



UAIC Iași



ASE Bucharest



University of Bucharest



University of Catania



IAE – Belgrade, Serbia



IO 4 - Protocol for adapting the partner universities curricula



<p>Elaborated</p>	<ul style="list-style-type: none"> • University of Bucharest • Alexandru Ioan Cuza University of Iași • ASE Bucharest • University of Catania • ISCT-IUL Lisbon • IAE Belgrade
<p>Related Activities</p>	<p>Collection of information by the partner universities regarding the Curriculum from their own institutions.</p>
	<p>Elaboration of a draft Curriculum accepted by the project partners</p>
	<p>Collecting feedback from the main stakeholders regarding the needs in terms of skills and abilities of future employees</p>
	<p>The final proposal of the Curriculum agreed by the partners</p>
	<p>Availability of the Curriculum for interested Universities</p>

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1. Curriculum Design Process

One of the AGROECOINN project aims was to implement within the curricula of the partner universities a content that generates interdisciplinary competences, bringing together the expertise of specialists in agrifood economy, environmental economics, biologists and entrepreneurs, and exchanging good practices and the knowledge of the specialists among partners, represented by universities and research institutes.

The implementation of the AGROECOINN project, having as objective “to improve curricula to meet student learning needs in line with labour market requirements, in economic, biological and agricultural fields” help to fulfill the specific objective of the Erasmus+ Programme in the field of education” improve the level of key competences and skills, with particular regard to their relevance for the labour market and their contribution to a cohesive society”.

The partners involved in the project have quite high-skill in their professions, both in terms of qualifications and the quality of the associated skills. At the same time, too many students graduate with poor basic skills (theoretical information, digital abilities) and without the range of transversal skills (problem-solving, communication, etc.) that they need in a constantly changing world. In this project, Partner members have tried to harmonize the curricula in the partner universities, in order to create new skills for graduates students, which will facilitate their insertion into the labour market. The exchange of best practices and regional experience gained by project partners contributed also to the creation of additional competencies for graduates, through the interdisciplinary - biological, economic and entrepreneurial - approach of organic farming.

In the process of adapting a Curriculum, some preliminary steps must be taken:

- identifying the learning needs of students, the skills they must obtain in accordance with the requirements of the labor market;
- adapting the expectations related to student performance to the general educational activities carried out in the University;
- establishing, by groups of experts, the content of the curriculum so that it meets the requirements mentioned above;
- establishing the format of the courses, the teaching strategies, the specific objectives of the lessons and the necessary support materials;
- evaluating the effectiveness of the modifications made.

a. Identification of needs

The experience gained by partners proposing this project was led to the identification of niche needs in the area of organic agri-food markets. The need for multidisciplinary training results from a study conducted by Alexandru Ioan Cuza University in Iasi in 2017 on a sample of 758 students and 72 potential employers. At the same time, 41.95% of the total number of students participating in the study indicated they want to take part in entrepreneurship courses. In the case of the Faculty of Biology, 61% of respondents considered that they needed courses for business development.

On the other hand, employers participating in this study have highlighted the need for multidisciplinary training. Studies conducted for the Strategic Plan of the University of Catania (2019-2021) showed that although students in the field of Agriculture, Food and Environment showed satisfaction of over 90% in terms of studies content, integration into the labour market (one year after graduation) is very small 29.3% for agriculture, 18.6% for biological and geological sciences, 31.2% for economics. Actions have been proposed to improve the profile and interdisciplinarity of the educational offer.

In Portugal, AGER (Amway Global Entrepreneurship Report) shows that 67% of the subjects have a positive attitude towards entrepreneurship (especially less than 35 years of age - 78%).

