



Deliverable 3.2. Organization of seminars and lectures

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Executive Summary

Professional development of scientific staff is very important and necessary for any High Education Institution, and it is widely recognized as a necessary condition for the competitiveness of individuals and organizations. This means that the insufficient professional development of academics creates a considerable risk to the quality of higher education and, consequently, to society as a whole.

The open lectures that were organized in partner countries HEIs aimed to improve the professional and scientific skills of staff in the fields related to sustainable management of food production systems, which includes different topics such as supply chain management, economics and environmental management. These lectures are meant also to support scientific staff during the development of MSc, program structure, course development, laboratory upgrades, etc.

Apart from the open lectures organized during the six events on specific dates in partner countries, there were other activities in order to strengthen the capacities of the staff involved in the Master Program on Sustainable Food Production Systems. The experienced scientific staff from EU HEI-s conducted the training for specific subjects aiming to improve the professional and scientific skills of staff in the specific fields related to sustainable management of food production systems. Due to the pandemic, these sessions were conducted online during the year 2021.

The present report includes the whole list of seminars prepared during the project lifetime while in the Annex, a “book of abstracts” is included to provide a short description of the content of the presentations prepared during the project.

1 Introduction

Professional development is a very important component of the STEPS Project. Improvement of capacities of scientific staff from partner countries on specific scientific topics related to sustainable food systems was aimed to be achieved through close cooperation between partner countries HEI-s and EU HEI-s. The open lectures that were organized in partner countries HEIs aimed to improve the educational skills and the professional and scientific skills of staff in the fields related to sustainable food production systems. Apart from the open lectures organized during the six events on specific dates in partner countries, there were additional lectures offered online due to the COVID-19 pandemic. All these activities strengthened the capacities of the staff involved in the Master Program on Sustainable Food Production Systems.

The open lectures were prepared and presented during the meetings in partner countries hosted by UHZ, Pejë- Kosovo, UNSA, Sarajevo - Bosnia and Herzegovina (first meeting), UNBI, Bihac-Bosnia and Herzegovina, UC, Pristina – Kosovo, UNSA, Sarajevo - Bosnia and Herzegovina (second meeting) and AUT, Tirana Albania. In addition, online lectures were organized in scheduled online meetings of the project partners.

During the meetings organized in the host universities, a total of 26 open lectures and 10 training sessions were presented. The presentations of the open lectures were attended by a total of 217 academic staff from respective counties who participated in the STEPS project. On the other hand, the 10 online training sessions were attended by 89 academic staff. The scientific staff has participated in the seminars according to the intention and the capacity to deliver specific courses.

These seminars and lectures were shown to be very useful in improving the professional and scientific skills of staff in the fields related to sustainable management of food production systems as well as in supporting scientific staff during the development of MSc. program structure, course development, laboratory upgrades etc.

During the discussions which followed the presentations, participants shared experiences and denoted their satisfaction on the scope of these activities. Participants were also invited to provide feedback by answering relevant questionnaires. The results of the quality evaluation of the training seminars and open lectures based on feedback questionnaires is presented in the interim and final Quality Evaluation reports of the project. After each presentation, most of the teachers stated that they acquired a better understanding of the topics analysed. They confirmed also to have benefited through the exchange of the experience and ideas with the international team on courses and topics related to sustainable food production systems.

2 . Organisation of open lectures and STEPS online training sessions

The STEPs Project partners were asked to propose, prepare, and deliver lectures or seminars in partner countries. The scientific staff of HEIs proposed open lectures on different topics such as engineering, food legislation, food quality and safety, supply chain management, economics etc. Lectures were prepared by both, scientific staff from partner countries' HEIs and EU HEIs. The open lectures were prepared and presented during the meetings in partner countries hosted by UHZ, Pejë- Kosovo, UNSA, Sarajevo - Bosnia and Herzegovina (first meeting), UNBI, Bihac-Bosnia and Herzegovina, UC, Pristina – Kosovo, UNSA, Sarajevo - Bosnia and Herzegovina (second meeting) and AUT, Tirana Albania. The titles and places where the open lectures and training sessions were held are presented in the following while a brief description of the content of all the presentations is included in the Annex of the deliverable.

2.1 Presentation of the open lectures in UHZ Pejë/Kosovo

The first event was hosted by UHZ and took place in Peja- Kosovo on September 10-14, 2019. In total, seven lectures were presented openly to 34 scientific staff from partner countries' HEIs and EU HEIs. The open lectures which were presented during the first meeting in Pejë/Kosovo are listed below.

- Social and cultural context of food (social pillar of sustainability), prepared by Czech University of Life Sciences Prague (CULS).
- The use of ICT solutions in lab courses. Practices for student's engagement - Enriching the learning experience in managerial courses, prepared by Technological Educational Institute of Sterea Ellada (TEISTE)/ (AUA), Greece.
- Practices for students' engagement - Enriching the learning experience in managerial courses - prepared by Agriculture University of Athens (AUA).
- Prevention of pollution in food industry – prepared by the University of Sarajevo (UNSA), Bosnia and Herzegovina.
- Sustainable food and environment perceptions – prepared by European University of Tirana (UET), Albania
- Developing an integrated syllabus using XXI skills. Developing teaching resources to keep students awake – prepared by the Universum College (UC), Kosovo.
- Experiences with studying master on Food systems – prepared by the Czech University of Life Sciences Prague (CULS), Czech Republic.

