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GEO ERGON PAIDEIA "START UP FARM: SKILLS FOR FUTURE ECO FARMERS"

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COURSE DESCRIPTION

PEOPLE AND ENVIRONMENT

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Revision History

Revised by	Date	Revision Control	Revision Reason
Kostas Gkalogiannis		First Version	Initial Corrections
Demetris F Lekkas		Second Version	Proofreading
…			

Course title

"People and Environment

Name of trainer/s

Purpose of the course

Understanding the interdependence of natural, economic, and environmental parameters in the implementation of new, environmentally compatible, agricultural practices that protect the income of future farmers and agricultural capital.

Objectives of the course

(What skills the students are expected to acquire after the end of the course)

- Understand the inseparable link between the protection of the natural environment, agriculture and consumers' health.
- Seek to solve problems and questions by using all available media but mainly, the platform and the internet.
- Get acquainted with ways of searching for information at local, national, European and global level.
- Choose the most reliable sources of knowledge and information.
- Be able to understand agricultural practices and technologies compatible with environmental protection.
- Share experiences and knowledge with students and teachers from other regions and countries.
- Understand the benefits of using different cultivation practices and their results.
- Incorporate environmental parameters into their potential future business activities.
- Seek new and innovative research practices in the search for solutions.
- Develop ideas and opinions in an audience.

Teaching and Learning Methods

Teaching approach

A comprehensive transfer of knowledge and experiences to students through mental and experiential understanding of the convergence relations between the environment, agriculture and the economy.

Delivery method

Face-to-face and distance learning.

Use of information and communication technologies

Use of ICT in teaching, in lab education, in communication,
- Setting up an information network for the study area.
- Organization of contacts and exchange of views and information.
- Demonstration and possible handling of new technical means of organization and monitoring.

Course Content

1. Sustainable agriculture - General characteristics and principles

- Clarification of key concepts such as the concept of "sustainability" with concrete examples – e.g. Ways of scrubbing a forest so as to maintain its regenerative capacity.
- Economy and protection of natural resources.
- Ecological balance.
- Healthy living conditions for farmers.
- Upgraded end product quality.
- Possibilities for the development of eco-tourism and agro-tourism activities, units and enterprises.
- Business and environmental behavior of the farmer based on new evidences.
- Developing the concept of rational management.
- Enhance the concept and importance of the 'agro-ecosystem'.

(As in the first paragraph, the concepts will be briefly analyzed and given at least one example).

2. Sustainable agriculture - applications

- Local, national and European level.

With regard to the local level, examples that are similar to the environmental and economic conditions in the pupils' place of origin will be preferred. Laconia has a combination of environmental elements that we encounter in many areas of the country such as, mountain ranges, small valleys, eco-tourism development potential, important historical background.
With regard to the national and European level, examples will be given which show the interdependence of national to European and wider space.
For example, combining Sustainable Agriculture with the development of the European Network for Protected Areas NATURA 2000. In Greece, the protected natural areas, cover about 25% of the countries' territory.
The relative eco-development will be based on common goals, practices and benefits.

- Use of alternative farming practices and technology.

- Fertilizers and pesticides (new technologies)

- Environmental monitoring

Conventional aerial sprays to combat olive fly have been replaced by ecological methods such as the use of pheromones to attract and trap insects.

Use of "drones" in the context of the development of "precision agriculture". A more efficient management of the inputs of a farm (water, pesticides and fertilizers) according to the real needs of crops and minimization of environmental impacts is foreseen. A good example, lies in the arable crops of Aliartos in Viotia.

Contact with rental companies for demonstration via electronic media and/or in the field.

Smartphone demonstration for agricultural and business purposes.

Traditional practices that can be adapted and applied to Sustainable Agriculture such as terraces that protect the soil, crop rotation and fallow.

(Examples of grants for specific cultivation practices from European programs are given).

- Relevant scientific public and private bodies.