At ASE Bucharest, a graduate employment studies in 2017 showed that 68% are full time employees and only 4% are entrepreneurs; only 2% of the graduates from the of Agrifood and Environmental Economics are involved in entrepreneurship. From 81 Master graduates only 3% are entrepreneurs, but 23% want to open their own business. 43.9% of Bucharest University students want to open a business.

b. Realization of the theoretical basis

It was necessary as a preliminary stage for the preparation of a common Curriculum proposal for the Partner Universities, but also for other interested Universities in the EU and outside it.

In the first stages of the project, 3 Intellectual Outputs were developed, which are made available, free of charge, to students and professors from any University interested in the interdisciplinary approach to entrepreneurship and organic agriculture.

O1 –“ Overview of the situation of organic farming, the eco market and their capitalization through the entrepreneurial initiative”. The course contains notions about sustainable and environmentally friendly organic farming, bio-nutrition, biological and biochemical characteristics of

organic products, organic food market in EU and the relationship with consumers. Specific notions regarding applied entrepreneurship in the field of organic agriculture were added; educational and instructive dimension was integrated, making it usable in partner universities in the project.

O2 –“Course for trainers - Agro-ecological development potential and entrepreneurial innovation”. The course presents the situation of organic farming, the organic products market related to the possibility of integration of these aspects in educational curricula in the involved partners. It highlights the regional particularities in the countries of the participants involved in the project.

O3 - MOOC ” -Organic food - from production to distribution”. The MOOC proposed in this project approach a strong interdisciplinary theme in a field of interest for university education.

2. Curriculum Development and Review Process

In the preliminary phase, 25 Syllabuses provided by the partner Universities/Institutes were analyzed to understand what the basic concepts are taught to undergraduate or master's students in the field of entrepreneurship, organic agriculture, green economy, etc.

The information was synthesized and the partners came up with proposals for a common Syllabus, which would capitalize on the interdisciplinary results already obtained in the AGROECOINN project. A Syllabus template was used to collect the proposals of the project partners.

a. Syllabus template

1.	University:	
2.	Type of study programme:	
3.	Study programme:	
4.	ECTS (Number of credits allocated)	
5.	Year of study:	
6.	Total lesson hours per semester:	<i>Lectures:</i>
		<i>Practicals:</i>
		<i>Seminars:</i>

1.	Course Objectives:	
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2.	Learning outcomes On successful completion of this course, student should be able to:	
3.	Course content:	
4.	Additional informations (if any):	

b. Feedback analysis

Analysis of feedback from employers regarding the skills required from future employees was obtained. The requested feedback concerned the opinion of the employers regarding the professional development of the students, including identification of successful features and existing needs.

Most of the interviewed employers have among their employees graduates of the partner Universities or of other Universities in the same geographical area. Their feedback is extremely important because they are the ones who use the competences and skills of former students in their daily activities.

79 questionnaires from employers from the 4 partner countries in the project were analyzed.

Questionnaire for employers

1. In the recruitment process, how important are the following aspects to you?

	Not important at all				Very important	
	1	2	3	4	5	
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The candidate's qualification through a master's degree
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Understanding of agri-food business concepts
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Practical experience in the field of agri-food
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Courses specific to the company's activity
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Master courses on the specifics of agri-food
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other, please specify:

2. In the recruitment process, how important are the following specific skills possessed by candidates?

Not important at all					Very important	
1	2	3	4	5		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Specialized in agri-food sector - European politics and strategies
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Knowledge of organic farming and product market in the European Union
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Understand a business plan
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Analyze the production and export of organic products in EU
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Conduct market research in the agri-food sector

3. What other skills and competencies (in addition to those mentioned in this questionnaire) do you consider important in the recruitment process of a new employee?

- 1 _____
- 2 _____
- 3 _____
- 4 _____

4. By what methods do you think the employee can acquire these additional skills?

- 1 informal, at work
- 2 formal, through specific courses provided in the university curriculum
- 3 other ways; mention them _____

5. To what extent do you consider it necessary to develop the skills of your employees through continuous training?

Not at all					Very much	
1	2	3	4	5		
1 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Graduates of bachelor's degree
2 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Graduates of university education – master's degree, including specialized courses on the agri-food field

6. To what extent should higher education institutions place greater emphasis on the following specific aspects in training?