2.2 Presentation of the open lectures in UNSA – Sarajevo/Bosnia and Herzegovina (first trip)

The presentation of the open lectures continued during the event hosted by UNSA, which took place in Sarajevo, Bosnia and Herzegovina between 10th and 14th December 2019. Five open lectures were open to 43 scientific staff from partners' countries HEIs and EU HEIs. The open lectures which were presented during the meeting in Sarajevo/Bosnia and Herzegovina are listed below.

- Teaching Environmental Management at post-graduate level: transferring best practices – prepared by Research Innovation and Development Lab Private Company (ReadLab), Greece
- Legislation and standards regarding organic agrifood products, Food Safety-HACCP of Grain Milling and Bakery – prepared by the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Romania
- Improved functional food products. A review of polyunsaturated fatty acids – prepared by the University of Bihac (UNBI), Bosnia and Herzegovina
- Food quality and safety management in Kosovo – An overview – prepared by the University "Haxhi Zeka" (UHZ), Kosovo
- Food loss and waste, the consequences from farm to fork – prepared by the Agricultural University of Tirana (AUT), Albania

2.3 Organization of online training seminars (COVID-19 pandemic period)

Due to the pandemic, the period from January to June 2021, was used for the implementation of STEPS online trainings. The educational staff from the EU higher education institutions have conducted eleven training in different courses of the master program 'Sustainable Food Production Systems'. The academic staff from the Czech Republic, Romania, and Greece conducted the training for the academic staff from partner countries who will teach in the new master study program

- Food ethics, Lectures Michal Lošťák and Jakub Husák from the Czech University of Life Sciences Prague (CULS) conducted training on 'Food Ethics' to 9 participants from the partner countries
- STEPS LMS Platform 1st training seminar, prepared by Mr. Kostika Gorica, Service provider
- Food legislation/Governance, policy and legislation in the agri-food sector, Lecturers Toader Maria, Roman Gheorghe Valentin, Dusa Elena Mirela from the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Romania
- Fundamentals of food production systems, Sustainable food production systems, Introduction to Sustainability, prepared by Toader Maria, Roman Gheorghe Valentin, Ion Viorel, Epure Lenuta-Iuliana, Dusa Elena Mirela, Basa Adrian Gheorghe.
- Low input agriculture, prepared by Lecturers Maria Toader, Gheorghe Valentin Roman, Andrei Radu Popovici from USAMVB.

- An ethical approach of organic agriculture - strategy to feed the world, to protect natural ecosystem and save biodiversity', prepared by Roman Gheorghe Valentin, Toader Maria, lecturers from USAMVB.
- Sustainable food value chain management; Introduction to supply chain; Sustainable Management, prepared by Lecturer Giannis T. Tsoulfas.
- Total Quality Management in the Agri-Food Sector, prepared by Lecturers Maria Toader and Gheorghe Valentin Roman from USAMVB.
- Traceability systems of food products and HACCP system, prepared by Lecturers Maria Toader, Gheorghe Valentin Roman, Sonea Cosmin and Ionescu A. Mariac from the USAMVB.
- Data Analysis and Decision Making, prepared by Lecturer Katerina Marinagi from the Department of Agribusiness and Supply Chain Management, Agricultural University of Athens (AUA), Greece.

2.4 Presentation of the open lectures in UNBI – Bihac/Bosnia and Herzegovina

In the event hosted by UNSA, which took place in Bihac, Bosnia and Herzegovina on November, 22- 26, 2021, five open lectures were open to 34 scientific staff from partners' countries HEIs and EU HEIs. The open lectures which were presented during the meeting in Sarajevo/Bosnia and Herzegovina are listed below.

- STEPS - LMS Platform 2nd training seminar" –prepared by Mr. Kostika Gorica, Service provider from Greece
- Sustainable energy use in the food industry, Energy problems in the present world - prepared by the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Romania
- Consumer science and sustainable consumption - prepared by Czech University of Life Sciences Prague (CULS)
- Innovative product and process development – prepared by the Czech University of Life Sciences Prague (CULS)
- Entrepreneurship in the food industry; Rural development and Business economics and international trade in the agri-food sector - prepared by Agricultural University of Athens(AUA)- Greece
- LCA as a tool for the design and operation of sustainable agri-food supply chains - prepared by AUA- Greece
- Total Quality Management in the Agri-Food Sector - part II – prepared by the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Romania

2.5 Presentation of the open lectures in UC – Pristina/Kosovo

In the event hosted by UC, which took place in Pristina/ Kosovo on May, 22- 28, 2022, four open lectures were open to 39 scientific staff from partners' countries HEIs and EU HEIs. The open lectures which were presented during the meeting in Pristina/Kosovo are listed below.

- Wines, Beers, and Spirits as Products of Sustainable Agriculture - prepared by Czech University of Life Sciences Prague (CULS)
- Composing Financial Statements - prepared by the AUA- Greece
- Integrating SDGs in developing Teaching Resources for STEPS modules - prepared by the Universum College (UC), Kosovo
- AGRI-FOOD SUPPLY CHAINS: ENVIRONMENTAL HOTSPOTS ANALYSIS - FRAMEWORK & CASE STUDY- prepared by Agricultural University of Athens (AUA), Greece

2.6 Presentation of the open lectures in UNSA – Sarajevo/Bosnia and Herzegovina – (second trip)

The presentation of the open lectures continued also during the second event hosted by UNSA, which took place in Sarajevo, Bosnia and Hercegovina between 10th and 14th October 2022. Two open lectures were open to 43 scientific staff from partners' countries HEIs and EU HEIs. The open lectures which were presented during the meeting in Sarajevo/Bosnia and Herzegovina are listed below.

