

PR1 FOOD SUSTAINABILITY VET MODULE

LEARNING UNITS AND OUTCOMES







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Consortium















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1. INTRODUCTION

The food industry is facing challenges that require adaptation of the current and future workforce if the sector is to remain sustainable and competitive in Europe. This requires even greater collaboration between education and training service providers and enterprises.

To achieve this, it is widely recognised that education and skills development require new models to achieve better integration of skills. Examples of such models include:

- Work-based learning methods (WBL)
- New competency-based vocational education and training (VET)
- The incorporation of transversal hard and soft skills into existing trainings
- New channels for the professional development of the existing workforce.

In Europe, vocational education and training has updated its curricula to include sustainability-related topics especially in the areas of tourism, agriculture, food industry and energy management. However, the same evolution has not been promoted in VET training courses dedicated to catering and hospitality. On 30 November 2020, ministers responsible for vocational education and training from EU Member States, candidate countries, EEA-EFTA (European Economic Area-European Free Trade Association) countries, European social partners and the Commission endorsed the Osnabrück 2020 Declaration on vocational education and training "as an enabler for recovery and just transition to digital and green economies".

The Osnabrück Declaration is supported by the associations of VET providers at European level (VET4EU2) and representatives of VET learners (OBESSU, European Network of Apprentices).

Among the recommendations of the Council on vocational education and training for sustainable competitiveness, social equity and resilience included in the Osnabrück Declaration is to "promote the sustainability of VET".

What better way to do this than by including such a burning issue, essential for the survival of the whole of humanity, as food sustainability?

Due to the lack of a unique and precise description of the expected learning outcomes in food sustainability in the VET Education European system of skills and competences, the consortium of this project decided to analyze the existing food sustainability curricula on food sustainability of the food related VET programs in Spain, Italy, Belgium and Portugal, in order to find the most important differences and common points.





The purpose of this first project outcome is to take the first step in that direction, by building a transversal Training Module for VET in catering entirely dedicated to food sustainability. In order to do so, we have considered it appropriate to analyse the existing situation in the countries of the partners participating in the project, since each in its own way, the schools have already carried out, in some cases on a completely voluntary basis, some curricular adaptations in this sense.

Food Sustainability in Spanish food related VET Courses

Spain, as has been done in other countries, has increased the offer of Vocational Training Courses dedicated to sustainability in the areas of mobility (Higher Technician in Training for Safe and Sustainable Mobility), energy (Higher Technician in Renewable Energies), vehicle maintenance (Specialisation Course in Hybrid and Electric Vehicle Maintenance) and socio-cultural services (Higher Technician in Promotion of Gender Equality). However, there has been no innovation whatsoever (neither in terms of the creation of new training courses, nor in the updating of the syllabuses of the existing ones) in the areas of catering and hotel and catering and food industries.

It has been the educational centres, both public, state-subsidised and private, that have expanded the contents, in some cases including subjects related to food sustainability, taking advantage, in some cases, of the so-called "free disposal hours" included in some of the training units of the modules of each cycle. This is the case of the Escola Superior d'Hostaleria de Barcelona, partner and coordinator of this project, which has included food sustainability in a cross-cutting manner in various training modules of the Intermediate and High Training Courses in Cookery, Catering and Pastry Services.

In order to do it, ESHOB teachers are using the Learning Units and contents of the Erasmus+ Project Training for Food, in some case including all the contents (LU from 1,2, 4) o part of them (LU 3, 5, 6, 7, 8), reaching a total of 54 hours of training (including both theoretical and practical activities) according to the following scheme:





LIST OF TRAINING UNITS (TU) ON FOOD SUSTAINABILITY BASED ON E+ Training for Food (T4F) PROJECT RESULTS AND CORRESPONDING MODULES AND TRAINING UNITS OF THE INITIAL AND HIGHER VET COURSES OF CULINARY ARTS, RESTAURANT SERVICES AND PASTRY ARTS

N.	T4F FOOD SUSTAINABILITY LEARNING UNITS	INITIAL VET CULINARY ARTS	INITIAL VET RESTAURANT SERVICE (+ PART OF CULINARY ARTS TRAINING)	DOUBLE INITIAL VET COURSE: CULINARY AND PASTRY ARTS	HIGH VET KITCHEN MANAGEMENT AND RESTAURANT SERVICE MANAGEMENT
1 1	Healthy and sustainable diets	M1 Gastronomic Offers. UF2 Dietary and nutritional food properties	M1 Gastronomic Offers. UF2 Dietary and nutritional food properties	M1 Gastronomic Offers. UF2 Dietary and nutritional food properties	M7 Gastronomy and nutrition UF2 Dietetic and nutrition
2	Biodiversity, seasonality and organic food 18h	M2 Pre- processing and preservation of food. All TU	M2 Pre-processing and preservation of food. All	M2 Pre-processing and preservation of food. All	M1 Pre-processing and preservation of food in the kitchen. All TU
3	Water and land management food footprints 2h	M7 Food handling safety and hygiene. UF2 Environmental protection	M7 Food handling safety and hygiene. UF2 Environmental protection	M7 Food handling safety and hygiene. UF2 Environmental protection	M6 quality, food safety and hygiene management UF2 tourism and environmental quality management.
- 4	Food loss and food waste 14h	M3 Culinary techniques. All TU	M3 Culinary techniques. All TU	M3 Culinary techniques. All TU	M4 Culinary production processes. All TU
5 5	Circular economy and resilience 4h	M9 Business and entrepreneurship	M12 Business and entrepreneurship	M11 Business and entrepreneurship	M12 Business and entrepreneurship
6	Local economy and alternative systems 2h	M11 Synthesis (Final Project)	M13 Synthesis (Final Project)	M13 Synthesis (Final Project)	M13 Project
7 7	Ethic and inclusive business models	M8 Training and career counselling. UF1Integration into the labour market	M11 Training and career counselling. UF1Integration into the labour market	M10 Training and career counselling. UF1Integration into the labour market	M11 Training and career counselling. UF1Integration into the labour market





astronomy and atrition. UF1		1	M1 Gastronomic o UF1 Catering comp			M1 Gastronomic offers. UF1	Food and cultural heritage	8
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Food Sustainability in Portuguese food related VET Courses

Turismo de Portugal, integrated within the Ministry of the Economy, is the national tourism authority responsible for training and qualifying the tourism sector human resources and for technical and pedagogical research. It also coordinates, implements, and recognizes the courses and vocational training actions in this area. Moreover, it certifies the professional skills required for tourism careers (in DL n. ^o 129/2012, de 22 de junho).