Not at all important					Very important	
1	2	3	4	5		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Specialized in agri-food sector - European politics and strategies
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Knowledge of organic farming and product market in the European Union
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Create and understand of a business plan
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Analyze the production and export of organic products in EU
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Conduct market research in the agri-food sector
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Understand how to access financing in the agricultural sector

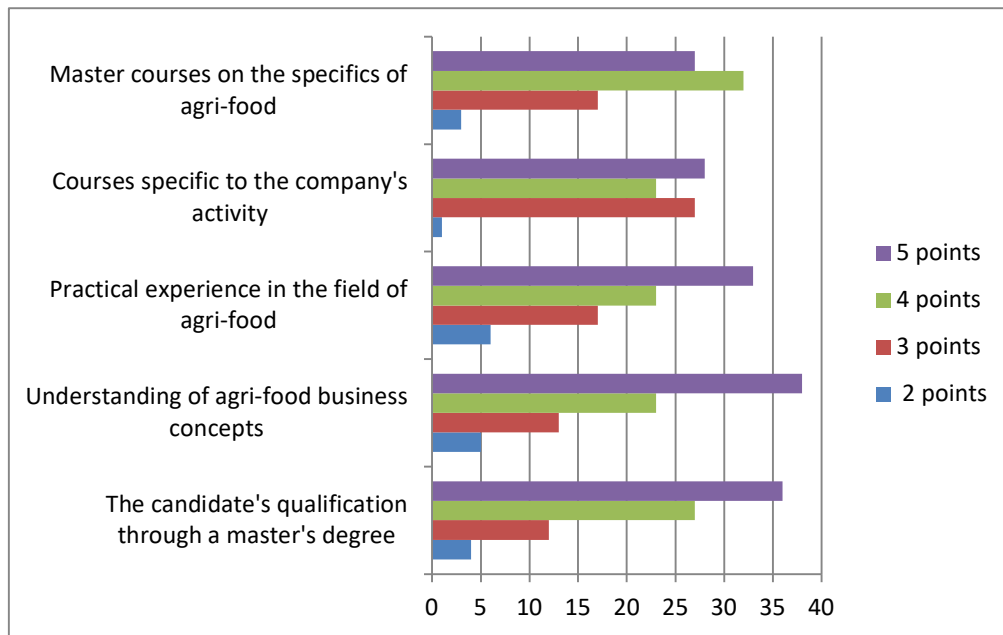
7. What changes would you recommend in the master's education system to address the gap in skills and abilities required in the labor market?

- 1 To provide better practical training, especially in agri-food companies
- 2 To provide better training in the field of agri-food
- 3 Closer collaboration with employers in the agri-food sector so that they know what skills and abilities to train
- 4 Other (specify which): _____

“Evaluation of agro-ecological development potential through transnational cooperation and entrepreneurial innovation”

Employers were asked to score, on a scale from 1 to 5, the importance of some aspects of the students' professional training that they take into account when hiring.