- Grain legumes - main source of vegetal proteins for European consumption – prepared by the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB), Romania
- Experimental Measurements and Computational Modelling of Convective Drying of Quince Slices – prepared by the Research Innovation and Development Lab Private Company (ReadLab), Greece

2.7 Presentation of the open lectures in AUT – Tirana/Albania (last STEPS meeting)

In the last event hosted by AUT, which took place in Tirana, Albania in November 20-26, 2022 10th, only one open lecture was presented to 31 scientific staff from partners' countries HEIs and EU HEIs. The open lecture which was presented during the meeting in Tirana/Albania is listed below.

- Czech Food with Protected Geographical Indications: Is there a Clash between Traditions and Sustainability? Prepared by the Czech University of Life Sciences Prague (CULS)

3 Conclusions

The open lectures and training sessions have been prepared by partner countries HEI-s as well as by EU HEI-s and have been delivered during events organized in different partner countries HEIS. During the meetings organized in the host universities, a total of 26 open lectures and 10 training sessions were presented. The presentations of the open lectures were followed by a total of 217 staff from respective counties who participated in the STEPS project. On the other hand, the 10 online training sessions were followed by 89 academic staff. The scientific staff has participated in the seminars according to the intention and the capacity to deliver specific courses. The data specified for the number of participants, as well as for the topics of open lectures and training sessions, are presented in the annex of the report.

The open lectures were very diverse in terms of content and were considered useful by the attendees during the creation of the master's program in sustainable food production systems. These open lectures helped the staff during the practical implementation of the program courses in partner HEIs.

Quality evaluation of the training seminars session of the STEPS project is included in the interim and the final Internal Quality Evalutaion reports of the project. The open lectures and training sessions had a positive impact on teachers' professional development. The participants showed their satisfaction with meetings organized I partner countries including the open lectures through the evaluation forms which were completed by participants at the end of each meeting in partner country's HEI-s. After each presentation, most of the teachers declared to have a better understanding of the certain topic. They confirmed also to have benefited through the exchange of the experience and ideas with the international team on courses and topics related to sustainable food production systems.

ANNEX A: Short descriptions of STEPS presentations

Social and cultural context of food (social pillar of sustainability)

Michal Lošťak, Jakub Husák, Petra Šánová, Czech University of Life Sciences, Prague (CULS)

The lecture focused on farming the food into social context. The outcome should be the understanding of what might be seen to be “naturally given” (e.g. food) is also influenced by social factors – it asks questions: What do we eat? How do we explain why people eat something (social practice)? Where the food comes from (social relations: competition and cooperation)? How do we eat (social institutions: “norms of the game”). The lecture showed how food is linked to rituals and myths, cultural symbols, identity, life-styles beyond the food, food as the tool for social inclusion and the knowledge.

The use of ICT solutions in Lab courses

Katerina Marinagi, Agricultural University of Athens (AUA)

In this presentation the case of ICT solutions for lab courses is presented. ICT solutions are seen as tools to support storage of courses, lectures, exercises, tests, communication and cooperation, and distance learning. Moreover, open-source solutions are presented which may be very useful for the academic community. Key Words: lab courses, ICT, open-source solutions

Practices for Students’ Engagement – Enriching the learning experience in managerial courses

Giannis T. Tsoulfas, Agricultural University of Athens (AUA)

In this presentation various practices for engaging students are presented. The focus is shifted on managerial courses, which constitute one of the main stream of the STEPS MSc Programme. The topic is addressed by bringing various perspectives from the academic literature. *Key Words:* managerial courses, engagement, blended learning

Waste Management in Agriculture and Food Industry - Prevention Pollution in Food Industry

Zlatan Saric, University of Sarajevo (UNSA)

The aim of this lecture is to present an overview of key sources of pollution and ways to prevent it with special emphasis to the dairy industry. In the introductory part key environmental factors were presented as well as main sources of pollution. Generally, an overview of the consequences of constant pollution in the world was made. The dairy sector was taken as an example. The main part was a presentation of the main environmental aspects in dairy sector. Briefly, basic dairy products and processing but also types of waste generated from these processes were presented. Key factors were elaborated: water and energy consumption, effluent discharged, air emissions and solid waste generation. Pollution prevention opportunities in the dairy sector were elaborated. Participants of this open lecture had the opportunity to see examples of six case studies on how to reduce inputs consumption levels, minimize pollution into environment and make new valuable products: recovery and increase in value of cheese whey; improved operation procedure in cleaning processes; optimization of hot water production process; reduction of energy consumption in heat treatments; recovery of brine; use of environmental criteria in new product development. All examples included all necessary inputs and outputs, short descriptions of operations, environmental issues, pollution prevention opportunities (PPOs) and environmental and economics evaluation of every PPO. The participants evaluated the open lecture as a valuable innovative and informative experience.