(E.g. ELGO Dimitra, ETHIAGE, Agricultural Universities and Schools)

3. Conventional agriculture

- General characteristics.
- Special characteristics.

Energy consumption - pollution and depletion of aquatic and terrestrial resources - extensive use of fertilizers and pesticides - monoculture – desertification - mutant species - rural migrants to cities (concrete examples of interventions are given).

Create a "SWOT analysis" table by identifying and comparing the strengths/weaknesses and opportunities/threats of the two general types of agriculture. In addition, the severity of each factor can be graded after a discussion with the competent instructor.

Assistance in the graduation can be from the database to be created but also from the information exchange and viewing networks that will be developed during the course.

The purpose of this comparison should not be the "demonization" of conventional agriculture but its documented examination compared to sustainable agriculture.

4. Environmental problems

Linking agriculture to environmental problems on a local and global level.

Climate change-induced problems in agriculture (e.g. the need to change the types of crops from highly to less irrigated due to an expected increase in the average temperature in the Mediterranean – drip irrigation).

Problems in the water balance (e.g. inadequate water supply during the summer).

Problems of extreme weather conditions (e.g. recent hurricanes in the Mediterranean and Greece).

Environmental pollution problems and threats to consumers' health from fertilizers and pesticides (e.g. pesticide residues in food - NO_3 residues in the food chain).

Problems created by agricultural waste in the environment (e.g. discharging of water-dispersed pesticides, burning or dumping of packaging in rubbish sites or landfills).

Managing problems in the final receptor of pollutants (e.g. fertilizers in soil and water, groundwater and surface waters – eutrophication. – Increased salinity of soils - benefits from protection of riparian vegetation).

Extinction of local livestock species. Their effect on the ecological balance of entire areas (e.g. recession of bee populations in many countries resulting in the inability to pollinate many plant species such as almonds and cotton - The practical benefit of keeping hedgerows for the conservation of birds as predators of pests and weeds).

Disappearance of local traditional crops, such as the almond tree of Lemnos, the cucumber of Chios, the plum of Skopelos, the mandarin of Kalymnos and many others that have the potential of an economically beneficial and environmentally compatible cultivation.

Demonstration by the trainers and practical training by students on the consultation on reliable data and information sources. Students will be trained in the search of substantiated views and suggestions.

Examination of the results of research projects, like the one on the protection of the river Evrotas, which was aimed at the study of pollution across the rivers' basin (DEYAS 1994). The project was implemented in the years 1990-93 by the Municipal Water Supply and Sewage Treatment Company of the Municipality (DEYA) of Sparta in cooperation with the University of the Aegean. It was funded by the EU and the DEYA Sparta under the Program MEDSPA '90 (1990-93).

Also, under the LIFE Program '94, part of the river near Sparta was mapped with the use of Geographical Information Systems (GIS) aiming to the rivers' active protection.

The proximity to Evrotas River, offers an opportunity for a simple practice of students in the use of pollution bio-indicators. An indirect

assessment of the purity of Evrotas will be practiced through the presence of larvae of various aquatic insects, such as dragonflies, and their correlation with relevant pollution tables.

5. Characteristics of the Greek natural environment, limitations and possibilities

Asymmetrically distributed water resources.

Mountain and island environment.

Great biodiversity.

Cultivation of aromatic plants.

Cultivation of local varieties of oranges - vines - olives. Examples of good practices from other parts of the country. For example, successful cherry growing in Olympos Mountain with exports.

Other features presented with relevant examples.

Creation of a web site for consultation, exchange of information and views with other students and their tutors.

Create comparative "SWOT analysis" tables for each type of cultivation. Fill in the relevant tables based on the e-contacts, facts and references in the database to be created.

The nutritional value of the Mediterranean Diet is internationally recognized and it is a powerful comparative advantage for most of the regions of the country.

Analysis of the main features of the Mediterranean Diet.