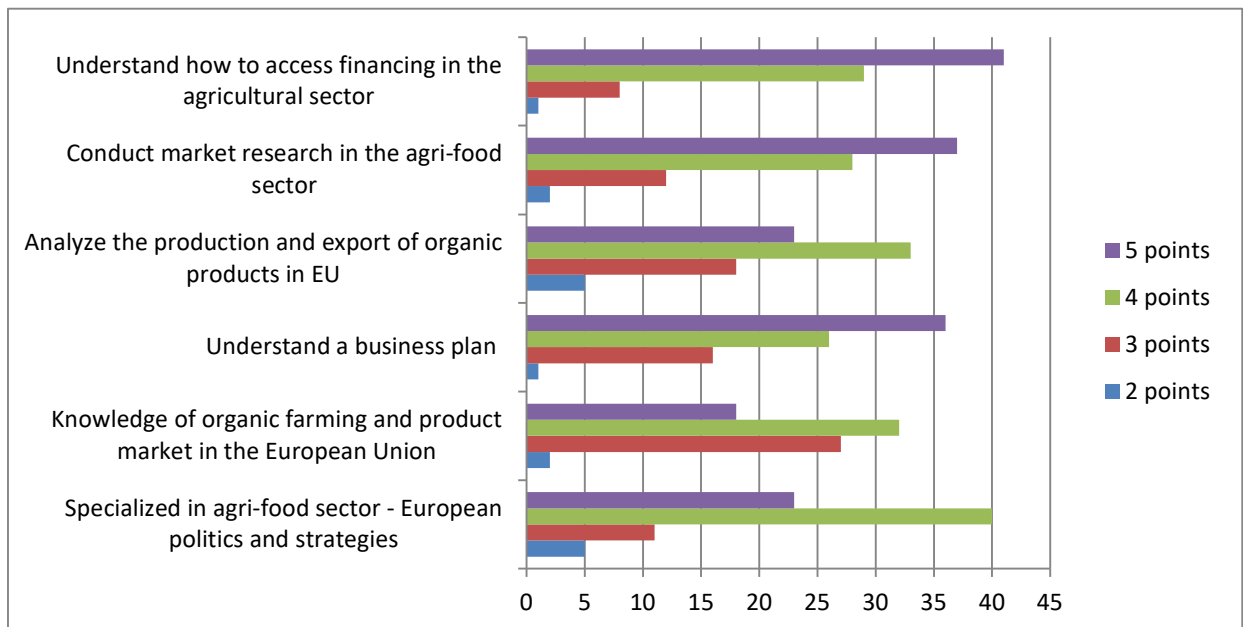
In the recruitment process, how important are the following aspects to you?



We found that a large part of them paid more attention to the following aspects: "Master courses on the specifics of agri-food" and "Understanding of agri-food business concepts", while the indicator "Courses specific to the company's activity" was less taken into account, considering the great diversity of companies/farms where graduates are employed after completing their studies.

When asked about the skills they would like from potential graduates in order to be employed, I noticed an increased interest in the possession of knowledge regarding sources of financing in the agri-food sector and understanding a business plan. Fewer employers were interested in future employees knowing the organic products market in the EU or its policies and strategies in the agri-food sector.

In the recruitment process, how important are the following specific skills possessed by candidates?



To the open-answer question regarding other skills (in addition to those mentioned in this questionnaire) are considered important in the recruitment process of a new employee, the following competencies were highlighted:

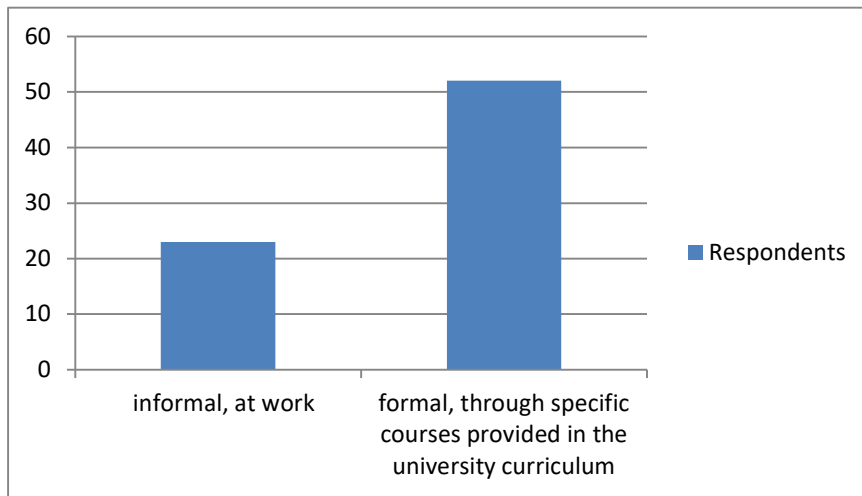
- interest and willingness to learn, decent behavior, ability to adapt to different environments;
- communication and relationship skills;
- skills to use different equipment;
- creating connections and determining interdependencies between concepts and information;
- the ability to work in a team;
- seriousness;
- constant improving of knowledges and abilities;
- Communicativeness and readiness for additional education;
- Good reaction in borderline situations;
- knowledge of foreign languages;
- the ability to work with the computer;