Sustainable food systems and environment perceptions in Albania

Elena Kokthi, European University of Tirana (UET)

Food systems are influenced by social, political, economic, cultural, and ecological domains, with each component relying on human knowledge and skills. Increased concerns about water quality and availability, environmental contamination, hunger and nutrition, food safety and security, soil loss, animal welfare, and the causes of climate change have put agriculture and food systems in the spotlight. From this perspective, food systems that do not harm the environment and the social aspects of humankind have transformed this issue into very important in the actual and upcoming political agenda. Similarly, the need to understand and intervene in food systems as objects of social/human capital and environmental governance is increasing. The sustainability of Albanian food systems is currently discussed for several reasons: first, because of the need of Albania to comply with the Acquis Communautaire regarding environmental, agricultural, rural development, social and economic aspects of food systems. Second, the new emerging trends of Albanian consumer perceptions related to organic food (Kokthi et al., 2015,2017) and food safety issues (Kokthi et al., 2016) (Guri et al., 2019); third, the lack of trust in institutions dealing with the food systems, rises the need to have a broader analysis of the food systems and sustainability in Albania. Fourth the need for more innovation and entrepreneurship skills in food systems in Albania increases the need for new skills curricula in this direction. The existing curricula of the main high education institutions in Albania that offer skills and interdisciplinary competencies in these directions do not focus on sustainability and the complexity of the food systems. Job market research under the STEPS project employed several tools to identify the competencies and skills needed for Sustainable Food Systems, such as in-depth interviews, online surveys and focus groups. Results show that the actual and future needs the stakeholders stress are the following: focus on sustainable supply chain, food processing and innovation, entrepreneurship and sustainable development, food legislation and EU legislation, development of improved tools and methodologies for food system analysis, food system mapping, conducting a feasibility study on food waste and losses on major food value

chains etcetera. The EU integration process will also increase awareness of food sustainability issues. EU integration also has an essential role in the capacity-building process. This process will be supported by new study programs such as Steps. *Key words: sustainable food system, job market review, skills, competences*

Modern pedagogy in the field of agri-business - Developing an integrated syllabus using XXI skills/Developing teaching resources to keep students awake.

Uran Rraci, Universum College (UC)

The aim of this lecture is to provide a comprehensive approach to teaching which is mainly focused on student learning, as well as to present a modern approach to syllabus development using Prof. Dr. L. Dee Fink “Designing Courses for Significant Learning.” The lecture was focused on experiential learning within teaching pedagogy in order to maximize student learning experience that fosters innovation and contributes to attaining the skills and attributes which allow students to gain a competitive advantage in their professional and academic careers. This new teaching methodology aims to reduce the role of professors and changes the format of classrooms. UC staff have already developed a particular approach named “Mentorship Teaching”, where students are divided in groups of 4-6 (depending on the class size) which meet weekly to complete the tasks set forth by the professor. The professors’ role is to develop the teaching resources and distribute them to students, where their input is mostly on mentorship basis. On the other hand, students work together with tutors, which are older students or graduate level students, to complete their tasks. The open environment is intended to foster innovation by not limiting them to premises where they could be demotivated.

Experiences with studying master on Food systems

Tomáš Uhnák, Czech University of Life Sciences, Prague (CULS)

The lecture presented the design of the master degree programme in Sustainable Food Systems. This study programme is delivered by City University of London. The lecture showed that system understanding of food is needed (a holistic approach to food and consequences for the education). Experience of former students (feed-back food designing new study programme)

Sustainable technology of bakery products - HACCP of grain milling and bakery

Toader Maria, Roman Gheorghe Valentin, Sonea Cosmin, Ionescu Alina Maria, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

The students can learn how to apply food safety practices and implement hazard analysis critical control points programs (HACCP) that specifically relate to grain milling at the Grain Milling: Food Safety and HACCP. The application of the HACCP system is compatible with the implementation of quality management systems, and is the system of choice in the management of food safety within such systems. An HACCP plan for bakeries is an output document of the Hazard Analysis and Critical Control Points (HACCP) Study. It specifies the strategies to be followed to assure control of physical, chemical and biological hazards based on the seven principles of HACCP when manufacturing baked goods. Specific modules could include a trained HACCP team, product description, intended use, process flow diagrams, hazard analysis chart (HACCP Principle 1), critical Control Points (CCP) identification (HACCP Principle 2), HACCP Control Chart (HACCP Principles 3-7),

Food Quality and Safety - IMPROVED FUNCTIONAL FOOD PRODUCTS - A REVIEW OF POLYUNSATURATED FATTY ACIDS

Suzana Jahić, University of Bihać (UNBI)

In addition to familiarization with the basic characteristics of fatty acids, the processes of elongation and desaturation of polyunsaturated fatty acids, which are essential in human nutrition, are presented. In the Western population, there is a trend of increased intake of n-6 polyunsaturated fatty acids and the ratio of n-6 and n-3 polyunsaturated fatty acids in the diet is disturbed, which multiplies the risk increase of cardiovascular diseases, type 2 diabetes and other chronic diseases. That is why certain associations and health institutions in the world recommend the most optimal ratio of n-6 and n-3 fatty acids, as well as recommended daily amounts for certain categories of the population. As the trend of production and consumption of functional food is widely present in the world, a series of experimental research on this topic was carried out at the Biotechnical Faculty in Bihać, which was also shown in the presentation. In the field of plant production, linseed production was carried out with different soil treatment approaches (organic, mineral and bacterial fertilizer) as well as the linseed oil production, and the results of the composition of fatty acids in seeds and oil for the mentioned experimental groups were presented. In the domain of animal production: the production of sheep's cheese, in which the animals' nutrition was specific - with the addition of flaxseed to feed mixtures and a comparison of the fatty acid composition of cheese obtained from the milk of animals in the treated - experimental and group with the standard group (on pasture). The experimental results of the composition of fatty acids in the production of lamb meat with the addition of linseed in animal nutrition are also presented, as well as a comparison with the composition of fatty acids in the meat of lambs that were reared using the traditional breeding method.

