

Enhancing secondary education courses to develop skills for future ecofarmers

Klontza E.E.^{1,*}, Lekkas D.F.¹, Galogiannis K.¹, Gkoltsiou K.¹, Alexopoulos C.², Cainadas E.¹

¹Waste Management Laboratory, Department of Environment, University of the Aegean, 81100, Mytilene, Greece

²Department of Information & Communication Systems Engineering, University of the Aegean, 83200, Samos, Greece

*Corresponding author: rkontza@gmail.com

Abstract

A series of courses in environmental education, specialized in sustainable agribusiness, was given in the framework of the «Geo-ergon Paideia» project (in Greek: Γεωργών Παιδεία – Γεωργών Παιδιά). «Geo-ergon Paideia» was a transnational exchange program which aimed at training school students of the secondary level of education in becoming future eco-farmers. The main purpose of this work was to implement a sustainable strategic partnership between European universities - research centres, municipalities and schools in order to reinforce the concept of agricultural education and sustainable development in rural areas through an integrated interdisciplinary approach. It was addressed to students attending the second class of lower secondary school (gymnasium), who live in the selected rural areas in Greece and Romania. Apart from the students, the participants of the project (around 200) include farmers, the parents of the students, local and governmental authorities, young entrepreneurs, academic professionals, researchers and stakeholders. Project implementation included learning/teaching activities and multiplier events and has led to the production of intellectual outputs with open courses and entrepreneurship guide for teachers amongst others. The intellectual outputs produced by the project are available to the wider public through the e-learning platform, managed by the University of Aegean.

Keywords: environmental education; sustainability; eco-farming; experiential learning;

1. Introduction

Currently, 2.5 billion people depend on agriculture worldwide, while the average age of farmers is 55 years. In Europe, 1/3 of farmers is under 35 years old while the population involved in the agriculture sector is decreasing. The agricultural sector needs to attract new members, support young people to become farmers. As a career option, agriculture is not usually seen as a viable & economically sustainable path. However, agriculture does not necessarily mean subsistence farming, even for small (family size) farms. Strengthened/targeted education could provide the means to young people to support innovative changes in family farms & sustain their income. Young people can contribute to the development of the agricultural sector by applying new technologies & tools to current practices. Urbanization has contributed to the gradual ‘crowding out’ of rural areas putting significant pressure to the primary sector, which constitutes an important aspect of Balkan and Mediterranean countries’ economy. Especially

in countries that have been affected by unemployment, manpower shortages are evident in the agricultural sector. Most young people, explore their carrier options in the city centres, frequently ending up working in areas irrelevant to their studies. In addition, young people with fewer opportunities, tend to leave school early, seeking temporary employment in low-skilled jobs in order to contribute to the family income. Therefore, an increasing gap between manpower needs in the agricultural sector and skills/expertise of young people, who could find a professional prospect by “investing” in their homeland. In most cases their families are involved in the agricultural production & they could provide an “active” asset - their land and production - to attract & retain young people. According to Reinventing Agricultural Education for the Year 2020 “agricultural education envisions a world where all people value and understand the vital role of agriculture, food, fiber, and natural resources industries in advancing personal and global well-being” (NCAE, 1999). Furthermore, environmental education programmes can contribute to raise awareness on critical issues (Palmos et al., 2021), while experiential learning increases its impact (Bouhazzama and Mssassi, 2021).

The program addresses students in selected rural areas in Greece and Romania. The main aim is to stimulate school students to capitalize on existing assets, contribute to the sustainable development of their rural region.

2. Description of the project

«Geo-Ergon-Paideia» is a transnational exchange project that started on September 2016 and ended in September 2018 (<http://www.geo-ergon-paideia.eu/>). Its structure is presented in Figure 1.

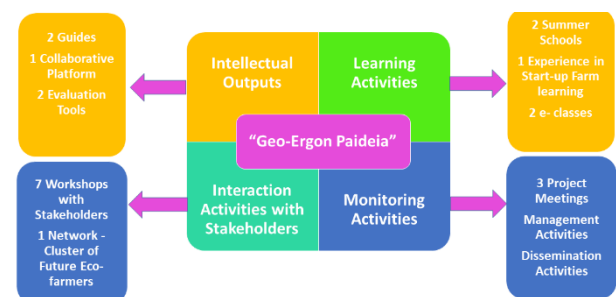


Figure 1. The structure of Geo-Ergon Paideia

The project was coordinated by the University of the Aegean (Greece), while the consortium included two secondary schools (Geraki, Lakonia, Greece and Murfatlar, Romania) as well as Municipality of Evrotas (Greece) and Murfatlar

(Romania), IZES gGmbH (Germany) and the NGO “KEAN” - Cell of Alternative Youth Activities (Greece).