“Evaluation of agro-ecological development potential through transnational cooperation and entrepreneurial innovation”

- knowledge of the computers programmes;
- driver's license.

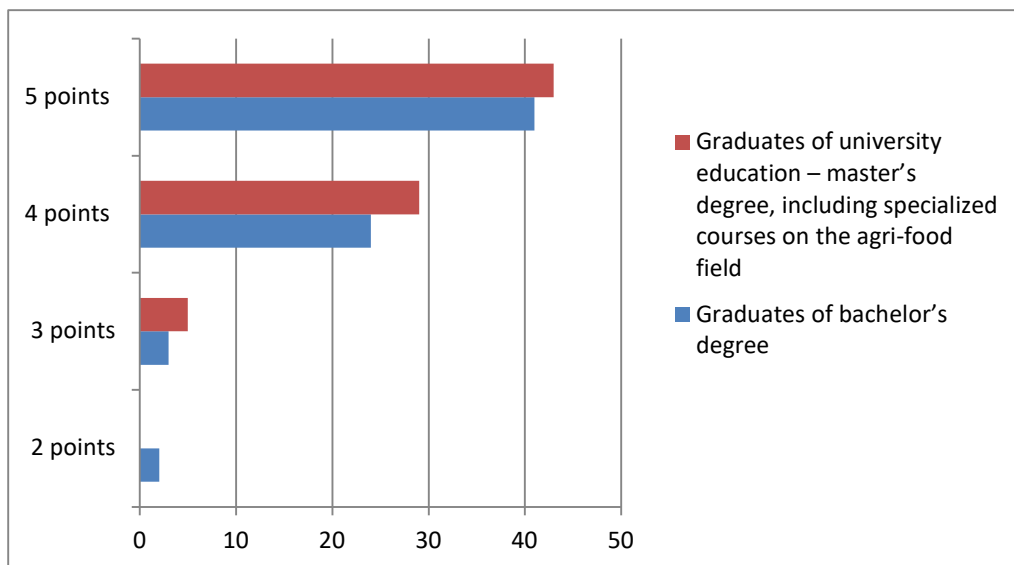
Regarding the method of obtaining the necessary skills for employment, the majority of respondents considered that they (or at least their basis) must be obtained in school, during the years of undergraduate and master's studies.

By what methods do you think the employee can acquire these additional skills?