Food Quality and safety - FOOD QUALITY AND SAFETY STANDARDS IN KOSOVO – AN OVERVIEW

Agim Rysha, University of Peja (UHZ)

The aim of this lecture is to present an overview of the current state with regard to the application of risk-based quality and safety schemes at the primary as well as at the food processing process on the international level. The presentation contained information about the importance of applying food standards as a crucial condition for access to local, regional and international markets. Participants of this open lecture had the opportunity to see the examples of different levels of standards (private, national, multilateral, and supranational standards) that apply worldwide. The context of food legislation in Kosovo was also a topic of this lecture and served to inform HEIs representatives from different countries about the prevalence of different food standards in the country and the main challenges that Kosovo is facing in this regard. Participants actively participated with their questions and comments contributing to exchange of knowledge and experiences about food safety and quality standards in general. After this lecture, the participants visited a confectionery production factory in Pristina. During the visit to this factory, the participants, apart from seeing the production in practice, were also informed about the implementation of food standards in this factory. The participants evaluated the open lecture and the visit to the factory as valuable informative experiences.

Quality and safety - Food loss and waste, the consequences from farm to fork

Renata Kongoli, Klotilda Marku, Agricultural University of Tirana (AUT)

This course is designed to help students develop their skills in relation to sustainable development policies in the food industry, strategies and procedures to be followed with the aim of good use of food, management of losses and waste from the food industry as well as the consequences of food safety. from farm to table. Graduates of the program are expected to have gained a thorough understanding of the challenges facing the food industry and to be able to provide viable solutions for population hunger reduction, waste management and food security. In its entirety, this course focuses on food management, loss reduction in the food industry, technological advances to increase efficiency and sustainability in food production systems from farm to table. As well as the ethical dilemmas surrounding corporate social responsibility in the sustainable food industry in relation to poverty reduction and food security. The material provides abundant theoretical and practical information about the production and right consumption of food, provides sustainability solutions in food management to minimize losses and possible treatments for the treatment of waste from the food industry. Through the knowledge provided, the participants learn more about food production systems in the framework of the circular economy.

Food ethics

Michal Lošťák, Jakub Husák, Czech University of Life Sciences, Prague (CULS)

The lecture introduced the participants to understanding what ethics is (practical philosophy). The lecture demonstrated the links between ethics as practical philosophy and food. Various ethical dilemmas concerning food were highlighted (e.g. novelty food vs retro food, food economizing vs food abundance). Links of food ethics and sustainability were presented (how to feed the world in the future: challenging question existing for centuries, from formal to substantive economy).

Food legislation/Governance, policy and legislation in the agri-food sector

Toader Maria, Roman Gheorghe Valentin, Dusa Elena Mirela, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

This course aims to: Help learner understand the specific requirements of the organic legislation, certification schemes and International standards for organic agri-food products. Develop the knowledge and skills which the learner will require to comply with the principles and practices of organic agrifood production as required by certification schemes. This course includes some figures regarding situation of organic agriculture in the world, principles of organic agriculture in general and its benefits to the people and to the environment.

Fundamentals of food production systems, Sustainable food production systems, Introduction to Sustainability

Toader Maria, Roman Gheorghe Valentin, Ion Viorel, Epure Lenuta-Iuliana, Dusa Elena Mirela, Basa Adrian Gheorghe, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

This course aims to: Familiarizing of learners with the specific notions of the sustainable agriculture system, in order to stimulate individual and, especially, collective creativity regarding the production and processing of agri-food products (vegetable and animal); Provide them with the necessary knowledge for the design of households, farms, processing units, agricultural companies or agro-industrial holdings, respecting quality and environmental standards and applying modern and efficient notions, techniques and processes in sustainable agrifood system; Encourage holistic, systemic thinking of Master students to become self-directed analysis and decision-maker.

Low input agriculture

Maria Toader, Gheorghe Valentin Roman, Andrei Radu Popovici, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

Main aim of the course is to provide students with basic knowledge of soil functions in natural ecosystem, which is especially important for its sustainable management, food production and ecosystem protection. This presentation has mains objectives to explain the principles of integrated agricultural input management imply the correct performance of all elements of agricultural technology and the relationship between sustainable land management and water quality. Also, describe land values and how they change depending on different factors, identify land cover changes in urban and rural areas in terms of land use planning.

An ethical approach of organic agriculture - strategy to feed the world, to protect natural ecosystem and save biodiversity

Roman Gheorghe Valentin, Toader Maria, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

In the contemporary world, it is paramount to find new solutions to the problems that have arisen in several fields of activity, mainly to the problems posed by food production and environmental

protection. The reasons for these problems are, on the one hand, the marked environmental degradation due to the inadequate exploitation of natural resources or the inefficient management of the agricultural production and the insufficient coordination of various human activities, and on the other hand, the depletion of the raw material and energy resources on which the 20th-century intensive technologies were based. In this context, it is impetuously necessary to find some alternative solutions for the problems we are facing. An alternative is organic agriculture system.