Enhance the qualification of human resources in the sector, regarding the plans of action enrolled in "Tourism Strategy 2027" which include:

- Highlight tourism professions and the development of courses and training programs that respond to market needs;
- Knowledge transfer from educational institutions and research centers to enterprises.

Turismo de Portugal also manages a network of 12 schools that aim to teach and train young people and to prepare them for their first job, improving the quality and prestige of the different tourism careers.

Turismo de Portugal considered that sustainability area was a very important vector for the development of human capital and since that started to integrate program contents dedicated to this theme in the curricula of tourism schools.

In 2017 - when a deep change in **5 EQF** courses was made "Sustainable & Responsible Tourism" was a module created to be present in all curricula tourism programs. (in DL n. º 2570/2018, de 18 de março; DL n. º 2787/2018, de 19 de março; DL n. º 2788/2018, de 19 de março; DL n. º 2789/2018, de 19 de março; DL n. º 2790/2018, de 19 de março). This module is one of the mandatory subjects.





In 2019 another change was made: Turismo de Portugal decided to transform all **4 EQF** programmes to learning results and created" **Sustainable Gastronomy Practices**".

This module is a mandatory subject present in the course programme of pastry and kitchen technician. (n. º 102, de 24 de abril de 2020).

The two modules dedicated to sustainability are:

- Sustainable & Responsible Tourism (25h, 1,5 ECTS, 5 EQF)
- Sustainable Gastronomy Practices (50h, 4,5 ECTS, 4 EQF)

Sustainable & Responsible Tourism Learning Objectives Knowledge:

- The concept of sustainability for tourism.
- Role of this sector in meeting the sustainability challenge.
- Concept of sustainability applied to tourism, given its different dimensions and principles.
- Importance and practicability for sustainable tourism of International and National policies, programs, and initiatives, such as:
 - Charter for Sustainable Tourism
 - Global Code of Ethics for Tourism
 - Action Plan for more sustainable European tourism
 - Paris Agreement
 - International Conference on Climate Change and Tourism
 - Global Sustainable Tourism Council
 - Portugal Tourism Strategy 2027
 - Plano Turismo + Sustentável 2023
- Good sustainability practices in the sector (CSR and Circular Economy).
- Certification system destinations, hospitality; tour operators, travel and catering agencies.
- Sustainable tourism indicators and their scales of use.

Skills:

- Recognise the importance of sustainability applied to the tourism activity.
- Identify and understand the negative and positive impacts of tourism.
- Understand and relate the concepts of sustainability, corporate responsibility, circular economy, indicators, certifications, etc.
- Understand the policies, strategies and instruments that aim the achievement of sustainable tourism.
- Understand how to apply the principles of the Global Code





Sustainable Gastronomy Practices Learning Objectives Knowledge:

- Food products and Sustainability
- Sustainable cooking practices and resource management
- Concepts of sustainable cuisine and gastronomy
- To value gastronomy identity

Skills:

- Identify Portuguese food products and their seasonality
- Differentiate food distribution systems
- Promote Sustainable Practices in the management of food resources
- Reuse kitchen waste
- Identify Sustainable food resources in regional cuisines and promote them

Food Sustainability in Italian food related VET Courses

Italian Vocational Training Courses have a duration of 5 years, and they are divided in 2 sections:

- First cycle of two years in which students learn general competences of the area chosen (students from 14 to 15) (this training corresponds to 2 EQF).
- Second cycle of three years in which students are trained on specific and deeper competences of the area chosen (students from 16 to 18) (this training corresponds to 4 EQF).

Vet schools in Italy have 11 different addresses and among them the courses with attention to environmental sustainability are in the areas of agriculture (Agriculture - rural development - local products - forest resources) and fishing (Commercial fishing and fish production). The VET courses related to food are Hotel and management schools that include courses for:

- Culinary arts
- Food and beverages management
- Hospitality

The final EQF level is 4.





The philosophy of "De Gennaro" Institute is related to the territory as the school is situated in Vico Equense in Sorrento area, in the south of Italy. Traditionally all the district is strictly related to the territory that has a long tradition in Mediterranean cuisine and a long touristic vocation. The relation to the traditional recipes and lifestyles has been enhanced in the last 10-15 years. Therefore, the themes of sustainability and food sustainability have been faced since 2016 and it is developed in many disciplines in courses for culinary arts, food and beverages management, and hospitality. As the theme of food sustainability has been mainly treated only in a theoretical way, the new challenge is to draw attention to good practices in this sense.

At De Gennaro the module of sustainability is developed in the framework of

CITIZENSHIP: Introduction of a new school subject called Citizenship one of the theme is environmental sustainability, right to health and well-being of the person. The teaching themes are environmental education, eco-sustainable development and protection of the environmental heritage, identities, productions and territorial and agri-food excellence; the themes refer explicitly to the objectives of the 2030 Agenda. Note that each school programs its own modules on environmental sustainability as in Italy we are in an experimental phase.

The module of *food sustainability* in Hotel and management schools was introduced by the Minister of Education after many innovations of school curricula, mainly after the publication of the Milan Charter at Milan Universal Exposition - EXPO 2015 which was also a sounding board for the dissemination of the UN 2030 Agenda.

After some years a reform (D.Lgs. 61/2017 and D.M. 92/2018) has reorganized the structure of VET schools, which is going fully operational in 2022/2023 school year. The reform of VET has introduced a new type of programming by competences for lifelong learning.

From the institutions (Italian Ministry of Education) the reference to sustainability in the food related VET training programs are competences n ° 2, 4 and 8 (from Annex C of the VET reform); the competence n° 4 for the last year of culinary art course is the more specific for food sustainability.