Its main objectives were:

- to set up a series of online open courses on eco-farming & start-up business to teach agricultural entrepreneurship to school students,
- to provide a learning environment for current/future eco-farmers in innovative entrepreneurship,
- to support school students, through capacity building, to ensure the sustainability of the natural environment, the development of the local economy,
- the development of a network which includes students, stakeholders, entrepreneurs, academic professionals to promote innovation & sustainability in the agricultural sector in rural regions,
- the enhancement of transnational cooperation among schools in Europe.

2.1 Learning, Teaching and Training Activities

The organised activities included two summer schools, one specialised study visit (experiential learning) and a short training activity in parallel with the final networking event. Summer schools were held in Greece and Romania and the lectures were given by academics and experts. The experiential learning activity was organized by IZES gGmbH in Bliesgau UNESCO Biosphere Reserve (Germany). The last training activity was materialized in Athens in parallel with the closing session of the project and was focused on actions contributing to the development of urban agriculture in a sustainable city. The curricula layout for the teaching activities is presented below:

- ✓ Brand my Land
- ✓ People and Environment
- ✓ Eco-farming
- ✓ Sustainable Rural Lands
- ✓ Building sustainable Agro Business
- ✓ Go Digital
- ✓ Tourism in Rural Areas
- ✓ Learn by Doing
- ✓ Leave your home sofa
- ✓ Work cooperatively
- ✓ Start up your Farm
- ✓ Think as a Leader
- ✓ Learn from Stakeholders

2.2. Multiplier events

Eight Multiplier Events (workshops with local stakeholders) were organised, in total, in the participating countries. More than 300 stakeholders attended those events; local representatives, farmers, entrepreneurs and trainers from all participating project groups. The Multiplier events enabled all the interested parts to participate in an open dialogue for the development of the eco-farming business sector, the exchange of knowledge, the transfer of good practice experiences and innovative methods of entrepreneurship. Questionnaires were used to ensure the workshops' efficiency and provide feedback to the project. Business Plans were developed by students with the support of their teachers as a result of teamwork (teams of 3-4 students). The development of Business Plans was enhanced by the Multiplier Events, and the related guidelines prepared by the University of the Aegean with a related deliverable. All business plans were presented and

awarded at the final Networking Event.

3. Results and discussion

The results of the project can be summarized as follows:

- ❖ Awareness was raised on professional perspectives in the agricultural sector
- ❖ The “Brand my land” concept was promoted
- ❖ The school students were introduced to basic concepts of entrepreneurship.
- ❖ An integrated educational approach towards a rural sustainable development concept
- ❖ The adoption of positive attitude by students towards launching their own farm company.
- ❖ Transfer of entrepreneurship-related knowledge and experience
- ❖ Teamwork in classroom was encouraged
- ❖ Training of teachers in supporting students on formulating and developing their business plans

Students have travelled to the partner countries for carrying-on learning/teaching activities, so they had the chance to attend courses in English, although is not the native language for none of them and to collaborate with tutors and students from abroad. They obtained information and knowledge on topics that are not included in their school educational program.

The following *Intellectual Outputs* were delivered:

- *The “e-learning platform and collaboration space”* which is accessible through <https://eclass.aegean.gr/courses/RU103/>. Hosting is provided by the University of the Aegean
- *“Open courses for School students: “Start-up Farm” – Phase I and II (new curricula).*
- *“E-Handbook for Open courses “GEO-ERGON PAIDEIA” (e-guide for teachers*
- *“Network-Cluster of Future Eco-farmers”*. Project beneficiaries and the general public have the opportunity to participate in this cluster and take advantage of the project tools and results. Forty-three Memorandums of Cooperation were signed between the consortium and stakeholders.
- *“E-Guide for Teachers and Policy Makers - Entrepreneurship for Young Eco-farmers”*. Recommendations are based on the material provided in the Web Platform, the Multiplier Events, the provided classes and evaluation results of the Project.

4. Conclusions

The implementation of the project highlighted the benefits of introducing eco-farming entrepreneurship elements in school education in rural areas. The selected methodology was proven to be efficient as participating groups of students managed to uptake the knowledge and transfer it through their projects - business plans. A critical step is related to the continuation of such an approach that has been widely accepted by the stakeholders' network that has been formed.

References

- Bouhazzama M. and Mssassi S. (2021), The impact of experiential learning on Environmental Education during a Moroccan summer university, E3S Web of Conferences 234, 00031.
- National Council for Agricultural Education (1999), Reinventing Agricultural Education for the year 2020
- Palmos D., Papavasileiou C., Papakitsos E., Vamvakeros X., Mavrakis A. (2021), Enhancing the environmental programmes of secondary education by using web-tools concerning precaution measures in civil protection: The case of Western Attica (Greece), *Safety Science*, 135, 105117