Sustainable food value chain management; Introduction to supply chain; Sustainable Management

Giannis T. Tsoulfas, Agricultural University of Athens (AUA)

In this presentation was given an overview and an introduction to the designed course "Management of Sustainable Food Supply and Value Chain". The objectives and the learning outcomes are illustrated, and a model presentation is provided for the first topic of the course

Total Quality Management in the Agri-Food Sector

Maria Toader and Gheorghe Valentin Roman, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

Organic farming began to develop in the modern world as a response to intensified farming and industrial agriculture, using synthetic fertilizers, chemical pesticides, introduction of monocultures into large areas, the separation the animal husbandry from plant production and using heavy machinery. All of this leads both to environmental degradation, and on the other hand, the overproduction of food. At the same time the food quality decreases continuously with regard to nutritional value, which is also the effect of strongly developed food technology. Organic agriculture is a production system that avoids, or completely discards, synthesis fertilisers and pesticides, growth regulators and fodder additives, and genetically modified organisms. Analyzing the market for organic food products, the management of food safety is all the more important as the supply of organic food products to the final consumer can mean global supply chains, products that cross national borders, passing through a wide spectrum of intermediaries, which adds complexity of the supply process and can stimulate the interested.

Traceability systems of food products and HACCP system

Maria Toader, Gheorghe Valentin Roman, Sonea Cosmin and Ionescu A. Mariac, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

Maintaining food safety from the time of production until at the time of their consumption by ensuring hygiene practices and traceability at each step of the supply chain are tasks essential for the food industry.

DATA ANALYSIS AND DECISION MAKING

Katerina Marinagi Agricultural University of Athens (AUA)

In this presentation an overview and an introduction to the designed course "Data analysis and Decision making" is given. The objectives and the learning outcomes are illustrated and a model presentation is provided for the first topic of the course.

Agricultural and food industry waste management - Sustainable energy use in the food industry. Energy problem in the world

Toader Maria, Roman Gheorghe Valentin, Ion Viorel, Epure Lenuta-Iuliana, Dusa Elena Mirela, Basa Adrian Gheorghe, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

This course is designed to help students develop a critical awareness of strategies, policies and processes for the sustainable management of energy in the food processing industry. The course also focuses on environmental protection, advances in technology, risk, sustainability and the ethical dilemmas surrounding corporate social responsibility in food sustainable industry in connection with sustainable energy. The material offers statistical data about energy consumption in partner countries and solutions of sustainability in energy domain in the world. Also, participants learn about the renewable energy and it is one of the ways to ensure a cleaner energy supply.

Consumer science and sustainable consumption

Michal Lošťák, Jakub Husák, Tomáš Jarabica, Czech University of Life Sciences, Prague (CULS)

The lecture started from questioning the idea of growth. This questions was later linked to suitability in general and sustainable consumption in particular as it is one of the UN Sustainable Development Goals. The lecture documented food consumption has big impacts on sustainability (e.g. greenhouse emissions, deforestation). Consumption patterns also impact human health and society in general (e.g. heart diseases). The lecture disused how to engage consumers in dietary transition towards sustainability through different food system with consumers participating in this transition. Such transition will include ethical issues: egoistic reasons (products for my health and wealth being) or social reasons (environmentally friendly, socially acceptable products). Examples what universities can do for this transition were highlighted. The end of the lecture was about alternative food networks and the concept of food sovereignty.

Innovative product and process development

Michal Lošťák, Jakub Husák, Czech University of Life Sciences, Prague (CULS)

The lecture started from different understanding of innovations. The core of the lecture addressed the transition theory on innovation (multilevel perspective on innovation: sociotechnical landscape, sociotechnical regime and niches for innovations). This theory was illustrated by examples from innovation in food sector showing also the issue of path-dependency blocking successful implementation of innovative practices. The second part of the lecture was of practical nature: how to train the students towards innovation thinking: examples of imagination were used.

LCA AS A TOOL FOR THE DESIGN AND OPERATION OF SUSTAINABLE AGRI-FOOD SUPPLY CHAINS

Giannis T. Tsoulfas, Agricultural University of Athens (AUA)

In this presentation the Life Cycle Assessment methodology is presented. In particular, the phases of the method are analysed along with the objectives of relevant studies and limitations. Moreover, useful software solutions are discussed and the application of the methodology in agri-food supply chains is outlined. *Key Words:* Life Cycle Assessment, agri-food supply chains

Total Quality Management in the Agri-Food Sector

Maria Toader, Gheorghe Valentin Roman, Elena Mirela Dusa, Ion Viorel, Basa Adrian Gheorghe, Epure Lenuta Iuliana, University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMVB)

This course presents the principles of a plan for a Good Agricultural Practices (GAP), Good Manufacturing Practices (GMPs) and Good Hygienic Practices (GHPs). Minimum quality requirements are included in the food law to ensure the foods produced respect all rules and practices. In addition, food law should cover the total chain beginning with provisions for animal feed, on-farm controls and early processing through to final distribution and use by the consumer (FAO, 2021). The students from this MSc course will gain a deeper understanding of the importance of regional, national and international standards in regulatory processes, and the role of public institutions in delivering safe, quality foods to consumers. Also, the students will be able to use internationally accepted tools for food safety and quality management, evaluate the effectiveness of existing food safety and quality management systems, and design a plan to critically investigate a problem and generate an appropriate solution.

Wines, Beers, and Spirits as Products of Sustainable Agriculture in the Czech Republic

Jiří Zelený, Michal Lošťák, Czech University of Life Sciences, Prague (CULS)

The lecture deals with various aspects of sustainable agriculture in the Czech Republic. Specifically, it presents the sustainable agricultural activities of Czech and Moravian companies producing alcoholic beverages - wineries, breweries, and distilleries. Examples of specific producers are presented - i.e., what steps in sustainable agriculture they use in growing (ensuring) raw materials for production, how they process these raw materials to obtain organic certification, and what are the marketing specifics of organic products (organic alcoholic beverages), including communication with the final consumers. The lecture is also devoted to organic

certification ensured by production following organic farming. It shows that the beverage companies also deal with an even stricter classification of some beverages (especially wines) under the designation "authentic/natural wines." Last but not least, the wine production and sales chain corresponding to the methods of biodynamic agriculture, considered by many to be controversial, is approached. The lecture also includes a final tasting of Czech wines, beers, and spirits, all possessing organic certification. The practical tasting is intended to give the audience a better idea of how sustainable farming practices are reflected in the organoleptic characteristics of these products, as these aspects are used by producers when communicating with the customers.