During the first two years of the training at De Gennaro School they develop competences applying the essential principles of environmental eco-sustainability to perform simple tasks, in structured contexts, according to pre-established criteria for the creation of simple menus and tourist offers (this training corresponds to 2 EQF). During the third year they apply basic procedures for the organization and sale of menus and packages of tourist offers in line with the principles of eco-sustainability and with the opportunities offered by the area. (3 EQF)

Lastly, during the two last specialization years the students will reach the expected objectives of the cited competence n. 4:

 SKILLS PROGRAMMING: Prepare products, services and menus consistent with the context and needs of customers (also in relation to specific diets and eating styles), pursuing objectives of quality, profitability and promoting the spread of habits and sustainable and balanced lifestyles.





This part of the training corresponds to 4 EQF.

The **knowledge** acquired during the whole training are:

- Cultural value of food and relationship among food and wine, society and culture of a territory
- Concepts of sustainability and certification
- Innovative technologies of food handling and storage and related quality standard
- Concepts of promised, delivered, expected and perceived quality

The skills developed during the whole training are:

- Develop an offer of food, wine products and services designed to promote a balanced lifestyle from a nutritional point of view and sustainable and environmental point of view.
- Bring personal innovations to food and wine production providing technical explanations and cultural motivations, promoting the spread of sustainable and balanced habits and lifestyles.
- Define qualitatively and economically sustainable gastronomic offers, adapting the choices to the changing trends of taste, dietary regimes, eating styles of the target customers.
- Activate information, communication and environmental education interventions through the involvement of customers and stakeholders.

Food Sustainability in Belgian food related VET Courses

The food sector is the most important economic sector in Belgium in terms of the jobs it creates and its contribution to the complex GDP¹. But the Belgian political system makes it difficult to read the legislation.

- The federal government is competent for public health.
- The Regions are competent for environmental policies, health policies (preventive and curative medicine) and agriculture.
- The Communities are responsible for education.

¹ Gouvernement wallon, « Développement durable. 2e Stratégie wallonne », 7 juillet 2016.





Sustainable nutrition

The Federal Nutrition and Health Plan (FHNP) promotes a healthy diet and lifestyle throughout Belgium to prevent diseases linked to poor nutrition and lack of physical activity².

Moreover, since access to food is a fundamental right, a bill is currently being drafted to establish the "right to quality food", which includes the establishment of sustainable food systems³.

In addition to public health policy, the federated entities are also implementing various policies aimed at the dissemination and implementation of sustainable food.

On 7 July 2016, the Walloon government signed the second Walloon Sustainable Development Strategy. This strategy leads to an action *plan "aimed at making consumption and production patterns more sustainable in 3 areas in particular: food, energy and resources".* This text calls for "*defining the principles and criteria of sustainable food for Wallonia"* and "*drawing up and inviting the signature of a "sustainable food for Wallonia"*.

food" charter in Wallonia", but also for supporting cooperation and the exchange of good European practices as well as the development of European food labels. Overall, the Strategy addresses all links in the food chain, from producer to consumer, and promises various actions such as promoting sustainable food in the hotel and catering sector and supporting the implementation of individual and collective vegetable gardens.

The Strategy also aims to work towards greater coherence in food aid and the reduction of "social inequalities in food". Within the framework of this Walloon Sustainable Development Strategy, a reference framework project⁴[4] is being considered with the aim of making the Walloon food system more sustainable and competitive. This project goes hand in hand with the setting up of multi-stakeholder food policy councils (CPA), for example Good Food in the Brussels Region, Liege, Ghent and Bruge. These CPAs are an opportunity for stakeholders to discuss, collaborate and imagine future local initiatives.

Education for sustainable development

Education for sustainable development or sustainable food do not appear as such in the Belgian school curricula. However, in November 2011, the Wallonia-Brussels Federation, the Walloon Region and the Brussels Capital Region concluded a cooperation agreement aimed at promoting and developing educational strategies related to the environment and nature in the perspective of sustainable

vernement wanon, « Developpement durable. Ze Strategie wanonne », 7 Juliiet 2010.

² SPF Santé publique, « Le Plan Fédéral Nutrition Santé »

³ Plateforme de débat pour un accès à une alimentation de qualité, « Adopter une loi-cadre instaurant le droit à l'alimentation de qualité ».

⁴ Gouvernement wallon, « Développement durable. 2e Stratégie wallonne », 7 juillet 2016.





development and citizenship education. Concluded for a renewable period of 6 years, this cooperation agreement has 6 main objectives⁵:

- 1. "Boost information on the actions and campaigns undertaken by the three institutions by including them in their respective action programmes."
- 2. "Strengthen the creation of quality teaching tools in the field of education on the environment, nature, and sustainable development."
- 3. "Develop a better integration of the environment and nature in the educational process; to promote the development of the educational process in the field of sustainable development. "Develop a better integration of environmental, nature and sustainable development education in the school curriculum in order to provide students with a responsible citizenship education."
- 4. "Offer structured assistance to schools and higher education institutions that include sustainable development in their school project."
- 5. "Ensure the reciprocal exchange of knowledge and experience between actors in environmental, nature and sustainable development education with the aim of improving educational practices".
- 6. "Ensure logistical collaboration in the field of environmental, nature and sustainable development education".

Following a participatory process that took place from October 2010 to April 2011, the institutions participating in the Assises de l'Éducation relative à l'Environnement et au Développement Durable (ErEDD) "committed themselves to setting up mechanisms to support and strengthen ErEDD in schools".

Finally, **Environmental Education** is articulated around three objectives⁶:

- Environmental: EES aims to make the functioning of humanity compatible with the global ecology of the planet by promoting the participation of citizens in the responsible management of the environment and resources in a spirit of solidarity.
- Educational: It aims at the fulfillment of people and communities through their relationship with the environment and nature.
- Pedagogical: It promotes the development of an education that is more accessible and better adapted to the complexity of the world and the needs of contemporary societies.

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⁵ Assemblée Parlementaire de la Francophonie, Débat sur l'éducation au développement durable. Contribution de la Fédération Wallonie Bruxelles, mars 2012.

⁶ Réseau Idée, « L'Education relative à l'Environnement, c'est quoi ? »





Good Food Strategy

The Good Food Strategy (2016-2020) – towards a sustainable food system in the Brussels Capital Region – was approved by the Brussels Government in 2016, including more than 100 farm-to-fork measures. The objectives and measures were co-constructed in Brussels in a participatory process by the Good Food Council. The Council has 28 members representing all the different actors within the food sector (agroecology organizations, farmers, restaurants, the federation of supermarkets, environmental education organizations, universities, etc.).