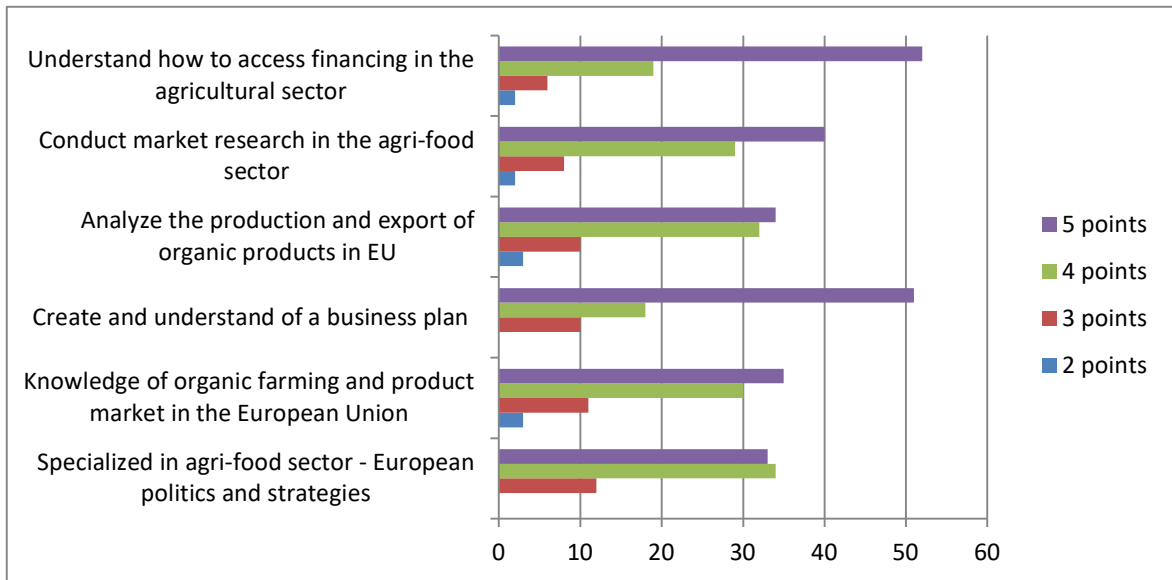


At the same time, employers considered it important and very important for their employees to complete their university studies (at bachelor's and master's level).

To what extent do you consider it necessary to develop the skills of your employees through continuous training?

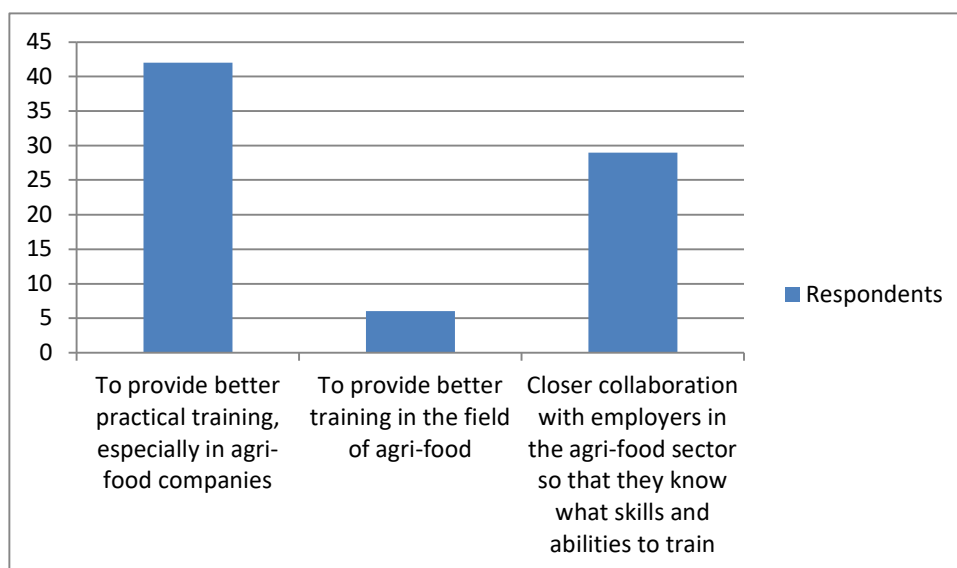


To what extent should higher education institutions place greater emphasis on the following specific aspects in training?



Employers overwhelmingly emphasized the need for Universities to put more emphasis on training students in the sense that they know how to draw up and understand a business plan and know the possibilities of obtaining financing in the field of organic agriculture.

What changes would you recommend in the master's education system to address the gap in skills and abilities required in the labor market?



3. Syllabus proposal

Based on the information gathered by the project partners from the Syllabus existing at that time in the Universities and based on the feedback from the employers following the interaction with the graduates of the partner Universities, a Syllabus was proposed that can be integrated into various master's programs, both in the Universities partners as well as in other interested Universities.