Role-play to look for ways to better promote products and ensure their quality.

Find ways to promote products through National and European agro tourism programs and practices.

Search for targeted agro-tourism actions through co-funded European Programs e.g. LEADER.

Visit to one of the circa 50 wineries of the Peloponnese, the "vineyard" of the Ancient Greeks. Together, students and teachers will cooperate with the wine-grower to investigate the viability of a wine production plant and the conditions for its efficient operation.

Emphasis on export orientation opportunities.

6. Cooperatives

Visit to a cooperative - examples of successful cooperatives - perspectives - historical review - sustainability issues - various types of cooperative agriculture e.g. Compulsory Cooperatives – Producers' Groups etc.

7. Common Agricultural Policy

Description and general features - examples that indicate abilities and opportunities.

The new international framework for agricultural markets affects agricultural incomes. Some good examples are, the institutional decline in prices, the reduction in internal market protection, the extension of the quota system, the temporary cessation of crops. The need for diversification of agricultural production, such as branded quality products that are usually associated with the specific features of the site, is thus emerging.

8. Legislation of the European Union

Description, general features (Regulations - Directives). For example, compliance with the Community Water Directive 2000/60 /EC which provides for the rational use of water resources through the partitioning of the country in water compartments, the quality control of water, the pricing of irrigation water through consumption counters, etc.

It is well known that about 80% of the water consumed in Greece concerns agriculture.

Examples illustrating the opportunities and possibilities of financing start-ups.

Creating a role-specific game: European Community representatives responsible for Community grants and programs - National Ministries' representatives - District/Municipal representatives - Rural cooperatives and farmers. They all participate in a programming

game with the main objective of making the most advantageous use of National and Community funding.

9. National legislation

Description - examples that indicate abilities and opportunities, e.g. "Improvement Plans" which are funded by the NSRF and even provide for the purchase of high-tech equipment ("Drones", Smartphone and applications). Other actions in the above framework concern the implementation of farm investments, water saving, use of Renewable Energy Sources, environmental protection, etc.

A similar game as in the previous paragraph, will be used to explore the possibilities of organizing and financing a startup business plan (Community funds - bank financing - integration into the National Development Law - Co-financed programs etc.).

10. Sustainable Agriculture Prospects

Growth prospects for agriculture in quantitative terms appear to be limited.

There are some "special" cases such as the production of high quality and added value products such as "natural products", dietary supplements, etc. Their geographical origin, the way they are produced and their special qualities appear on their label while, a possibility of an increasing income emerges.

Rural area can cover a significant part of the demand for recreation and changes in consumer patterns. It is a privileged space for the development of many recreation activities.

With the rationale of effective economic diversification of rural areas, the new activities to be developed belong to the class of small and medium-sized enterprises.

Principles on the creation of the above enterprises are, among others, the utilization of endogenous potential, the incorporation of innovations in production and product, the flexibility and adaptation to the constant changes in demand and supply, the qualitative upgrading of the services offered, their structural productive relationship with other sectors of the economy.

11. Greek examples of sustainable agriculture using Community grants and programs.

An example of an integrated sustainable development of rural space with the rational use of subsidies and grants from co-financed Programs (State - EU), is the mountainous village of Anavra in Magnesia.

The following are envisaged: An online communication through a permanent website for consultation and exchange of information and views in collaboration with students of the same age, their teachers and village leaders. The creation of VIDEO or POWER POINT on the activities of the two villages (Evrotas and Anavra).

Creation of a "SWOT-Analysis" table where the students compare, the new farmer/entrepreneur model, to the conventional one.

Educational material (materials / sources / resources required to complete the course)

- Websites
- Books
- Previous studies

The reference material, the bibliographic review, the proposed supplementary literature and everything else concerning the educational material will be posted on the platform 15 days before the start of the courses.

Keywords

Environment, Protection, Agriculture, Education, Entrepreneurship.