The first Good food strategy aimed to develop new farming projects in city areas to produce 30% of fruit and vegetables locally by 2035, involve the younger generation in food-related challenges and reduce food waste by 30% by 2020. Furthermore, innovative projects have been supported through the Good Food strategy to promote vegetable gardens in schools and the neighborhood, regional service to facilitate urban agriculture, supporting young urban farmers, professional projects in urban agriculture using innovative techniques (such as aquaponics), projects for the recovery of unsold food, and preventing food waste in schools. The strategy also previewed the release of the Good food label for restaurants and canteen, indicating the use of local, organic, vegetarian food and food waste prevention measures.

In 2022, following the positive results of the first experience, the Brussels region has developed a Good Food 2 strategy (2022-2030). The strategy includes four transversal principles:

- I. A participatory, decompartmentalised and co-sustainable governance.
- II. A principle of social inclusion, health and food sovereignty with "One World One Health".
- III. The challenges of combating & adapting to climate change and protecting & enhancing and strengthening biodiversity.
- IV. Multiple urban environments approach (district, region, supra-regional) and multipolar (city center, Neerpede area, etc.), which will consider the specific ecological, socio-economic and cultural characteristics and the needs of the inhabitants of the various urban areas.

The strategy is implemented through 5 axes:

- Axis 1: Intensify and support agro-ecological production in Brussels and the surrounding area.
- Axis 2: Develop "Good Food chains" to supply Brussels.
- Axis 3: Ensure the distribution of a "Good Food" commercial offer.
- Axis 4: Ensure Good Food for all.
- Axis 5: Reduce food loss and waste.

Le portail Good Food | Good Food





Additional available hours present in VET curricula modules in Spain, Portugal and Italy.

The purpose of the analysis of the quantity of additional available hours (extra teaching hours that each VET school can use to add or deepen the contents that it deems necessary) is to determine the correct and realistic number of hours of the new Food Sustainability VET Module.⁷

Additional available hours

COUNTRIES	INITIAL VET CULINARY ARTS	INITIAL VET RESTAURANT SERVICE	INITIAL VET PASTRY ARTS	INITIAL VET FOOD PROCESSING	HIGH VET KITCHEN MANAGEMENT	HIGH VET RESTAURANT SERVICE MANAGEMENT	HIGH VET PROCESSES AND QUALITY IN THE FOOD INDUSTRY
SPAIN	132h	132h	132h	132h	165h	165h	165h
PORTUGAL	135h*	135h			90h**	90h	
ITALY	80h***	80h***			80h***	80h***	

Taking as a reference this compilation of available hours, it has been decided to set the duration of the module at 54h.

^{* 1,5}h x 30 school weeks x 3 years

^{** 2}h x 45 school week

^{*** 2}h x 20 school weeks x 2 years

⁷ In the analysis of the extra hours to determine the correct and realistic number of hours of the new Food Sustainability VET Module, we don't consider Belgium, since the training will not be implemented in the country, and we would like to take in consideration the average hours emerged only from the piloting countries.





2. LEARNING AREAS

The Module has been organized by areas (Nutritional, Ecological, Economic and Social) and by Learning Units (also called Didactic or Training Units depending on the European country), each one composed by a list of contents, learning results, skills, knowledge and competences.

There will be 3 ways to include the Module in the food related European VET curricula:

- Including all or a part of its Units of the Food sustainability module in other modules coherently
 with the subject (in a "transversal" way). This will be the fastest way to include the new food
 sustainability module in the VET curricula, with the advantage of the possibility of introducing
 food sustainability issues from different points of view, depending on the involved teachers (from
 food, social, economic and nutritional areas of study).
- 2. Recollecting all the additional available hours of the VET curricula (if they exist and are available) in order to make the place for the new module.
- 3. Boosting the creation of a new official VET Module in food related VET curricula.

Contents, skills and competences on food sustainability prepared for the previous ERASMUS+ Training for Food project, those eligible to be included in the VET training module will be selected following criteria of coherence and utility for the future professionals of the food service sector.

Health/Nutritional

1. Healthy and sustainable diets.

Ecological

- 2. Biodiversity, seasonality and organic food.
- 3. Water and land management and food's footprints.
- 4. Food loss and food waste.

Economic

- 5. Circular Economy and Resilience.
- Local Economy and alternatives systems.

Social

- 7. Ethic and inclusive food business
- 8. Slow food and cultural heritage







3. LEARNING UNITS

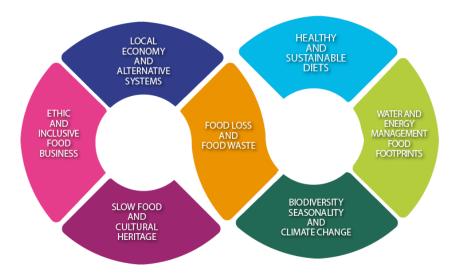
Methodology

In order to define the learning outcomes of the Food Sustainability Module, a scheme of contents based on competences (as detailed by CEDEFOP⁸) has been carried out with detailed related knowledge and skills. On these bases the list of contents has been then elaborated.

Just as a reminder, it is important to notice that a skill is the ability, the "what" a person has to be able to do in order to complete a task. The competences represent the capacities, the "how do to" needed to develop a job.

The list of competences used as a starting point is the one presented in the theoretical framework of the Erasmus+ project T4F, Training for Food, mentioned above and available in the Annex 1.

Food Sustainability VET Module Scheme of Competences



The final outline of competences and related knowledge and skills for each learning unit is detailed below.

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⁸ https://www.cedefop.europa.eu/files/3048 en.pdf





	HEALTH/NUTRITIONAL AREA LEARNING OUTCOMES 1. Healthy and sustainable diets						
Knowledge			Skills (Abilities to apply)	Competences (To be able to)			
1.	How to eat healthy and save the planet.	1.	Critical thinking on food decision choices.	1.	Identify preferences among nutritious foods and build a balanced		
2.	Consumer behaviors and their implications.	2.	Practical skills to persuade consumers to choose healthy food	2.	meal. Understand nutrition labels.		
3.	Novel foods as an alternative to be more sustainable and profitable.	3.	Select adequate information sources related issues, based on science	3.4.	Create healthy, sustainable and profitable food proposals. Exploring new sustainable		
4.	One health and planetarian diet approach as a model of sustainability.				ingredients.		