COMPOSING FINANCIAL STATEMENTS

Kanellos Toudas Agricultural University of Athens (AUA)

In this presentation the significance of composing financial statements is addressed. The nature and scope of accounting is presented, and the importance of ethical reporting is put forward. The basic accounting principles are discussed, and illustrative practical examples are presented. *Key Words:* financial statements, accounting, ethical reporting

Integrating SDGs in developing Teaching Resources for STEPS modules

Filip Ruxho, Universum College (UC)

Through the development of the module, the aim is how to include and emphasize the importance of the 17 SDGs to guarantee the development of sustainable food production systems according to the STEPS master's level program. Given that food and agriculture are at a crossroads today and compared to the past, major improvements in agricultural productivity have been recorded over the past decades to satisfy the food demand of a growing global population. But progress has often come with social and environmental costs, including water scarcity, land degradation, ecosystem stress, loss of biodiversity, diminishing fish stocks and forest cover, and high levels of greenhouse gas emissions. The productive potential of our natural resource base has been eroded in many places around the globe, jeopardizing the planet's future fertility. Looking ahead, the path to inclusive prosperity is clearly marked by the 2030 Agenda for Sustainable Development through its 17 goals. Overcoming the complex challenges facing the world requires transformative action, embracing the principles of sustainability and tackling the root causes of poverty and hunger to leave no one behind. The key link between people and the planet, food and agriculture can help achieve the Multiple Sustainable Development Goals (SDGs). We must develop sustainable food production systems to properly feed children, teach them and people how they can lead healthy and productive lives to progress as a sustainable society. Sustainable food and agriculture have great potential to revitalize the rural landscape, deliver inclusive growth for countries and drive positive change across the 2030 Agenda. This module presents a series of actions for students to accelerate transformation in food and agriculture sustainable that are based on evidence, experience, technical expertise and collective knowledge with the transfer of experiences from the most developed countries. These actions include the 2030 Agenda's vision for sustainable development, in which food and agriculture, people's livelihoods and natural resource management are addressed not separately but as one; a future where the focus is not only on the end goal, but also on the means used to achieve it; and an environment where public and private actors participate in legitimizing, engaging in shaping and working towards achieving sustainable development solutions guaranteeing sustainable food production systems.

AGRI-FOOD SUPPLY CHAINS: ENVIRONMENTAL HOTSPOTS ANALYSIS - FRAMEWORK & CASE STUDY

Foivos Anastasiadis, Agricultural University of Athens (AUA)

In this presentation a qualitative stepwise approach is discussed for identifying environmental hotspots across end-to-end supply chain operations via considering key players and processes, while generating “close to real-time snapshots” of the main environmental hotspots for the focus firm. The hotspots analysis leverages both primary and secondary data, hence enabling its easiness, and informs about the ‘Energy – Waste – Resource’ environmental impact. **Key Words:** financial statements, accounting, ethical reporting

Drying of quince slices - Experiments and computational modelling

Alexandros Vouros (ReadLab PC)

The training seminar deals with the analysis of the drying process of organic materials, i.e., fruits and vegetables, by applying both experimental and computational approaches. The presentation demonstrates first how the drying of cylindrical quince slices in a lab scaled convective drying facility is monitored experimentally based on the development of a measurement chain consisted by velocity, temperature, and humidity sensors as well as load cells for the continuous measurement of the moisture content. The details of the development of a computational model, developed based on the discretization of the conjugated heat and mass transport equations during drying are then analyzed. The model is based on the physical mechanisms, adopting to the maximum degree a mechanistic approach. Upon its validation through comparison with experimental results, the model can be used for an in-depth study of the process while it can be also used for predicting the temporal evolution of the moisture content loss, for a range of drying operational conditions. In this way, it is discussed how the existing experience and the specific model could contribute the optimization of the drying process, having in mind the design and the implementation of product-specific drying curves of a variety of organic materials under consideration.

Czech Food with Protected Geographical Indications: Is there a Clash between Traditions and Sustainability

Jiří Zelený, Michal Lošťák Czech University of Life Sciences, Prague (CULS)

This lecture demonstrated digitalized lecture for the project (presented in the form of video). It highlighted how ethical issues (sustainability) influence the consumers choice towards protected geographical indicators. The triangle novelty – traditions and sustainability was discussed against the labels of protected geographical indicators.