1.	University:	The Faculty of Business and Administration
2.	Type of study programme:	Master's Degree
3.	Study programme:	Sustainable agri-food business strategies
4.	ECTS (Number of credits allocated)	6
5.	Year of study:	1
6.	Total lesson hours per semester: 56 hours (200 - Total hours of study per semester (ECTS*25); 144 - Total hours of individual study)	Lectures: 28 hours
		Practicals: -
		Seminars: 28 hours

1.	Course Objectives:	<p>This course aims to deepen the following issues:</p> <ul style="list-style-type: none"> ✓ Common Agricultural Policy and the measures dedicated to organic farming in the European Union ✓ production and export of organic products in EU ✓ EU financing in the agricultural sector (green sector) ✓ creating a business plan in the agri-food field
2.	Learning outcomes On successful completion of this course, student should be able to:	<p>The students will be able to:</p> <ul style="list-style-type: none"> - Explain the structural changes in the agri-food sector - European politics and strategies; - Describe entrepreneurship in agri-food field; - Identify innovation initiatives in the agri-tech and food-tech ecosystem; - Understanding the basic principles of organic agriculture and the defining characteristics of organic products; - Point out aspects of the evolution of organic farming and product market in the European Union; - Understand what is the Common Agricultural Policy and indicate the measures that are dedicated to organic farming in

		<p>the European Union;</p> <ul style="list-style-type: none"> - Describe what are the European action plans; - Apply the subject regarding the circular agri-food systems and accessibility of healthy foods; - Analyze the production and export of organic products in EU; - Explain about competitive strategies on domestic and international markets; - Conduct market research in the agri-food sector; - Explain how to access financing in the agricultural sector; - Identify particularities of agricultural investment projects; - Create a business plan.
<p>3.</p>	<p>Course content:</p>	<p>Lectures (28 hours - 2h/week)</p> <ol style="list-style-type: none"> 1. Introduction course. Administrative discussions and explanation of the course structure and topic; 2. Structural changes in the agri-food sector - European politics and strategies; 3. Entrepreneurship in agri-food field - from idea to legal issues; 4. Innovation initiatives in the agri-tech and food-tech ecosystem; 5. The basic principles of organic agriculture and the defining characteristics of organic products. 6. Aspects of the evolution of organic farming and product market in the European Union; Common Agricultural Policy and measures dedicated to organic farming in the European Union; 7. European action plans - the instrument to support the development of the green sector; 8. Circular agri-food systems and accessibility of healthy foods; 9. Production and export of organic products in EU; 10. Competitive strategies on domestic and international markets; 11. Particularities of conducting market research in the agri-food sector; 12. Accessing financing in the agricultural sector; 13. Particularities of agricultural investment projects; 14. Review and discussion about the exam. <p>Seminars (28 hours – 2h/week)</p> <ol style="list-style-type: none"> 1. Introduction Seminar. Administrative discussions and explanation of the seminar topic and structure; 2. Case study – Successful agri-food business; 3. Case study – Successful agri-food NGO; 4. Case study – Country that absorbed funds in the agri-food field successfully; 5. Explaining how to complete an agri-food funding application; 6. Explaining how to make a business plan in the agri-food field; 7. Test

		8. Creating a business plan in the agri-food field – part one structure; 9. Creating a business plan in the agri-food field – part two; 10. Creating a business plan in the agri-food field – part three; 11. Creating a business plan in the agri-food field – part four; 12. Creating a business plan in the agri-food field – part five; 13. Presentation of the created business plans; 14. Communication of grades corresponding to continuous assessment / verification tests / other forms of assessment
4.	Additional informations (if any):	

4. Modernized Curricula in Partner Universities

By using the results obtained in the project, the development and integration of innovative training modules in standards and standardization in existing disciplines included in the curricula of the University of Catania, Alexandru Ioan Cuza University of Iasi, ASE Bucharest, ISCT-IUL Lisbon, Bucharest University was accomplished.