ECOLOGICAL AREA LEARNING OUTCOMES 2. Biodiversity, seasonality and climate change						
Knowledge	Skills (Abilities to apply)	Competences (To be able to)				
 Know how food consumption impacts the environment and biodiversity. Know how climate changes and societal challenges influence food production. EU and national labeling on organic food How gastronomy contributes to biodiversity preservation or loss 	 Recognise the importance of seasonality, sustainability of food. Select adequate information sources on how climate changes impact on your country and on food 	 Select organic and seasonal food suppliers in their own area through a "gastronomic, tasty, and fair "point of view. Put in practice the proper regulations and applications that are behind organic production. Re-appropriate recipes and cooking techniques for sustainable food (vegetables, fruits, meat, fish, spices etc). Build a communication and promotion campaign. Propose a remodulation of a menu taking into account climate changes consequences on food production. 				
ECOLOGICAL AREA LEARNING OUTCOMES 3. Water and energy management and food's footprints						
Knowledge Skills Competences (Abilities to apply) (To be able to)						





- The relationship between our food systems and emerging global environmental risks.
- Quantification of the different environmental impact of food groups.
- Hints and tips for improving resource efficiency in terms of water and energy management (eg. IV Gamma).
- 1. Apply the Food print parameters.
- 2. Develop Strategies to reduce the footprints of their activities.
- 3. Monitoring the water and energy consumption.
- 4. Improve resource efficiency.
- Make responsible decisions and understand how much food production impacts the environment.
- 2. Introduce measures to address climate change mitigation and adaptation in the food sector.
- 3. Adopt measures to improve resource efficiency (water and energy).

ECOLOGICAL AREA LEARNING OUTCOMES 4. Food loss and food waste						
Knowledge	Skills (Abilities to apply)	Competences (To be able to)				
 The issues related to food waste and losses occurring along the food-supply chain, with particular focus on logistics, distribution, money savings and final consumption. Strategies and/or best practices could be developed to reduce food waste and losses and/or donate leftovers. Proper packaging for prevention. National rules and laws on food waste to leftovers donation. 	 General understanding of food loss and food waste in the food chain. Preservation technique to reduce food waste. Design specific actions (e.g., menus) aiming to reduce waste. Organize their work more efficiently to avoid improper behavior. Low impact packaging solutions. 	 Plan and implement ecological strategies to reduce food loss. Plan and implement ecological solution to reduce food waste. Use packaging format and materials to maximize shelf life and minimize food waste. Design a strategy towards reduction of food waste. Implement storage technique. Implementing practices for a circular economy. 				
	ECONOMIC AREA LEARNING OUTCO					
Knowledge	Skills (Abilities to apply)	Competences (To be able to)				
 The importance of local economy for sustainable development. Strategies and/or best practices of alternative food systems in terms of production, distribution and purchasing. Local food commercial value. Circular economy and its role in the promotion of the local economy. 	 Be aware of the role of local economy on the development of a sustainable business. Set up strategic partnerships of purchasing, producing, and distributing food based on alternative food systems. Identify and use the added value of local products to promote your activity. Adopt a circular thinking. 	1. Apply private and public programmes that promote the development of local food projects/business. 2. Working in collaboration with the local business community and building bridges among complementary partners. 3. Communicating local food added value and promoting local food offer. 4. Developing business ideas based on the principle of circular economy.				





SOCIAL AREA LEARNING OUTCOMES 6. Ethic and inclusive food business							
Knowledge	Skills (Abilities to apply)	Competences (To be able to)					
 Fair trade principles and diversity inclusion equity jobs practices. Knowledge about change makers in the relationship between economy, ecology, and society through a multilevel approach to sustainable development. 	 Recognise the importance of fair trade and equity at work. Set up strategic partnerships to have an impact with your business. Develop critical and design thinking. Build a common vision regarding product quality, partner relationships and customer service. 	 Set CSR in a food enterprise. Identify the fair price of food products. Set diversity inclusion equity plan. Communicate the link between prices and value to consumers. 					

	SOCIAL AREA LEARNING OUTCOMES 7. Slow food and cultural heritage							
	Knowledge	Skills (Abilities to apply)	Competences (To be able to)					
1.	The relationship of food with cultural identity of the territories. Protected designations: roles and applications for	traditional culture. 2. Identify business opportunities in cultural heritage through the food sector.	Design creative and innovative food experiences. Choose products aligned with the profiles coming from the market information through the utilization of					
 4. 	sustainability. The knowledge of slow food approaches and its opportunities. Mediterranean diet approach as model of sustainability.	 Recognize geographical indications and their real values. Recognise the sustainability and the cultural heritage of the Mediterranean diet 	protected designations. 3. Design business based on gastronomy experience.					

As the target of the module about food sustainability are VET students, a remodulation of the level of competences to reach is needed, depending on the VET courses level.

For this reason, a "multilayer" concept will guide the Food Sustainability VET Module, with the possibility to go more in depth in the contents of the training depending on the student profiles.





4. LEARNING OUTCOMES

Nutrition Area

UNIT 1. Healthy and sustainable diets

How to eat healthy and save the planet

Macronutrients, micronutrients, and energy intake; proper « quantity and quality » for balanced diets. The main scientific sources for healthy nutrition.

Consumer behaviors and their implications

Influences on nutritional status including lifestyle, knowledge and beliefs, ethnic and religious choices.

• Novel foods as an alternative to be more sustainable and profitable

The risks, challenges, and opportunities of new and innovative ingredients.

• One health and planetarian diet approach as a model of sustainability

The Planetary Health Diet: The EAT-Lancet Commission.

Ecology Area

UNIT 2. Biodiversity, seasonality, and climate change

• Know how food consumption impacts the environment and biodiversity Highlight the importance of biodiversity at multiple levels.

Impact of food choices on biodiversity

• Know how climate changes and societal challenges influence food production Impacts of climate change in food production.

Impacts on societal behaviour in food production.

• EU and national labelling on organic food

Organic food production and how it is sustainable at local and global levels.

Reading organic food EU and national labelling.

• How gastronomy contributes to biodiversity preservation or loss

The importance of seasonality and diversity at environmental and nutritional levels.