ANNEX B: List of Training Activities of the STEPS project

Session No	Date	City/Country	Thematic Areas	Host Organization	No of Participants
1	10-14 Sep 2019	Peja Kosovo	1. "Social and cultural context of food (social pillar of sustainability)" presented by Prof. Michal Lošťák, (CULS) 2. "The use of ICT solutions in lab courses" presented by Prof. Catherine Marinagi (AUA) 3. "Practices for students engagement - Enriching the learning experience in managerial courses" presented by Prof. As. Giannis Tsoulfas (AUA) 4. "Prevention of pollution in food industry" presented by Prof. Zlatan Saric, (UNSA) 5. "Sustainable food and environment perceptions" presented by PhD. Elena Kokthi (UET) 6. "Developing an integrated syllabus using XXI skills" and "Developing teaching resources to keep students awake" presented by Mr. Uran Raci (UC) 7. "Experiences with studying master on Food systems" presented by Dr. Toma Uhnak (CULS)	UHZ	34
2	10-14 Dec 2019	Sarajevo Bosnia-Herzegovina	8. "Teaching Environmental Management at Post-graduate Level: Transferring Best Practices" [Dr. Yannis MOUZAKITIS, Read Lab] 9. "Legislation and Standards Regarding Organic Agri-food Products" (Prof. dr. Gheorghe Valentin ROMAN, USAMVB) 10. "Improved Functional Food Products. A Review of Polyunsaturated Fatty Acids" [Suzana JAHIC, UNBI] 11. "Food Quality and Safety Management in Kosovo – An overview" [Agim RYSHA, UHZ]	UNSA	43

			12. "Food Loss and Waste, the Consequences from Farm to Fork" [Renata KONGOLI, Luziana HOXHA, Enkelda BERBERI, AUT]		
3	25-26 Feb 2021	STEPS Online Sessions	13. "Food Ethics" - CULS/Prof. Dr. Michal Lošťák		9
			14. "STEPS LMS Platform 1st training seminar"- [Mr. Kostika Gorica, Service provider]		7
4	16-Apr-21		15. "Food legislation/ Governance, policy and legislation in the agri-food sector"- USAMVB/ Assoc. Prof. PhD. Toader Maria, Prof.PhD. Roman Gheorghe Valentin, Lect.PhD. Mirela Elena Dusa		6
			16. "Fundamentals of food production systems, Sustainable food production systems, Introduction to sustainability" - USAMVB/Assoc. Prof. PhD. Toader Maria, Prof.PhD. Roman Gheorghe Valentin, Lect.PhD. Mirela Elena Dusa, Prof.PhD. Ion Viorel		14
5	23-Apr-21		17. "Low Input Agriculture" - USAMVB/Assoc. Prof. PhD. Toader Maria, Prof.PhD. Roman Gheorghe Valentin, Eng.dr. Andrei Radu-Popovici		7
6	14-May-21		18. "An ethical approach of organic agriculture - strategy to feed the world, to protect natural ecosystems and save biodiversity" - USAMVB/Prof. PhD. Roman Gheorghe Valentin		8
7	21-May-21		19. "Sustainable food value chain management; Introduction to supply chain; Sustainable management; - AUA/Prof. Ass. Giannis Tsoulfas		11
8	4-Jun-21		20. "Total Quality Management in the Agri-Food Sector" - USAMVB/Assoc. Prof. PhD. Toader Maria, Prof.PhD. Roman Gheorghe Valentin, Lect.dr. Sonea Cosmin, Lect.PhD. Ionescu Alina Maria		9
			21. "Traceability systems of food products and HACCP system" - USAMVB/Assoc. Prof. PhD. Toader Maria, Prof.PhD. Roman Gheorghe Valentin, Lect.dr. Sonea Cosmin, Lect.PhD. Ionescu Alina Maria		10
			22. "Data analysis and decision making" - AUA/Katerina Marinagi		8

10	22-26 Nov 2021	Bihac/Bosnia-Herzegovina	<p>23."STEPS - LMS Platform 2nd training seminar" -[Mr. Kostika Gorica, Service provider]</p> <p>24."Sustainable energy use in the food industry, Energy problems in the present world" [USAMVB - Assoc. Prof.dr. Maria Toader]</p> <p>25."Consumer science and sustainable consumption" (WP3) [CULS - Prof. Michal Lošťák]</p> <p>26."Innovative product and process development" [CULS - Prof. Michal Lošťák]</p> <p>27."Entrepreneurship in the food industry; Rural development and Business economics and international trade in the agri-food sector" [AUA - Assoc. Prof Dr. Damianos Sakas]</p> <p>28. "LCA as a tool for the design and operation of sustainable agri-food supply chains" [AUA - Asst Prof. Giannis Tsoulfas]</p> <p>29. "Total Quality Management in the Agri-Food Sector - Part II " [USAMVB - Assoc. Prof.dr. Maria Toader]</p>	UNBI	34
11	22-28 May 2022	Pristina Kosovo	<p>30. "Wines, Beers, and Spirits as Products of Sustainable Agriculture", [Ing. Jiri Zeleny, Ph.D., CULS]</p> <p>31. "Composing Financial Statements" [AUA - Asst Prof Dr. Kanellos Toudas]</p> <p>32. "Integrating SDGs in developing Teaching Resources for STEPS modules", [Prof. Dr. Filipos Ruxho, UC]</p> <p>33. "Agri-food supply chains: Environmental hotspots Analyses - Framework & case study" [AUA - Asst Prof Dr. Foivos Anastasiadis]</p>	UC	39
12	10-14 October 2022	Sarajevo Bosnia-Herzegovina	<p>34. "Grain legumes - main source of vegetal proteins for European consumption" [Prof. Dr. Gheorhe Valentin Roman – USAMVB]</p> <p>35. "Experimental Measurements and Computational Modelling of Convective Drying of Quince Slices" [Alexandros Vouros – ReadLab P.C.]</p>	UNSA	36



Deliverable 3.2. Organization of open lectures and STEPS online sessions

13	20-26 November 2022	Tirana Albania	36. "Czech Food with Protected Geographical Indications: Is there a Clash between Traditions and Sustainability?" [Ing. Jiri Zeleny, Ph.D., CULS]	AUT	31
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