By using the results obtained in the project, the development and integration of innovative training modules in standards and standardization in existing disciplines included in the curricula of the University of Catania, Alexandru Ioan Cuza University of Iasi, ASE Bucharest, ISCT-IUL Lisbon, Bucharest University was realized.

As a result of the AGROECOINN project, 17 courses from the curricula of the 4 universities were modernized. The specifics of the concrete educational contexts were taken into consideration, by integrating in the teaching and learning process both the chapters of the two (published) courses that represent the first 2 Intellectual outputs (O1 and O2) as well as the video modules from the third Intellectual output (MOOC). Each improved course used certain chapters or modules from Intellectual Outputs, depending on its specificity and content (this was possible due to the deeply interdisciplinary character of Intellectual Outputs realized within the AGROECOINN project).

The improved courses using the results of the Project:

Nr crt	Course name	Specialization	University Degree/year of study	University
1	Management delle imprese per l'economia sostenibile" (Firms management for sustainable economy)	Economia e Management del Territorio e del Turismo" (Economy and management of tourism and land)	Bachelor's Degree/ second year	University of Catania
2	Anthropic ecosystems	Biodiversity Conservation	Master's Degree/ first year	Alexandru Ioan Cuza University of Iasi
3	Food Biochemical transformations	Microbial and cellular biotechnologies	Master's Degree/ second year	Alexandru Ioan Cuza University of Iasi
4	Integrated Pest management	Biology	Bachelor's Degree/ third year	Alexandru Ioan Cuza University of Iasi
5	Entrepreneurial Finance	Business Administration	Bachelor's Degree/ third year	Alexandru Ioan Cuza University of Iasi
6	Food sector economics	Agrifood and Environmental Economics	Bachelor's Degree/ third year	ASE Bucharest
7	Eco marketing	Agrifood and Environmental Economics	Bachelor's Degree/ third year	ASE Bucharest
8	Agromarketing	Agrifood and Environmental Economics	Bachelor's Degree/ second year	ASE Bucharest
9	Food security and safety	Agrifood and Environmental Economics	Bachelor's Degree/ second year	ASE Bucharest
10	Agro food markets research	Economics and administration of agro-food businesses	Master's Degree/ first year	ASE Bucharest
11	Agro-food products trade	Economics and administration of agro-food businesses	Master's Degree/ second year	ASE Bucharest
12	Food markets research management	Management of rural and regional development projects	Master's Degree/ second year	ASE Bucharest
13	Smart Sensors for Precision Agriculture		Master's Degree/ first year	ISCT-IUL Lisbon

14	Green Economy	Business administration	Master's Degree/ year	first	Bucharest University
15	Operations Management	Business administration	Master's Degree/ year	first	Bucharest University
16	Business Consultancy	Business administration	Master's Degree/ year	first	Bucharest University
17	Principles of Strategic Marketing In Business	Business administration	Master's Degree/ year	first	Bucharest University

5. Conclusions

The proposed curriculum will provide the opportunity for the Universities programs to improve their educational activities through the interdisciplinary approach to the problems related to organic agriculture: on the one hand, the knowledge of the biological bases that underlie it, on the other hand, the development of early entrepreneurial skills for the students following these courses. It creates a space where informations are accessible and shared. It could improve the life level in different communities and provide the support for ecological farming practices.

By using the interdisciplinary educational resources generated in the AGROECOINN project to improve the Curriculum of the partner universities and other universities that will use these products (available free of charge even after the completion of the project), it will be possible to train students with skills closer to the current requirements of the labor market.

Entrepreneurial skills develop over time, this phenomenon being able to be supported by various associated learning and training techniques. A well-prepared Curriculum permanently exposes the student to new stimuli and develops critical thinking, thus contributing to building a specialist adaptable to various working conditions.