UNIT 3. Water and energy management and food's footprints

• The relationship between our food systems and emerging global environmental risks

Overview on the food system and its impact on the natural environment.

The intensive food production and farming and their footprints.





Innovative and sustainable practices and technologies that aim to integrate the management of land, water, biodiversity, and other environmental resources to meet human needs while ensuring the long-term sustainability of ecosystem services and livelihoods.

Quantification of the different environmental impact of food groups

Water demand, land usage and its implications on climate change.

Food footprints (water and carbon).

• <u>Hints and tips for improving resource efficiency in terms of water and energy management</u> (eg. IV Gamma)

UNIT 4. Food loss and food waste

• The issues related to food waste and losses occurring along the food-supply chain, with particular focus on logistics.

How to reduce your waste: tracking and assessing tools.

Distribution, money savings and final consumption.

• <u>Strategies and/or best practices could be developed to reduce food waste and losses and/or donate</u> leftovers

Convert exploitation strategies into actions through education: re-use / reprocessing of food (vegetable soup, fruit smoothies, etc.), improvements in conservation techniques, recycling and composting. Business and social solutions to reduce food waste (e.g Too good to go; Reefood;)

Proper packaging for prevention

Benefits of packaging reduction strategies.

Food preservation techniques to avoid food loss.

• National rules and laws on food waste to leftovers donation

Economy Area

UNIT 5. Local economy and alternative systems

• The importance of local economy for sustainable development

The concept of local food economies and its impact on the community.

• <u>Strategies and/or best practices of alternative food systems in terms of production, distribution and purchasing.</u>

Practical examples of alternatives business based on local and short supply chains.

(e.g. Lisbon - https://www.rizomacoop.pt/ A praça - https://apraca.pt/pages/sobre-nos/ ISA - https://semear.pt/

Local food commercial value.

Proposing the concept of food sovereignty as an alternative to the concept of food security.

• Circular economy and its role in the promotion of the local economy.

The Economic value and potential benefits of the circular economy as innovative businesses that create employment.





Social Area

UNIT 6. Ethic and inclusive food business

• Fair trade principles and diversity inclusion equity jobs practices.

Decent work, fair prices for producers, fair trade: the food supply chain based on value.

• Knowledge about change makers in the relationship between economy, ecology, and society through a multilevel approach to sustainable development.

Social economy as a business model to develop sustainable food activities (economic growth and local development socially inclusive).

Developing the concept of green social entrepreneur in a practical way (Triple Layer Business Model Canvas).

UNIT 7. Slow food and cultural heritage

the food production.

• The relationship of food with cultural identity of the territories.

The relationship between food culture and daily, spiritual, and social life.

The influence of social and cultural trends on contemporary nutrition.

Gastronomic tourism as an opportunity to develop a sustainable business activity and preserve food heritage and artisanal production.

• <u>Protected designations: roles and applications for sustainability</u>
Protected designations of origin and quality: safeguarding, valuing, and transmitting the know-how of

• The knowledge of slow food approaches and its opportunities. Sustainable food and the concept of "time".

• Mediterranean diet approach as model of sustainability.





ANNEX

TRANING4FOOD E+ Project Training

			NUTRIT	IONAL AREA		
			HEALTHY AND	SUSTAINABLE DIETS		
	TRAINI	NG UNIT			OBJECTIVES	
Definition of Sustainable Diets.			1. To recognize factors, habits and	d food choices that influe	nces our health, our planet and	
2. Health Food and i	ts benefits.			our community.		
3. Impact of consum	ers diets, their choice	s and lifestyles.		2. To be informed about alternati	ves ingredients and unco	nventional food.
4. Novel ingredients	insects and alternati	ve proteins and uncon-	entional food: the	3. To recognise well balanced die	ts according to nutritiona	I needs.
risks, challenges ar	nd opportunities.			4. To recognise proper information	n about health and nutrit	tional food.
5. The case study of	Mediterranean Diet a	s a sustainable food ap	proach.			
LEARNING ACTIVITIES*					LEARNING OUTCOMES	
INFORM	MATION	APPLICATION/PR	ROBLEM SOLVING	KNOWLEDGE	SKILLS	COMPETENCES
THEORETICAL Reading (Text) Checklist	PRACTICAL Answering (open and closed questions)	THEORETICAL Diagrams Timelines and calendars	PRACTICAL At least one from the optional learning activities*	1.How to eat healthy and save the planet. 2. Proper « quantity and quality» for a balanced diet. 3. Consumers behaviours and their implications. 4. Novel ingredients and tendencies as an alternative to be more sustainable and profitable. 5.Mediterranean diet approach as model of sustainability.	Critical thinking on food decision choices Communication skills to persuade consumers to healthy food and to choose balanced diets Select information sources to identify accurate scientific information on the food sector.	1. Decide and act in a way that favours-sustainability and health through nutrition 2. Identify preferences among nutritious foods and build a balanced meal, avoiding food which are less nourishing. 3. Understand nutrition claims from advertisements. 4. Create a healthy, profitable food offers.
Duration of the		hours		,	•	





	ECOLO	OGICAL AREA		
	WATER AND LAND MANAG	GEMENT AND FOOD'S FOO	TPRINTS	
TRAINI	NG UNIT		OBJECTIVES	
Resource pressures and risks.		1. To be conscious of the use of w	rater in the global food su	ipply chain.
2. The food's Footprints and their effects:	footprints of intensive farming.	2. Recognize alternative ways to	educe water and energy	usage.
3. The resource efficiency usage in food a	nd beverage processing for energy	3. Understand the need for chang	ging to a sustainable way	of doing things, individually and
savings.		collectively.		
4. Sustainable land use: the case study of	Urban Food Systems.	4. To understand what is the food	d's footprint impact.	
LEARNING	G ACTIVITIES		LEARNING OUTCOMES	
THEORETICAL	PRACTICAL	KNOWLEDGE	SKILLS	COMPETENCES
Reading	Estimation on your own Footprint	1. The relationship between our	1. Usage the Food	Recognise the inefficient use
Web research	(link to website + explanation) *	food systems and emerging	print parameters	of water.
• Successful case study (1 example of	Dos & Don'ts List*	global environmental risks.		
Urban Food Systems)			2. Strategies to	2. Recognise the decisions and
		2. Quantification of the	reduce the footprints	actions that favour sustainable
		different environmental impact	of their activities.	development of food systems.
		of food groups.		l .
		2. Hints and time for improving	3. Monitoring the	3. Understand how much their
		Hints and tips for improving resource efficiency.	water consumption in their job	food productions impact on have different environmental
		resource efficiency.	their job	impact so that they can make
		4. Urban food systems as		responsible decisions.
		important steps in a longer	4. Strategy to	responsible decisions:
		transformation process towards	improve resource	4. Being vocal supporter of
		sustainability.	efficiency.	efforts to address climate
				change mitigation and
				adaptation in the food sector.
				5. Make for improving resource
				efficiency.
				6. Manage the company
				according to environmental
				sustainability criteria.
Duration of the Module TOT HOURS	16 hours			

