of Organic Agriculture and Agroecology topics on a school and university level) by examining specific educational scenarios, supporting content publishers, teachers and learners with particular software tools and services that will facilitate publication, access and use of digital content, as well as by promoting the further cooperation of the content providers and the potential content users. Furthermore a specific quality guideline for the field of Organic Agriculture and Agroecology will be produced and recommendations for a Quality Certification Mark for OA and Agroecology will be suggested. The project will support this task with cooperation with the European Foundation for Quality in E-Learning (EFQUEL).

Organic.Edunet focuses on a business sector where ICT adoption and digital content development and exploitation is still lagging behind, in order to create links between content stakeholders such as educational institutions, non-profit organisations, R&D projects, and private publishing companies, reinforcing their cooperation with potential content users (e.g. teachers, tutors, pupils, students) and proving the business case for promoting their content online.

Consumer demand for food quality and safety, as well as, society's demand for more sustainable development, provide new opportunities for the agricultural sector. Consumers' fears, triggered by food scares and technological developments such as genetic modification and food irradiation, have been translated into serious concern about food safety, increasing demands for quality assurance and more information about production methods. In addition, public awareness of the irreversible damage done to the environment by practices that lead to soil and water pollution, depletion of natural resources, and destruction of delicate ecosystems, has led to calls for a more responsible attitude towards our natural heritage.

Against this background, Organic Agriculture (OA) has come to the fore as an agricultural approach that can not only produce safer agricultural products but is environmentally sound too. In this light, the European Action Plan for Organic Food and Farming (2004) has identified the need for actions supporting the training and education of all stakeholders related to OA, covering aspects related to production, processing and marketing of OA products and their benefits, plus targeting OA products as the preferred option for both producers and consumers.

The European Commission, through its strategic Action Plan and a number of funded initiatives of the 6th FP has aimed at the promotion and further understanding of OA concepts and methods, and the cultivation of a consumer culture that will facilitate the development of the OA products market.

In addition, large international organisations such as the United Nations' Food and Agriculture Organisation (FAO) and the International Federation of Organic Agriculture Movements (IFOAM), along to non-profit associations such as the Soil Association in UK (http://www.soilassociation.org), drive their own awareness and education initiatives for the promotion of OA methods and practices around the world. Furthermore, agricultural universities around the world have included OA-related and Agroecology courses in their educational programs, aiming to prepare agricultural professionals that may support and guide farmers through the selection and proper adoption of OA methods.

These developments have led to an increasing production of related content in an electronic format. This content aims to support the goals of each initiative, either through promoting OA and educating producers/farmers and consumers about OA benefits, or through the education of agricultural experts about the theory, methods and practices of OA (and Agroecology, in general).

The European Action Plan for Organic Food and Farming (2004) identifies the need to increase consumer awareness & education about OA, as well as to provide education for all actors of the OA chain (e.g. farmers, processors, agricultural experts, etc.). Organic.Edunet focuses on two particular dimensions: to familiarize children with the concepts and benefits of OA and Agroecology, through formal educational systems, starting from compulsory and secondary education and to educate young agricultural experts (including agricultural engineers, agricultural economists, extension officers, etc.) about the methods and practices of OA and Agroecology, through formal educational systems of higher education (i.e. agricultural universities).

To further promote the familiarization of consumers with the benefits of OA for their health and for the environment, the most dynamic consumer groups have to be properly educated. Young people at all stages of formal education have to be carefully approached through relevant educational programs in the curricula of all kinds of educational institutions, from elementary schools to relevant university departments. But apart from raising the awareness and education level of consumers, agricultural professionals have to be also properly educated. By agricultural professionals we refer to the different types of future agricultural experts (e.g. natural production experts, veterinary experts, agricultural economists, extension officers, etc.) who study in agricultural universities around Europe, and who should be provided with a wide range of information related to OA and Agroecology theories, methods, practices, and economic/environmental impacts. Most European agricultural universities have already included relevant courses in their programs, and university teachers have developed an important amount of content resources, but these are usually collected at an individual level. A great unexploited opportunity therefore exists in appropriately collecting, organising and online offering of quality and multilingual content on OA and Agroecology that may support current or future educational activities in the formal educational systems of Europe.

The Organic.Edunet Web portal as an open-access service for European educational institutions can offere the multilingual search, retrieval, and recommendation services for the content in the federated repositories. Targeted users will be the user communities already addressed by the project (high-school students and teachers, as well as agricultural university students and teachers). More specifically, the Organic.Edunet portal is expected to be freely used by all European schools and agricultural universities, in order to help potential users search and locate content resources of interest.

The provision of the Organic.Edunet suite of learning repository tools as a free service to content providers of OA and Agroecology resources. The targeted users are all types of content producers aimed by the project (OA teachers, international organisations, private publishers), who will freely use the tools in order to create their own learning repository,

populate it with content, publish it online and connect it to the Organic.Edunet federation. Further extensibility or update of this suite of tools is expected to be carried out either on a voluntary/research base (by the technical partners of the project) or on demand by some content producer that wishes to have a customised product for his needs.

Availability of the content itself after the end of EU funding may depend on each individual repository. The repositories of the project are expected to belong in two categories: repositories with freely offered content (such as the ones offered by educational institutions), and repositories with content that requires payment to access and use (such as the ones offered by private publishing houses).

CONCLUSIONS

1. The project results have a large exploitation potential, due to the variety of involved stakeholders. Two main stakeholders may be generally identified as potential users of the Organic.Edunet results: content producers and users of content.

2. Organic.Edunet contributes to both the social objectives of the Community of improving the quality of life of European citizens and facilitating their access to high-quality information.

3. The content of web-portal aims to support the goals of each initiative, either through promoting OA and educating producers/farmers and consumers about OA benefits, or through the education of agricultural experts about the theory, methods and practices of OA (and Agroecology, in general).

4. Organic.Edunet focuses on achieving interoperability between the digital collections of OA and Agroecology content that producers in various EU countries have developed, as well as facilitating publication, access, and use of this content in multilingual learning contexts through a single European reference point. In this way, digital content that can be used to educate European Youth about the benefits of OA and Agroecology, will become easily accessible, usable and exploitable.

LITERATURE

1. ALTIERI M.A., *„Biodiversity and pest management in agroecosystems”*, Hayworth Press, New York, SUA, 1994.
2. *** Council Regulation (EC) No 834/2007, *„Organic production and labeling of organic products and repealing Regulation* (EEC) No 2092/91, EU Commission, 2007.
3. ***www.organic-edunet.eu, Web-site of Organic Edunet Project, 2008.