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	ECOLOGICAL AREA								
	BIODIVERSITY, SEASONALITY AND ORGANIC FOOD								
	TRAIN	ING UNIT			OBJECTIVES				
1. Preservation of	biodiversity.			1. To understand the importance	of the Biodiversity, its co	nnection with climate change			
2. Seasonality and	l calendar food produc	ts: characteristic and	their economic	and food choices.					
value.				2. To know local, organic and/or s					
3. The organic foo	d: characteristics, labe	elling, pricing, regulation	on and their	3. To explain why using seasonal p					
economic value.				4. To communicate to customers					
4. Food preservati	ion strategies: case stu	idies to re-learn the te	chniques of	5. To re-learn the techniques of p	reservation of food be ab	le to use them "out of season"			
preservation of fo	od (jars, smoking, dryi	ng etc).		in respecting of the sustainability.					
		ACTIVITIES*			LEARNING OUTCOMES				
	RMATION		ROBLEM SOLVING	KWONLEDGE	SKILLS	COMPETENCES			
THEORETICAL Reading (Text) Checklist	PRACTICAL Answering (open and closed questions)	THEORETICAL Diagrams Timelines and calendars	PRACTICAL At least one from the optional learning activities*	1. Principal aspects and properties of season and organic food: his features and labelling in membership country and region. 2. Consequences of food consumption on environment, on the preservation of biodiversity. 3. UE and national labelling on organic food. 4. Re-appropriate recipes and cooking techniques for sustainable food (vegetables, fruits, meat, fish, spices etc)	Recognize products and select providers, supporting seasonal and organic food. Organic food production approach. How to concept and design a communication and promotion campaign for seasonal and organic food producers in determined area.	Select organic and seasonal food offers in their own area through "gastronomic, tasty and fair "point of view. Know the proper regulations and applications that are behind organic production. Adopt strategies to manage organic approach Communicate the importance of seasonality, sustainability, and organic sourcing food.			
	Duration of the Module TOT HOURS 4 hours								





			ECOLO	GICAL AREA			
			FOOD LOSS	AND FOOD WASTE			
TRAINING UNIT				OBJECTIVES			
1. Food Loss reduction	on: definitions and st	rategies.		1. To understand the importance	of the Food loss and Foo	d waste challenges.	
2. Food Waste reduc	tion: definition and	trategies.		2. To explain why food waste and food loss are a problem and a loss of money.			
3. Disposal strategy:	"the second life of ti	ne product"		3. To identify strategies to reduce food waste and legal ways to give a second life the			
Packaging reduction through education and innovation.				project and /or to donate leftovers.			
5. Countries' law.				4. To understand the role of pack	aging plays.		
6. Case studies: Hotel and Restaurants Zero Waste			5. New product lines aimed at minimising waste and/or reusing discarded parts.				
	LEARNING	ACTIVITIES*			LEARNING OUTCOMES		
INFORM	MATION	APPLICATION/PI	ROBLEM SOLVING	KNOWLEDGE	SKILLS	COMPETENCES	
THEORETICAL Reading (Text) Checklist	Answering (open and closed questions)	THEORETICAL Diagrams Timelines and calendars	PRACTICAL At least one from the optional learning activities*	1. The issues related to food waste and losses occurring along the food-supply chain, with particular focus on logistics, distribution, money savings and final consumption. 2. Strategies and/or best practices could be developed to reduce food waste and losses and/or donate leftovers. 3. Policy and environmental implications. 4. Proper packaging for prevention. 5. National rules and laws on food waste in order to donate leftovers.	Reduction of personal waste. Green management. Storage technique. Preservation technique to reduce food waste. Design of specific actions (e.g. menus) aimed at reducing waste.	1. Organise their work more efficiently for avoiding improper behaviour. 2. Plan and implement ecological strategies to reduce food loss. 3. Plan and implement ecological solution to reduce food waste. 4. To recognise and requires to provider the package format and materials to maximize shelf life and minimize food waste. 5. Design strategy geared towards reduction of food waste.	
Duration of th		hours	l	<u> </u>	l	I.	

ECONOMIC AREA								
CIRCULAR ECONOMY AND RESILIENCE								
TRAINING UNIT				OBJECTIVES				
1.Concept and defin	ition of circular econo	my: objectives and be	nefits.	1.Better understanding of the circular economy.				
2.The resilience in the	ne food systems: objec	tives and benefits.		2. Better understanding the conce	ept of resilience applied a	t enterprises.		
3.Circular food econ	omy and its economic	value.		3. To underline the potential economic value of circular economy as winning business				
4.Develop collabora	4.Develop collaborative strategy to implement food business based on circular			4. Learning how to rethink your business dimension.				
economy.				To explore new "sustainable "	collaboration and opport	unities.		
0, 0	on circular economy at							
6. The case study: g	ood practices of circula		d supply chain.					
		ACTIVITIES*		LEARNING OUTCOMES				
THEORETICAL	MATION PRACTICAL	APPLICATION/PI	PRACTICAL	KNOWLEDGE	SKILLS	COMPETENCES		
Reading (Text) Checklist	Answering (open and closed questions)	Diagrams Timelines and calendars	At least one from the optional learning activities*	1. What is circular economy and it's role in the promotion of local economy. 2. Circular economy as profitable business model. 3. The mean of the resilience in the food systems. 4. Knowledge about existing experiences of social enterprises involved in circular economy. 5. Knowledge of funding program of circular economy at national and European level.	Circular thinking. Cultivate resilience. Strategic application of circular economy principles within the own business economy. Communicate the circular economy concepts within the sustainable food system (production, commercialization, restoration).	Implementing practices for a circular economy. To promote actions based on circular economy. Understand the regulation and program of circular economy.		
Duration of the Module TOT HOURS		16 hours						





			FCONO	MIC AREA			
		1004		ID ALTERNATIVE SYSTEM	ıc		
	TRAIN	ING UNIT	L ECONOWIT AN	OBJECTIVES			
1. Local economy fo	r sustainable develop	ment: from local food t	to localized food	1. To recognize the local economy	v development as a key fo	or one's own business.	
	od sovereignty and fo				To better understand how markets for local foods impact our lives and economy.		
			production	To recognize the critical role of local governments and that developing sustainable local			
				food systems requires partnership	-		
4. Demand and offer	r of local and sustains	ble food through alter	natives markets for	4. To explore how innovations in		ustainable food system.	
sustainable agro-foo	d system: farmer ma	rkets; cooperative mar	kets; Community	5. To recognize the economic value	ue of short supply chain in	n food business.	
Supported Agricultu	re; food hubs and GA	s.		6. Safeguard and transmit the kno	ow-how of production an	d distribution methods	
	LEARNING	ACTIVITIES*			LEARNING OUTCOMES		
INFOR	MATION	APPLICATION/PI	ROBLEM SOLVING	KNOWLEDGE	SKILLS	COMPETENCES	
THEORETICAL	PRACTICAL	THEORETICAL	PRACTICAL	1.The importance of local	1. Innovative and	1. To participate at	
Reading (Text) Checklist	Answering (open and closed questions)	Diagrams Timelines and calendars	At least one from the optional learning activities*	economy as a benchmark of sustainable development. 2. The economic impact of local food systems. 3. Knowledge about existing local market facilities. 3. Strategies and/or best practices of alternative food distribution and production. 4. The role of local and national governments in promoting the local economy through the food sector. 5. The redefinition of the relationships between producer and consumers through short food supply chains.	future-oriented local approaches. 2.Set up strategic partnerships 3. Local food added value in advertisement messages 4. How to utilize the branding of local food.	local/national programs that promote the development of local food projects/business. 2. Working in collaboration with the business community and building bridges among complementary business. 3. Empowering participants to identify as possible solutions for their own issue, through alternatives food markets. 4. Identify and use the added value of local products to promote your activity. 5. Identify alternative marketing options and channels for the local food	
Duration of the		hours	l	L	l	L	

SOCIAL AREA								
ETHIC AND INCLUSIVE FOOD BUSINESS								
TRAINING UNIT					OBJECTIVES			
1. Ethics in the food	supply chain from p	roduction to consumpti	ion (e.g. working	1. Identify the values-based food	supply chains (adequate	wages in the entire value chain)		
conditions, equitable	e trade, etc).			2. Explore the ethical issues you confront each time you decide what to produce, eat or				
2. Fair price for prod	2. Fair price for producers .				purchase food.			
Green social entre				Understand the relationship of				
4. CSR (Corporate So	cial Responsibility).			 Explore alternative business models to be more sustainable. 				
		s as inclusive business m	nodels for food as a			ons should play in advancing and		
vector of social inclu				addressing social and global chall				
		G ACTIVITIES*			LEARNING OUTCOMES			
	MATION		ROBLEM SOLVING	KNOWLEDGE	SKILLS	COMPETENCES		
THEORETICAL Reading (Text) Checklist	PRACTICAL Answering (open and closed questions)	THEORETICAL Diagrams Timelines and calendars	PRACTICAL At least one from the optional learning activities*	1. The main principles of equitable trade and how help a fair price for producers and consumers. 2. Knowledge of different business models with an ecological and social approach. 3. The green social entrepreneur as a figure who makes changes in the relationship between economy, ecology and society through a multilevel approach to sustainable development 4. CSR to shape the business and political agenda on sustainability and competitiveness.	1.Inspiring change through active participation 2. Identifying challenges and transform them in business opportunities 3. Set up strategic partnerships 4. Critical thinking 5. Set CSR in a food enterprise	1Understand the proper price of food products. 2. Build a common vision regarding product quality, partner relationships and customer treatment 3. Communicate and justify the prices and value to consumers 4. evaluate and choose strategic instruments for business' transition 5. Build an implementation plan of CSR in a food enterprise		
Duration of th		16 hours	I	<u> </u>	I.	I		





			SOC	IAL AREA				
SLOW FOOD AND CULTURAL HERITAGE								
TRAINING UNIT				OBJECTIVES				
The anthropology of food and the importance of the notion of "time". 2. Varieties and tradition through geographical indications: protected designations of origin (PDOs) and protected geographical indications (PGIs) or STG. 3. The emerging of slow food: culture and traditions related to food sector. 4. The case study: culinary tourism as opportunity to promote local area and economic grow.				1.To better understand food values and its implications on social and cultural level. 2. To recognize the multiple values of food. 3. To understand the unique characteristics of food and their cultural heritage linked to the identity of the territory. 4. To identify alternative business models (cultural, touristic activities related to food sector) to promote sustainability and local development.				
	LEARNING	ACTIVITIES*			LEARNING OUTCOMES			
INFOR	MATION	APPLICATION/PF	ROBLEM SOLVING	KNOWLEDGE	SKILLS	COMPETENCES		
THEORETICAL Reading (Text) Checklist	PRACTICAL Answering (open and closed questions)	THEORETICAL Diagrams Timelines and calendars	PRACTICAL At least one from the optional learning activities*	1. The relationship of food with cultural identity of the territories. 2. Protected designations: roles and applications. 3. The knowledge of slow food approach and their opportunity. 4. Existing brands, quality seals and certifications related to the food. 5. The cultural culinary tourism as opportunity of sustainable business.	1. Respect for the gastronomic and traditional culture. 2. Integration of multidisciplinary sectors. 3. 4. Identify business opportunities in cultural heritage through the food sector. 5. Identify the roles of certifications	1. Using Cultural Competence to understand food practices. 2. Capacity to understand geographical indications and their real values. 3. How to design creative and innovative slow food experience. 5. How choose products aligned with the profiles coming from the market information through the utilization of protected designations. 6. Concept and design own business based on culinary tourism experience.		
Duration of the Module TOT HOURS 12 hours								



